

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(MARK ONE)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended June 30, 2019

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE TRANSITION PERIOD FROM TO

Commission file number 001-34717

Alpha and Omega Semiconductor Limited

(Exact name of Registrant as Specified in its Charter)



Bermuda

(State or Other Jurisdiction of Incorporation or Organization)

77-0553536

(I.R.S. Employer Identification Number)

Clarendon House, 2 Church Street
Hamilton HM 11, Bermuda

(Address of Principal Registered
Offices including Zip Code)

(408) 830-9742

(Registrant's Telephone Number, Including Area Code)

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of each class</u>	<u>Trading Symbol(s)</u>	<u>Name of each exchange on which registered</u>
Common Shares, \$0.002 par value per share	AOSL	The NASDAQ Global Select Market

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months, (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K, or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer

Accelerated filer

Non-accelerated filer

(Do not check if a smaller reporting company)

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of the voting shares held by non-affiliates of the registrant as of December 31, 2018 was approximately \$195 million based on the closing price of the registrant's common share as reported on the NASDAQ Global Select Market on December 31, 2018 (the last business day of the registrant's most recently completed second fiscal quarter). The common shares of the registrant held by each executive officer and director and certain affiliated shareholders who beneficially owned 10% or more of the outstanding common stock of the registrant have been excluded in such calculation as such persons and entities may be deemed to be affiliates of the registrant. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

There were 24,519,530 shares of the registrant's common shares outstanding as of July 31, 2019.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Proxy Statement for the registrant's 2019 Annual General Meeting of Shareholders are incorporated by reference into Part III of this Form 10-K to the extent stated herein. The Definitive Proxy Statement is expected to be filed within 120 days of the registrant's fiscal year ended June 30, 2019.

Alpha and Omega Semiconductor Limited
Form 10-K
For the Year Ended June 30, 2019
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PART I

Item 1. Business

Forward Looking Statements

This Annual Report on Form 10-K and the documents incorporated herein by reference contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, which are subject to the “safe harbor” created by those sections. Forward-looking statements are based on our management's beliefs and assumptions and on information currently available to our management. In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “could,” “intend,” “would,” “expect,” “plan,” “anticipate,” “believe,” “estimate,” “project,” “predict,” “potential” and similar expressions intended to identify forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors, which may cause our actual results, performance, time frames or achievements to be materially different from any future results, performance, time frames or achievements expressed or implied by the forward-looking statements. We discuss many of these risks, uncertainties and other factors in this Annual Report on Form 10-K in greater detail in Item 1A. “Risk Factors.” Given these risks, uncertainties and other factors, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements represent our estimates and assumptions only as of the date of this filing. You should read this Annual Report on Form 10-K in its entirety and with the understanding that our actual future results may be materially different from what we expect. We hereby qualify our forward-looking statements by these cautionary statements. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

Overview

We are a designer, developer and global supplier of a broad portfolio of power semiconductors. Our portfolio of power semiconductors includes approximately 2,100 products, and has grown significantly with the introduction of over 200 new products in each of the fiscal year ended June 30, 2019 and 2018, respectively, and over 80 new products in the fiscal year ended June 30, 2017. Our teams of scientists and engineers have developed extensive intellectual properties and technical knowledge that encompass major aspects of power semiconductors, which we believe enables us to introduce and develop innovative products to address the increasingly complex power requirements of advanced electronics. We have an extensive patent portfolio that consists of 781 patents and 91 patent applications in the United States as of June 30, 2019. We also have a total of 816 foreign patents, which primarily were based on our research and development efforts through June 30, 2019. We differentiate ourselves by integrating our expertise in technology, design, and advanced packaging to optimize product performance and cost. Our portfolio of products targets high-volume applications, including personal computers, flat panel TVs, LED lighting, smart phones, battery packs, quick chargers, home appliances, consumer and industrial motor controls and power supplies for TVs, computers, servers and telecommunications equipment.

During the fiscal year ended June 30, 2019, we continued our diversification strategy by developing new silicon and packaging platforms to expand our serviceable available market, or SAM and offer higher performance products. Our metal-oxide-semiconductor field-effect transistors, or MOSFET, portfolio expanded significantly across a full range of voltage applications. We also developed new technologies and products designed to penetrate into markets beyond our MOSFET computing base, including the consumer, communications and industrial markets as well as power IC for the next generation computing applications.

Our business model leverages global resources, including research and development and manufacturing in the United States and Asia. Our sales and technical support teams are localized in several growing markets. We operate an 8-inch wafer fabrication facility located in Hillsboro, Oregon (the “Oregon fab”), which enables us to accelerate proprietary technology development, new product introduction and improve our financial performance. To meet the market demand for the more mature high volume products, we also utilize the wafer manufacturing capacity of selected third party foundries. For assembly and test, we primarily rely upon our in-house facilities in China. In addition, we utilize subcontracting partners for industry standard packages. We believe our in-house packaging and testing capability provides us with a competitive advantage in proprietary packaging technology, product quality, costs and sales cycle time.

On March 29, 2016, we entered into a joint venture contract (the “JV Agreement”) with two investment funds affiliated with the municipalities of Chongqing (the “Chongqing Funds”), pursuant to which we and Chongqing Funds form a joint venture, (the “JV Company”), for the purpose of constructing a power semiconductor packaging, testing and a 12-inch wafer fabrication facility in the Liangjiang New Area of Chongqing, China (the “JV Transaction”). As of June 30, 2019, we own 50.9%, and the Chongqing Funds own 49.1%, of the equity interest in the JV Company. The JV Company started its assembly

and testing production in the September quarter of 2018 and continued its ramp up during the fiscal year 2019. We also completed installation of equipment and trial production at the 12-inch wafer fabrication facility in fiscal year 2019. In July 2019, we commenced limited mass production at the 12-inch wafer fabrication facility.

In September 2017, we entered into a license agreement with STMicroelectronics International N.V. (“STMicro”), pursuant to which STMicro granted us a world-wide, royalty-free and fully-paid license to use its technologies to develop, market and distribute certain digital power multi-phase controller products, which have been previously offered by STMicro. We have been in the process of developing this new digital power business. Our digital power controller team continues to work with customers in product designs and is making steady progress toward our product roadmap.

We were incorporated in Bermuda on September 27, 2000 as an exempted limited liability company. The address of our registered office is Clarendon House, 2 Church Street, Hamilton HM 11, Bermuda. The address of our U.S. office is Alpha and Omega Semiconductor Incorporated, 475 Oakmead Parkway, Sunnyvale, CA 94085. Telephone number of our U.S. office is (408) 830-9742. We have incorporated various wholly-owned subsidiaries in different jurisdictions, and a subsidiary (the JV Company) in which we have a controlling interest. Please refer to Exhibit 21.1 to this Form 10-K for a complete list of our subsidiaries.

Our industry

Semiconductors are electronic devices that perform a variety of functions, such as converting or controlling signals, processing data and delivering or managing power. With advances in semiconductor technology, the functionality and performance of semiconductors have generally increased over time, while size and cost have generally decreased. These advances have led to a proliferation of more complex semiconductors being used in a wide variety of consumer, computing, communications and industrial markets and have contributed to the growth of the semiconductor industry.

Analog semiconductors

The semiconductor industry is segmented into analog and digital. Analog semiconductors process light, sound, motion, radio waves and electrical currents and voltages. In contrast, digital semiconductors process binary signals represented by a sequence of ones and zeros.

As a result of these fundamental differences, the analog semiconductor industry is distinct from the digital semiconductor industry in terms of the complexity of design and the length of product cycle. Improper interactions between analog circuit elements can potentially render an electronic system inoperable. Experienced engineers engaged in the design process are necessary because computer-aided design cannot fully model the behavior of analog circuitry. Therefore, experienced analog engineers with requisite knowledge are in great demand but short supply worldwide. In addition, analog semiconductors tend to have a longer product life cycle because original design manufacturers, or ODMs and original equipment manufacturers, or OEMs typically design the analog portions of a system to span multiple generations of their products. Once designed into an application, the analog portion is rarely modified because even a slight change to the analog portion can cause unexpected interactions with other components, resulting in system instability.

Power semiconductors

Power semiconductors are a subset of the analog semiconductor sector with their own set of characteristics unique to power architecture and function. Power semiconductors transfer, manage and switch electricity to deliver the appropriate amount of voltage or current to a broad range of electronic systems and also protect electronic systems from damage resulting from excessive or inadvertent electrical charges.

Power semiconductors can be either discrete devices, which typically comprise only a few transistors or diodes, or ICs, which incorporate a greater number of transistors. The function of power discrete devices is power delivery by switching, transferring or converting electricity. Power transistors comprise the largest segment of the power discrete device market. Power ICs, sometimes referred to as power management ICs, perform power delivery and power management functions, such as controlling and regulating voltage and current and controlling power discrete devices.

The growth of the power semiconductor market in recent years has several key drivers. The proliferation of computer and consumer electronics, such as notebooks, tablets, smart phones, flat panel displays and portable media players created the need for sophisticated power management to improve power efficiency and extend battery life. The evolution of these products is characterized by increased functionality, thinner or smaller form factors and decreasing prices. Our Power IC and low voltage (5V-40V) MOSFET products address this market. In the area of AC-DC power supplies for electronic equipment, data centers

and servers, the market is characterized by a continuous demand for energy conservation through higher efficiency, which is driving the need for our medium voltage (40V-400V) and high voltage (500V-1000V) MOSFET products. The increased application of power semiconductors to control motors in white goods and industrial applications, is driving demand for Insulated Gate Bipolar Transistors, or IGBTs. IGBTs are also being used in renewable energy and automotive applications.

The evolution toward smaller form factors and complex power requirements in the low voltage areas has driven further integration in power semiconductors, resulting in power ICs that incorporate the functionalities of both power management and power delivery in a single device. Power ICs can be implemented by incorporating all necessary power functions either on one piece of silicon or multiple silicon chips encapsulated into a single device. Additionally, the advancement in semiconductor packaging technology enables increased power density and shrinking form factors.

Power semiconductor suppliers develop and manufacture their products using various approaches which tend to fall across a wide spectrum of balancing cost savings with proprietary technology advantages. At one end of the spectrum are integrated design manufacturers, or IDMs, which own and operate the equipment used in the manufacturing process and design and manufacture products at their in-house facilities. IDMs exercise full control over the implementation of process technologies and have maximum flexibility in setting priorities for their production and delivery schedules. At the other end of the spectrum are completely-outsourced fabless semiconductor companies, which rely entirely on off-the-shelf technologies and processes provided by their manufacturing partners. These companies seek to reduce or eliminate fixed costs by outsourcing both product manufacturing and development of process technologies to third parties. Our model seeks to achieve the best balance between technological advancement and cost effectiveness by using a dedicated in-house technology research and development team to drive rapid new product developments, while utilizing both in-house and third-party foundry capacity for our products. This is particularly important in the development of power semiconductor products due to the unique nature of their technology. While digital technologies are highly standardized in leading foundries, power semiconductor technologies tend to be more unique as they seek to accommodate a wider range of voltage applications. Accordingly, third-party foundries, which are primarily designed and established for digital technologies, may have limited capabilities when it comes to the development of new power semiconductor technologies.

Our strategies

Our strategy is to advance our position as a designer, developer and global supplier of a broad portfolio of power semiconductors. To accomplish this, we have adopted a strategy that allows us to accelerate the development of our proprietary technology at our in-house fabrication facilities, bring new products to market faster, and improve our financial performance in the long run. This model also provides quicker response to our customer demands, enhances relationships with strategic customers, and provides flexibility in capacity management and geographic diversification of our wafer supply chain. Our in-house manufacturing capability allows us to retain a higher level of control over the development and application of our proprietary process technology, thereby reducing certain operational risks and costs associated with utilizing third-party foundries. We also expect to increase our manufacturing capacity through the JV Transaction, which we believe will also allow us to expand and diversify our markets in China, as well as to accelerate the development of our proprietary process technology and new product offerings.

In addition to our products targeting the PC market, we execute our strategies of diversifying our portfolio of products and expanding into other market segments, including the consumer, communications, power supplies and industrial market segments, and improving gross margin and profit by implementing cost control measures. While we have made progress in our diversification and expansion into additional applications, we continue to support and grow our PC business by expanding bill-of-material content, gaining market share, and acquiring new customers.

We plan to further expand the breadth of our product portfolio to increase our total bill-of-materials within an electronic system and to address the power requirements of additional electronic systems. Our product portfolio currently consists of approximately 2,100 products and we have introduced over 200 new products in this past fiscal year. We will continue to leverage our expertise to further increase our product lines, including higher performance power ICs, IGBTs and high, medium and low voltage MOSFETs, in order to broaden our addressable market and improve our margin profile. We are also in the process of developing a digital power controller product line based on the technology that we licensed from STMicro. We believe that our increased product offerings will allow us to penetrate new end-market applications and provide us with an important competitive advantage. OEMs and ODMs generally prefer to limit their supplier base to a smaller set of vendors capable of providing a comprehensive menu of products across multiple electronic platforms.

Leverage our power semiconductor expertise to drive new technology platforms

We believe that the ever-increasing demand for power efficiency in power semiconductors requires expertise in and a deep understanding of the interrelationship among device physics, process technologies, design and packaging. We also believe that engineers with experience and understanding of these multiple disciplines are in great demand but short supply. Within this context, we believe that we are well positioned to be a leader in providing total power management solutions because of our extensive pool of experienced scientists and engineers and our strong IP portfolio. Accordingly, we intend to leverage our expertise to increase the number of power discrete technology platforms and power IC designs, including future digital power controller products that are currently under development, to expand our product offerings and deliver complete power solutions for our targeted applications. In addition, our ability to develop new technology is enhanced by the operation of our own manufacturing facilities in Oregon and Chongqing.

Increase direct relationships and product penetration with OEM and ODM customers

We have developed direct relationships with key OEMs who are responsible for branding, designing and marketing a broad array of electronic products, as well as ODMs who have traditionally been responsible for manufacturing these products. While OEMs typically focus their design efforts on their flagship products, as the industry has evolved, ODMs are increasingly responsible for designing portions, or entire systems, of the products they manufacture for the OEMs. In addition, several ODMs are beginning to design, manufacture and brand their own proprietary products which they sell directly to consumers. We intend to strengthen our existing relationships and form new ones with both OEMs and ODMs by aligning our product development efforts with their product requirements, increasing the number of our products used within their systems, and leveraging our relationships to penetrate their other products. In addition, we are refocusing our research and development efforts to respond more directly to the market demand by designing and developing new products based on feedback from our customers, which also allows us to reduce time-to-market and sales cycles.

Leverage global business model for cost-effective growth

We intend to continue to leverage our global resources and regional strengths. We will continue to deploy marketing, sales and technical support teams in close proximity to our end customers. We plan to further expand and align our technical marketing and application support teams along with our sales team to better understand and address the needs of our end customers and their end-market applications, in particular for those with the new technology platforms developed in this past year and in the future. This will assist us in identifying and defining new technology trends and products and to help us gain additional design wins. In addition, we have made significant progress in the past fiscal year towards the completion of the manufacturing facilities and commencement of production at the JV Company. We expect the JV Company will, in the long term, reduce the cost of manufacturing our products and accelerate the development of new products, while allowing us to gain valuable access to new customers in China.

Our products

To serve the large and diverse analog market for power semiconductors, we have created a broad product portfolio consisting of two major categories: power discretes and power ICs.

Our power discretes products consist primarily of low, medium and high voltage power MOSFETs. Our low voltage MOSFET series is based on our proprietary silicon and package technologies, with deep application know how in various market segments. We have precisely defined technology platforms to address different requirements from various applications. Our medium voltage MOSFETs provide best optimized performance with high efficiency, high robustness and high reliability, and are widely used in applications such as TV backlighting, telecom power supplies, and industrial applications. We expanded our high voltage MOSFET portfolio by releasing our newest aMOS5 technology platform targeted to address robust consumer and industrial applications. Our high-voltage portfolio includes our proprietary insulated-gate bipolar transistor ("IGBT") technology, which we developed highly robust and easy-to-use solutions designed for industrial motor control and white goods applications.

Our power ICs deliver power as well as control and regulate the power management variables, such as the flow of current and level of voltage. We continued to expand our EZBuck power IC family with products that feature lower on-resistance, less power consumption, small footprint and thermally enhanced packages. While we derive the majority of our revenue from the sales of power discretes products, sales of power ICs continue to gain traction during the past years. We have expanded our power IC product family to include smart load switches with reverse blocking capability, designed to protect applications against high voltage exposure.

The following table lists our product families and the principal end uses of our products:

Product Family	Description	Product Categories within Product Type	Typical Application
Power Discretes	Low on-resistance switch used for routing current and switching voltages in power control circuits High power switches used for power circuits	DC-DC for CPU/GPU DC-AC conversion AC-DC conversion Load switching Motor control Battery protection Power factor correction	Smart phone chargers, battery packs, notebooks, desktop and servers, data centers, base stations, graphics card, game boxes, TVs, AC adapters, power supplies, motor control, power tools, E-vehicles, white goods and industrial motor drives, UPS systems, solar inverters and industrial welding
Power ICs	Integrated devices used for power management and power delivery	DC-DC Buck conversion DC-DC Boost conversion Smart load switching DrMOS power stage	Flat panel displays, TVs, Notebooks, graphic cards, servers, DVD/Blu-Ray players, set-top boxes, and networking equipment
	Analog power devices used for circuit protection and signal switching	Transient voltage protection Analog switch Electromagnetic interference filter	Notebooks, desktop PCs, tablets, flat panel displays, TVs, smart phones, and portable electronic devices

Power discrete products

Power discretes are used across a wide voltage and current spectrum, requiring them to operate efficiently and reliably under harsh conditions. Due to this wide applicability across diverse end-market applications, we market general purpose MOSFETs that are used in multiple applications as well as MOSFETs targeted for specific applications.

Our current power discrete product line includes industry standard trench MOSFETs, SRFETs, XSFET, electrostatic discharge, protected MOSFETs, high and mid-voltage MOSFETs and IGBTs.

Power IC products

In addition to the traditional monolithic or single chip design, we employ a multi-chip approach for the majority of our power ICs. This multi-chip technique leverages our proprietary MOSFET and advanced packaging technologies to offer integrated solutions to our customers. This allows us to update product portfolios by interchanging only the MOSFETs without changing the power management IC, thereby reducing the time required for new product introduction and providing optimal solutions to our customers. We believe that our power IC products improve our competitive position by enabling us to provide higher power density solutions to our end customers than some of our competitors.

The incorporation of both power delivery and power management functions tends to make power ICs more application specific because these two functions have to be properly matched to a particular end product. We have local technical marketing and applications engineers who closely collaborate with our end customers to help ensure that power IC specifications are properly defined at the beginning of the design stage.

New Product Introduction

We introduced several new products based on our proprietary technology platform and continue to expand our product families. During the fourth quarter of fiscal year of 2019, we released the new α MOS5 family, which is our latest generation of high voltage MOSFET, designed to meet the high efficiency and high-density needs for Quick Charger, Adapter, PC Power, Server, Industrial Power, Telecom, and Hyperscale Datacenter applications. In addition, we released Super Low Capacitance TVS for high-speed line protection using the latest Super Low Cap TVS platform. This new device is ideal for USB Type-C

applications such as notebooks and mobile devices. During the third quarter of fiscal year of 2019, we introduced a new family of EZBuck™ regulators. The new devices provide a compact, efficient power converter solution for next-generation chipsets used in high-end TVs, servers, data storage systems, networking and other compact PC systems. We also introduced a high SOA MOSFET for hot swap applications. This new device delivers low R_{dson} with a high Safe Operating Area (SOA) capabilities ideally suited for demanding applications such as hot swap and eFuse. High SOA is essential in server hot swap applications where the MOSFET needs to be robust to manage the high in-rush current effectively. Moreover, we launched a new 650V α GaN™ product family. These high voltage MOSFETs ideally suited for high efficiency and high-density power supplies in the telecom, server, and consumer adapter markets. High-efficiency server power supplies are needed to reduce cooling requirements, maximize rack area, and minimize the associated energy cost. In addition, we announced latest XSPairFET™ buck-boost MOSFET for type-c applications such as notebook, USB hubs, and power banks. During the first quarter of fiscal year of 2019, we announced a new Type-C Power Delivery compliant input protection switch with up to 28V over-voltage protection. This new device offers low R_{DS(ON)} (20mohm) in a thermally enhanced 3x3mm DFN package, made possible by our advanced co-packaging technology, combining a high performance IC with protection features and our latest high SOA MOSFET. We also announced new TO-Leadless (TOLL) packaging technology for high current 400A applications. The TOLL packaging technology offers very low package resistance and inductance due to the clip technology in comparison to other TO-Leadless packages using standard wire-bonding technology which enables improved EMI performance.

Distributors and customers

We have established direct relationships with key OEMs, including Dell Inc., Hewlett-Packard Company, LG Electronics, Inc. and Samsung Group, most of whom we serve through our distributors and ODMs. We sell to Samsung Group directly which accounted for 5.2%, 5.1% and 10.6% of our revenue for the fiscal years ended June 30, 2019, 2018 and 2017, respectively. In addition, based on our historical design win activities, our power semiconductors are also incorporated into products sold to certain OEMs.

Through our distributors, we provide products to ODMs who traditionally are contract manufacturers for OEMs. As the industry has evolved, ODMs are increasingly responsible for designing portions, or entire systems, of the products they manufacture for the OEMs. In addition, several ODMs are beginning to design, manufacture and brand their own proprietary products, which they sell directly to consumers. Our ODM customers include Compal Electronics, Inc., Foxconn, Quanta Computer Incorporated, Pegatron, Wistron Corporation and AOC International.

In order to take advantage of the expertise of end-customer fulfillment logistics and shorter payment cycles, we sell most of our products to distributors. In general, under the agreements with our distributors, they have limited rights to return unsold merchandise, subject to time and volume limitations. As of June 30, 2019, 2018 and 2017, our two largest distributors were WPG Holdings Limited, or WPG, and Promate Electronic Co. Ltd., or Promate. Sales to WPG and Promate accounted for 36.4% and 28.8% of our revenue, respectively, for the fiscal year ended June 30, 2019, 35.2% and 28.3% of our revenue, respectively, for the fiscal year ended June 30, 2018, and 35.8% and 26.9% of our revenue, respectively, for fiscal year ended June 30, 2017, respectively.

Sales and marketing

Our marketing division is responsible for identifying high growth markets and applications where we believe our technology can be effectively deployed. We believe that the technical background of our marketing team, including application engineers, helps us better define new products and identify potential end customers and geographic and product market opportunities. For example, as part of our market diversification strategy, we have deployed and plan to recruit more for our new market segments, field application engineers, or FAEs, who provide real-time and on-the-ground responses to our end customer needs. FAEs work with our end customers to understand their requirements, resolve technical problems, strive to anticipate future customer needs and facilitate the design-in of our products into the end products of our customers. We believe this strategy increases our share of revenue opportunities within the applications we currently serve, as well as in new end-market applications.

Our sales team consists of sales personnel, field application engineers, customer service representatives and customer quality engineers who are responsible for key accounts. We strategically position our team near our end customers through our offices in Taipei, Hong Kong, Shenzhen, Shanghai, Qingdao, Tokyo, Seoul, Heilbronn, and Sunnyvale, California, complemented by our applications centers in Sunnyvale and Shanghai. In addition, our distributors and sales representatives assist us in our sales and marketing efforts by identifying potential customers, sourcing additional demand and promoting our products, in which case we may pay a sales commission to these distributors.

Our sales cycle varies depending on the types of products and can range from six to eighteen months. In general, our traditional power discrete products in the PC and TV applications are progressing more rapidly through the design and

marketing processes, therefore they generally have shorter sales cycle. In contrast, our newer Power IC and IGBT products, mostly in the power supply, home appliance and industrial applications, require a more extended design and marketing timeline and thus have longer sales cycle. Typically, our sales cycle for all products comprises of the following steps:

- identification of a customer design opportunity;
- qualification of the design opportunity by our FAEs through comparison of the power requirements against our product portfolio;
- provision of a product sample to the end customer to be included in the customer's pre-production model with the goal of being included in the final bill of materials; and
- placement by the customer, or through its distributor, of a full production order as the end customer increases to full volume production.

Competition

The power semiconductor industry is characterized by fragmentation with many competitors. We compete with different power semiconductor suppliers, depending on the type of product lines and geographical area. Our key competitors in power discretes and power ICs are primarily headquartered in the United States, Japan, Europe and Taiwan. Our major competitors in power discretes include Infineon Technologies AG, MagnaChip Semiconductor Corporation, ON Semiconductor Corp., STMicroelectronics N.V., Toshiba Corporation, Diodes Incorporated and Vishay Intertechnology, Inc. Our major competitors for our power ICs include Global Mixed-mode Technology Inc., Monolithic Power Systems, Inc., ON Semiconductor Corp., Richtek Technology Corp., Semtech Corporation, Texas Instruments Inc. and Vishay Intertechnology, Inc..

Our ability to compete depends on a number of factors, including:

- our success in expanding and diversifying our serviceable markets, and our ability to develop technologies and product solutions for these markets;
- our capability in quickly developing and introducing proprietary technology and best-in-class products;
- the performance and cost-effectiveness of our products relative to that of our competitors;
- our ability and capacity to manufacture, package and deliver products in large volume on a timely basis at a competitive price;
- our success in utilizing new and proprietary technologies to offer products and features previously not available in the marketplace;
- our ability to recruit and retain analog semiconductor designers and application engineers; and
- our ability to protect our intellectual property.

Some of our competitors have longer operating histories, more brand recognition, and significantly greater financial, technical, research and development, sales and marketing, manufacturing and other resources. However, we believe that we can compete effectively through our integrated and innovative technology platform and design capabilities, including our strong and extensive patent portfolio, strategic global business model, expanding suites of new products, diversified and broad customer base, and excellent on-the-ground support and quick time to market for our products.

Seasonality

As we provide power semiconductors used in consumer electronic products, our business is subject to seasonality. Our sales seasonality is affected by a number of factors, including global and regional economic conditions as well as the PC market conditions, revenue generated from new products, changes in distributor ordering patterns in response to channel inventory adjustments and end customer demand for our products and fluctuations in consumer purchase patterns prior to major holiday seasons.

Backlog

Our sales are made primarily pursuant to standard purchase orders from distributors and direct customers. The amount of backlog to be shipped during any period depends on various factors, and all orders are subject to cancellation or modification,

usually with no penalty to customers. The quantities actually purchased by customers, as well as shipment schedules, are frequently revised to reflect changes in both the customers' requirements and in manufacturing availability. Therefore, our backlog at any point in time is not a reliable indicator of our future revenue.

Research and development

Because we view technology as a competitive advantage, we invest significant time and capital in research and development to address the technology intensive needs of our end customers. Our research and development expenditures for the fiscal years of 2019, 2018 and 2017 were \$46.4 million, \$37.3 million and \$29.8 million, respectively. Our research and development expenditures primarily consist of salaries, bonuses, benefits, share-based compensation expense, expenses associated with new product prototypes, travel expenses, fees for engineering services provided by outside contractors and consultants, amortization of software and design tools, depreciation of equipment and overhead costs. We continue to invest in developing new technologies and products utilizing our own fabrication and packaging facilities as it is critical to our long-term success. We also evaluate appropriate investment levels and stay focused on new product introductions to improve our competitiveness. We have research and development teams in Silicon Valley (Sunnyvale, California), Oregon, Taipei, Taiwan, and Shanghai, China. We believe that these diverse research and development teams enable us to develop leading edge technology platforms and new products. Our areas of research and development focus include:

Packaging technologies: Consumer demand for smaller and more compact electronic devices with higher power density is driving the need for advanced packaging technology. Our group of dedicated packaging engineers focuses on smaller form factor, higher power output with efficient heat dissipation and cost-effectiveness. We have invested resources to develop and enhance our proprietary packaging technologies, including the establishment of our in-house packaging and testing facilities. We believe that our efforts to develop innovative packaging technologies will continue to provide new and cost-effective solutions with higher power density to our customers. During the fiscal year ended June 30, 2019, we continued our diversification strategies by developing new silicon and packaging platforms to expand our SAM and offer higher performance products.

Process technology and device physics: We focus on specialized process technology in the manufacturing of our products, including vertical DMOS, Shielded Gate Trench, Trench field stop IGBTs, charge-balance high voltage MOSFETs, Schottky Diode and BCDMOS processes. Our process engineers work closely with our design team to deploy and implement our proprietary manufacturing processes at our Oregon fab, and more recently, at the Chongqing manufacturing facility under the JV, as well as the third-party foundries that fabricate our wafers. We also expect our 12-inch fab at the JV Company will provide us with enhanced ability to develop and accelerate new process technology for advanced products. To improve our process technology, we continue to develop and enhance our expertise in device physics in order to better understand the physical characteristics of materials and the interactions among these materials during the manufacturing process.

New products and new technology platforms: We also invest significantly in the development of new technology platforms and introduction of new products. Because power management affects all electronic systems, we believe that developing a wide portfolio of products enables us to target new applications in addition to expanding our share of power management needs served within existing applications.

As a technology company, we will continue our significant investment in research and development in our low voltage, medium voltage, and high voltage power discretes, IGBT and power modules and power ICs by developing new technology platforms and new products that allow for better product performance, more efficient packages and higher levels of integration.

Operations

The manufacture of our products is divided into two major steps: wafer fabrication and packaging and testing.

Wafer fabrication

Our Oregon fab allows us to accelerate the development of our technology and products, as well as to provide better services to our customers. We allocate our wafer production between our in-house facility and third-party foundries, although in the past three years, we have gradually reduced our reliance on third-party foundries and increased allocation of capacity to our Oregon fab. Currently our main third-party foundry is Shanghai Hua Hong Grace Electronic Company Limited, ("HHGrace"), or formerly HHNEC, located in Shanghai. HHGrace has been manufacturing wafers for us since 2002. HHGrace manufactured 14.1%, 15.4% and 18.6% of the wafers used in our products for the fiscal years ended June 30, 2019, 2018 and 2017, respectively.

On March 29, 2016, we entered into the JV agreement with two investment funds affiliated with the municipalities of Chongqing for the purpose of constructing a power semiconductor packaging, testing and 12-inch wafer fabrication facility in the Liangjiang New Area of Chongqing. The JV Company started its assembly and testing production in the September quarter of 2018 and continued to ramp up its capacity during the fiscal year 2019. We also completed installation of equipment and trial production at the 12-inch wafer fabrication facility in fiscal year 2019. In July 2019, we commenced limited mass production at the 12-inch wafer fabrication facility. We believe the JV Company will increase and diversify our customer base, particularly in China, and accelerate the development of proprietary process technology.

Packaging and testing

Completed wafers from the foundries are sent to our in-house packaging and testing facilities or to our subcontractors, where the wafers are cut into individual die, soldered to lead frames, wired to terminals and then encapsulated in protective packaging. After packaging, all devices are tested in accordance with our specifications and substandard or defective devices are rejected. We have established quality assurance procedures that are intended to control quality throughout the manufacturing process, including qualifying new parts for production at each packaging facility, conducting root cause analysis, testing for lots with process defects and implementing containment and preventive actions. The final tested products are then shipped to our distributors or customers.

Our in-house and wholly-owned packaging and testing facilities are located in Shanghai, China which handle most of our packaging and testing requirements for our products. In addition, the JV Company handles a portion of our packaging and testing requirement. We continuously increase the outsourcing portion of our packaging and testing requirements to other contract manufacturers to minimize the effect of market fluctuation. Our facilities have the combined capacity to package and test over 600 million parts per month and have available floor space for new package introductions. We believe our ability to package and test our products internally represents a strategic advantage as it protects our proprietary packaging technology, increases the rate of new package introductions, reduces operating expenses and ultimately improves our profit margins.

Quality assurance

Our quality assurance practices aim to consistently provide our end customers with products that are reliable, durable and free of defects. We strive to do so through design for manufacturing, and continuous improvement in our product design and manufacturing and close collaboration with our manufacturing partners. Our manufacturing operations in China and our manufacturing facility in Oregon are certified to the ISO9001 and IATF16949:2016. These Quality Management System certifications are in recognition of our quality assurance standards. Both ISO9001 and IATF16949:2016 are sets of criteria and procedures established by International Organization of Standardization for developing a fundamental quality management system and focusing on continuous improvement, defect prevention and the reduction of variation and waste. Our products are also in compliance with Restrictions on the use of Hazardous Substances, or RoHS 2.0.

We maintain a supplier management and process engineering team in Shanghai that works with our third-party foundries and packaging and testing subcontractors to monitor the quality of our products, which is designed to ensure that manufacturing of our products, is in strict compliance with our process controls, monitoring procedures and product requirements. We also conduct periodic reviews and annual audits to ensure supplier performance. For example, we examine the results of statistical process control systems, implement preventive maintenance, verify the status of quality improvement projects and review delivery time metrics. In addition, we rate and rank each of our suppliers every quarter based on factors such as their quality and performance. Our facility in Oregon integrates manufacturing process controls through our manufacturing execution system, coupled with wafer process controls that include monitoring procedures, preventative maintenance, statistical process control, and testing to ensure that finished wafers delivered will meet and exceed quality and reliability requirements. All materials used to manufacture wafers are controlled through a strict qualification process.

Our manufacturing processes use many raw materials, including silicon wafers, gold, copper, molding compound, petroleum and plastic materials and various chemicals and gases. We obtain our raw materials and supplies from a large number of sources. Although supplies for raw materials used by us are currently adequate, shortages could occur in various essential materials due to interruption of supply or increased demand in the industry.

Intellectual property rights

Intellectual property is a critical component of our business strategy, and we intend to continue to invest in the growth, maintenance and protection of our intellectual property portfolio. We own significant intellectual property in many aspects of power semiconductor technology, including device physics and structure, wafer processes, circuit designs, packaging, modules and subassemblies. We have also entered into intellectual property licensing agreements with other companies, including On Semiconductor Corp. and Giant Semiconductor Corporation, to use selected third-party technology for the development of our

products, although we do not believe our business is dependent to any significant degree on any individual third-party license agreement. On September 5, 2017, we entered into a license agreement with STMicroelectronics International N.V. (“STMicro”), pursuant to which STMicro granted us a world-wide, royalty-free and fully-paid license to use its technologies to develop, market and distribute certain digital multi-phase controller products, which have been offered previously by STMicro. This license agreement allows us to develop a new digital power business that will design and offer a full suite of advance digital power controller products.

While we focus our patent efforts in the United States, we file corresponding foreign patent applications in other jurisdictions, such as China and Taiwan, when filing is justified by cost and strategic importance. The patents are increasingly important to remain competitive in our industry, and a strong patent portfolio will facilitate the entry of our products into new markets. As of June 30, 2019, we had 781 patents issued in the United States, of which 774 were based on our research and development efforts and 7 were acquired, and these patents are set to expire between 2022 and 2038. We also had a total of 816 foreign patents, including 385 Chinese patents, 400 Taiwanese patents, 21 Korean patents, 4 Hong Kong patents and 6 Japanese patents as of June 30, 2019. Substantially all of our foreign patents were based on our research and development efforts. These foreign patents will expire in the years between 2024 and 2038. In addition, as of June 30, 2019, we had a total of 257 patent applications, of which 91 patents were pending in the United States, 86 patents were pending in China, 49 patents were pending in Taiwan and 31 patents were pending in other countries.

As our technologies are deployed in new applications and as we diversify our product portfolio based on new technology platforms, we may be subject to new potential infringement claims. Patent litigation, if and when instituted against us, could result in substantial costs and a diversion of our management's attention and resources. However, we are committed to vigorously defending and protecting our investment in our intellectual property. Therefore, the strength of our intellectual property program, including the breadth and depth of our portfolio, will be critical to our success in the new markets we intend to pursue.

In addition to patent protection, we also rely on a combination of trademark, copyright (including mask work protection), trade secret laws, contractual provisions and similar laws in other jurisdictions. We also enter into confidentiality and invention assignment agreements with our employees, consultants, suppliers, distributors and customers and seek to control access to, and distribution of, our proprietary information.

Environmental matters

The semiconductor production process, including the semiconductor wafer manufacturing and packaging process, generates air emissions, liquid wastes, waste water and other industrial wastes. We have installed various types of pollution control equipment for the treatment of air emissions and liquid waste and equipment for recycling and treatment of water in our packaging and testing facilities in China and wafer manufacturing facility in Oregon, USA. Waste generated at our manufacturing facilities, including but not limited to acid waste, alkaline waste, flammable waste, toxic waste, oxide waste and self-igniting waste, is collected and sorted for proper disposal. Our operations in China are subject to regulation and periodic monitoring by China's State Environmental Protection Bureau, as well as local environmental protection authorities, including those under the Shanghai Municipal Government, which may in some cases establish stricter standards than those imposed by the State Environmental Protection Bureau. Our operation in Oregon is subject to Oregon Department of Environmental Regulations, Federal Environmental Protection Agency laws and regulations, and local jurisdictional regulations. We believe that we have been in material compliance with applicable environmental regulations and standards and have not had a material or adverse effect on our results of operations from complying with these regulations.

We have implemented an ISO 14001 environmental management system in our manufacturing facilities in China and Oregon. We also require our subcontractors, including foundries and assembly houses, to meet ISO14001 standards. We believe that we have adopted pollution control measures for the effective maintenance of environmental protection standards consistent with the requirements applicable to the semiconductor industry in China and the U.S.

Our products sold in worldwide are subject to RoHS in Electrical and Electronic Equipment, which requires that the products do not contain more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl and polybrominated diphenyl ether flame retardants. Our manufacturing facilities in China also obtained QC080000 certification, which is an IECQ Certificate of Conformity Hazardous Substance Process Management for European Directive 2002/95/EC requirements and a Certificate of Green Partner for Sony Green Partner Program. We avoid using these restricted materials to the extent possible when we design our products.

We are also subject to SEC rules that require diligence, disclosure and reporting on whether certain minerals and metals, known as conflict minerals, used in our products originate from the Democratic Republic of Congo and adjoining countries. As of June 30, 2019, 2018 and 2017, we were in compliance with the related conflict minerals rule.

Employees

As of June 30, 2019, we had approximately 4,338 employees, of whom approximately 655 were located in the United States, 3,548 were located in China, 3 were located in Europe, and 132 were located in other parts of Asia. None of our employees is represented by a collective bargaining agreement. We consider our relationships with our employees to be good.

Executive Officers

The following table lists the names, ages and positions of our executive officers as of July 31, 2019. There are no family relationships between any executive officer.

<u>Name</u>	<u>Age</u>	<u>Position</u>
Mike F. Chang, Ph.D.	74	Chairman of the Board and Chief Executive Officer
Yueh-Se Ho, Ph.D.	67	Director and Chief Operating Officer
Yifan Liang	55	Chief Financial Officer and Corporate Secretary
Daniel Kuang Ming Chang	64	Senior Vice President of Strategic Business and World-wide Applications Engineering

Mike F. Chang, Ph.D., is the founder of our company and has served as our Chairman of the Board and Chief Executive Officer since the incorporation of our company. Dr. Chang has extensive experience in both technology development and business operations in the power semiconductor industry. Prior to establishing our company, Dr. Chang served as the Executive Vice President at Siliconix Incorporated, a subsidiary of Vishay Intertechnology Inc., a global manufacturer and supplier of discrete and other power semiconductors, or Siliconix, from 1998 to 2000. Dr. Chang also held various management positions at Siliconix from 1987 to 1998. Earlier in his career, Dr. Chang focused on product research and development in various management positions at General Electric Company from 1974 to 1987. Dr. Chang received his B.S. in electrical engineering from National Cheng Kung University, Taiwan, and M.S. and Ph.D. in electrical engineering from the University of Missouri.

Yueh-Se Ho, Ph.D., is a co-founder of our company and has served as our Chief Operating Officer since January 2006 and our director since March 2006. Dr. Ho has held various operational management positions in our company since our inception, including the Vice President of Worldwide Operations from 2003 to 2006 and the Vice President of Back End Operations from 2000 to 2003. Prior to co-founding our company, Dr. Ho served as the Director of Packaging Development and Foundry Transfer at Siliconix from 1998 to 2000. Dr. Ho received his B.S. in chemistry from Tamkang University, Taiwan, and Ph.D. in chemistry from the University of Pittsburgh.

Yifan Liang has been serving as our Chief Financial Officer since August 2014 and Corporate Secretary since November 2013. Mr. Liang served as our Interim Chief Financial Officer from November 2013 to August 2014, our Chief Accounting Officer since October 2006, and our Assistant Corporate Secretary from November 2009 to November 2013. Mr. Liang joined our company in August 2004 as our Corporate Controller. Prior to joining us, Mr. Liang held various positions at PricewaterhouseCoopers LLP, or PwC, from 1995 to 2004, including Audit Manager in PwC's San Jose office. Mr. Liang received his B.S. in management information system from the People's University of China and M.A. in finance and accounting from the University of Alabama.

Daniel Kuang Ming Chang has been serving as our Senior Vice President of Business Development and World-wide Applications Engineering since November 13, 2017. Mr. Chang served as our Senior Vice President of Marketing from August 3, 2015 to November 12, 2017, our Vice President of Power IC Product Line and Applications Engineering from October 2011 to August 2, 2015, our Vice President of Strategic Marketing and Applications Engineering from May 2010 to October 2011, and our Director of Strategic Marketing and Applications Engineering from February 2009 to April 2010. Prior to joining our company, Mr. Chang served as Vice President of new product line at Richtek Inc, a power management company in Taiwan, from 2005 to 2009. He also served as Vice President of System Engineering at Lovoltech Inc, a startup semiconductor company in Sunnyvale, California from 2001 to 2005. Mr. Chang received his M.S. in physics from National Tsing Hua University of Taiwan, and a B.S. in electrical engineering from Taiwan National University.

Available Information

Our filing documents and information with the Securities and Exchange Commission (the "SEC") are available free of charge electronically through our Internet website, www.aosmd.com, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. In addition, the SEC maintains a website (www.sec.gov) that contains reports, proxy statements, and other information that we file electronically.

Item 1A. Risk Factors

Risks Related to Our Business

Our joint venture with the Chongqing government may not succeed as expected.

In March 2016, we entered into a joint venture contract (the “JV Agreement”) with two investment funds owned by the municipalities of Chongqing, China (the “Chongqing Funds”), pursuant to which we and the Chongqing Funds formed a joint venture (the “JV Company”) for the purpose of constructing a power semiconductor packaging/testing and wafer fabrication facility. The JV Company started its assembly and testing production in the September quarter of 2018 and continued its ramp up during the fiscal year 2019. We also completed installation of equipment and trial production at the 12-inch wafer fabrication facility in fiscal year 2019. In July 2019, we commenced limited mass production at the 12-inch wafer fabrication facility. The initial ramp up of the JV Company’s operations is costly and for the short term will negatively impact our results of operations. While we believe the JV Transaction will enhance our ability to accelerate growth and improve our profitability, there is no guarantee that it will succeed as we initially expected. We may encounter unanticipated difficulties and obstacles that may delay or prevent the commencement of the JV Company’s operation, some of which are outside of our control. These difficulties may include unexpected costs and delays in transferring our assembly and testing operations to the new facility; inability to coordinate and integrate the labor forces; failure of the Chongqing Funds to meet their obligations under the JV Agreement, such as delays in capitalizing the JV Company based on our original timeline; and inability to provide customers with required services.

Even after the JV Company commences operation, we may not fully realize the anticipated benefits of the project, such as cost savings, improvement in working capital, increased gross margin, revenue and profitability, enhanced market share for our products; and increased diversification of our products and customers. The establishment and operation of a new manufacturing facility such as the JV Company involve significant risks and challenges, including, but are not limited to, the following:

- Inability to gain or sustain sufficient new customers and market shares to offset the additional costs of building and operating a new facility;
- Lack of sufficient control over the operation and finances of the joint venture;
- Insufficient personnel with requisite expertise and experiences to operate a 12-inch fabrication facility;
- High cost and unexpected expenses relating to upgrading and improving the packaging and testing and fabrication facilities;
- Inability to fully integrate the joint venture with our existing fabrication facility in Oregon, and inability to fully utilize both fabrication facilities;
- Failure of Chongqing Funds to meet its obligations under the JV Agreement;
- Difficulties in protecting and enforcing our intellectual property rights;
- Difficulties in maintaining international communications and coordination between our locations in the U.S. and China;
- Inability to take advantage of the expected tax savings;
- Changes or uncertainties in economic, legal, regulatory, social and political conditions in China, and lack of transparency and certainty in the Chinese regulatory process;
- Labor disputes and difficulties in recruiting new employees;
- Additional costs and complexity with compliance of local and state regulations of Chongqing; and
- New or enhanced U.S. restrictions on the transfer of technology or know-how to the JV Company.

In addition, we may be subject to the risk of under-utilization of the facilities at the JV Company. The operation of the JV Company’s facilities, including the assembly and testing facilities and the fab, requires significant fixed cost. In order to manage the capacity of the wafer fabrication facility efficiently, we must perform a forecast of long-term market demand and general economic conditions for our products. Because market conditions may vary significantly and unexpectedly, our forecast may change significantly at any time, and we may not be able to make timely adjustments to our fabrication capacity in response to these changes. If our forecast is incorrect or if we are not able to fully utilize the capacities of the facilities at the JV Company, we may not be able to absorb the cost of operation, which will adversely affect our results of operations.

Any of the foregoing risks could materially reduce the expected return of our investment in the JV Transaction and adversely affects our business operations, financial performance and the trading price of our shares.

Proposed new additional tariffs on imported goods from China could adversely affect our business operations.

The President of the United States has recently stated that a 10% tariff on an additional \$300 billion of a wide range of goods and materials imported from China will be imposed in two phases, September 1 and December 15, in addition to the 25% U.S. tariffs already imposed on \$250 billion of Chinese goods and materials, with tariffs thus affecting nearly all goods imported from China. These goods, absent exemptions, would include products and applications, including consumer electronics, that incorporate our power discrete and power IC products. In response, China has imposed tariffs on certain American products, and may take additional actions if these additional U.S. tariffs are imposed. The continuing trade war could have significant adverse effects on world trade and the world economy. While it is too early to predict if the proposed additional U.S. tariffs will be imposed, or how the proposed additional tariffs will impact our business, we believe that the imposition of the proposed additional tariffs by the U.S. government on products incorporating our power semiconductors could deter our U.S. customers from purchasing our products originating from China. If so, this could reduce demand for our power semiconductor products or result in pricing adjustments that would lower our gross margin, which could have a material adverse effect on our business and results of operations.

We may not be able to successfully develop our digital power business.

In September 2017, we entered into a license agreement with STMicro, which allows us to develop and market certain digital power multi-phase controller products and enter into a new market, primarily in the computer server segment. We are in the process of developing this new digital power business and expect to incur significant startup costs, including costs relating to the hiring and compensation of qualified engineers and technical staff; development of marketing and sales infrastructure, particularly in the computer server market; and other research and development and management activities. We do not expect this new business to generate sufficient revenue to offset our costs in the short term, and there is no guarantee that our attempt to develop a profitable digital business will ultimately succeed. The success of our new digital power business depends on a number of factors, including the following:

- competition from other companies with greater resources and experiences and more established reputations in the digital power market;
- the availability of and our ability to recruit and attract qualified personnel;
- our lack of experience and reputation in the digital power market;
- difficulties in designing products acceptable to customers; and
- inadequate sales and marketing capability.

Any one of these factors may negatively impact our ability to create a successful digital power business, which would adversely affect our financial condition and results of operations.

The decline of personal computing (“PC”) markets may have a material adverse effect on our results of operations.

A significant amount of our revenue is derived from sales of products in the PC markets such as notebooks, motherboards and notebook battery packs. Our revenue from the PC markets accounted for approximately 45.9%, 41.6% and 39.1% of our total revenue for the years ended 2019, 2018 and 2017, respectively. The increasing popularity of smaller, mobile computing devices such as tablets and smart phones with touch interfaces is rapidly changing the PC markets both in the United States and abroad. In the past, we experienced a significant reduction in the demand for our products due to the declining PC markets, which had negatively impacted our revenue, profitability and gross margin. The decline of the PC markets also adversely affected our ability to adjust inventory levels in response to the lower shipments, which had negatively impacted our gross margins. There is no assurance that such decline will not occur again and if it does, we may not be able to implement measures successfully to mitigate or reduce the negative impact on our financial conditions and results of operations.

Our strategy of diversification into different market segments may not succeed according to our expectations and may expose us to new risks and place significant strains on our management, operational, financial and other resources.

As part of the growth strategy to diversify our product portfolio and in response to the rapid decline of the PC markets, we have been developing new technologies and products designed to penetrate into other markets and applications, including

merchant power supplies, flat panel TVs, smart phones, tablets, gaming consoles, lighting, datacom, telecommunications, home appliances and industrial motor controls. However, there is no guarantee that these diversification efforts will be successful. As a new entrant to some of these markets, we may face intense competition from existing and more established providers and encounter other unexpected difficulties, any of which may hinder or delay our efforts to achieve success. In addition, our new products may have long design and sales cycles, therefore if our diversification efforts fail to keep pace with the declining PC markets, we may not be able to alleviate its negative impact on our results of operations.

Our diversification into different market segments may place a significant strain on our management, operational, financial and other resources. To manage this diversification effectively, we will need to take various actions, including:

- enhancing management information systems, including forecasting procedures;
- further developing our operating, administrative, financial and accounting systems and controls;
- managing our working capital and sources of financing;
- maintaining close coordination among our engineering, accounting, finance, marketing, sales and operations organizations;
- retaining, training and managing our employee base;
- enhancing human resource operations and improving employee hiring and training programs;
- realigning our business structure to more effectively allocate and utilize our internal resources;
- improving and sustaining our supply chain capability; and
- managing both our direct and distribution sales channels in a cost-efficient and competitive manner.

Our failure to execute any of the above actions successfully or timely may have an adverse effect on our business and financial results.

Our operating results may fluctuate from period to period due to many factors, which may make it difficult to predict our future performance.

Our periodic operating results may fluctuate as a result of a number of factors, many of which are beyond our control. These factors include, among others:

- a deterioration in general demand for electronic products, particularly the PC market, as a result of global or regional financial crises and associated macro-economic slowdowns, and/or the cyclical nature of the semiconductor industry;
- a deterioration in business conditions at our distributors and /or end customers;
- adverse general economic conditions in the countries where our products are sold or used;
- the emergence and growth of markets for products we are currently developing;
- our ability to successfully develop, introduce and sell new or enhanced products in a timely manner and the rate at which our new products replace declining orders for our older products;
- the anticipation, announcement or introduction of new or enhanced products by us or our competitors;
- changes in the selling prices of our products and in the relative mix in the unit shipments of our products, which have different average selling prices and profit margins;
- the amount and timing of operating costs and capital expenditures, including expenses related to the maintenance and expansion of our business operations and infrastructure;
- the announcement of significant acquisitions, disposition or partnership arrangements;
- changes and delays in our JV Transaction;
- the ramp-up progress and operation of the JV Company;
- changes in the utilization of our in-house manufacturing capacity;
- supply and demand dynamics and the resulting price pressure on the products we sell;
- the unpredictable volume and timing of orders, deferrals, cancellations and reductions for our products, which may depend on factors such as our end customers' sales outlook, purchasing patterns and inventory adjustments based on general economic conditions or other factors;

- changes in laws and regulations affecting our business operations;
- changes in costs associated with manufacturing of our products, including pricing of wafer, raw materials and assembly services;
- announcement of significant share repurchase programs;
- our concentration of sales in consumer applications and changes in consumer purchasing patterns and confidence; and
- the adoption of new industry standards or changes in our regulatory environment.

Any one or a combination of the above factors and other risk factors described in this section may cause our operating results to fluctuate from period to period, making it difficult to predict our future performance. Therefore, comparing our operating results on a period-to-period basis may not be meaningful, and you should not rely on our past results as an indication of our future performance.

Our revenue may fluctuate significantly from period to period due to ordering patterns from our distributors and seasonality.

Demand for our products from our end customers fluctuates depending on their sales outlooks and market and economic conditions. Accordingly, our distributors place purchase orders with us based on their forecasts of end customer demand. Because these forecasts may not be accurate, channel inventory held at our distributors may fluctuate significantly due to the difference between the forecasts and actual demand. As a result, distributors adjust their purchase orders placed with us in response to changing channel inventory levels, as well as their assessment of the latest market demand trends. A significant decrease in our distributors' channel inventory in one period may lead to a significant rebuilding of channel inventory in subsequent periods, or vice versa, which may cause our quarterly revenue and operating results to fluctuate significantly.

In addition, because our power semiconductors are used in consumer electronics products, our revenue is subject to seasonality. Our sales seasonality is affected by a number of factors, including global and regional economic conditions as well as the PC market conditions, revenue generated from new products, changes in distributor ordering patterns in response to channel inventory adjustments and end customer demand for our products and fluctuations in consumer purchase patterns prior to major holiday seasons. In recent year, broad fluctuations in the semiconductor markets and the global economic conditions, in particular the decline of the PC market conditions, have had a more significant impact on our results of operations, than seasonality, and have made it difficult to assess the impact of seasonal factors on our business.

If we are unable to introduce or develop new and enhanced products that meet or are compatible with our customer's product requirements in a timely manner, it may harm our business, financial position and operating results.

Our success depends upon our ability to develop and introduce new and enhanced products that meet or are compatible with our customer's specifications, performance standards and other product requirements in a timely manner. The development of new and enhanced products involves highly complex processes, and at times we have experienced delays in the introduction of new products. Successful product development and introduction of new products depends on a number of factors, including the accurate product specification; timely completion of design; achievement of manufacturing yields; timely response to changes in customers' product requirements; quality and cost-effective production; and effective marketing. Since many of our products are designed for specific applications, we must frequently develop new and enhanced products jointly with our customers. In the past, we have encountered product compatibility issues with a major OEM that has negatively impacted our financial results, and although we have resolved fully such issues with the OEM, there is no guarantee that the same compatibility issues will not occur in the future with other OEMS. If we are unable to develop or acquire new products that meet or are compatible with our customer's specification and other product requirements in a timely manner, we may lose revenue or market shares with our customers, which could have a material adverse effect on our business, financial position and operating results.

We may not win sufficient designs, or our design wins may not generate sufficient revenue for us to maintain or expand our business.

We invest significant resources to compete with other power semiconductor companies to obtain winning competitive bids for our products in selection processes, known as "design wins." Our effort to obtain design wins may detract us from or delay the completion of other important development projects, impair our relationships with existing end customers and negatively impact sales of products under development. In addition, we cannot be assured that these efforts would result in a design win, that our product would be incorporated into an end customer's initial product design, or that any such design win would lead to production orders and generate sufficient revenue. Furthermore, even after we have qualified our products with a customer and made sales, subsequent changes to our products, manufacturing processes or suppliers may require a new

qualification process, which may result in delay and excess inventory. If we cannot achieve sufficient design wins in the future, or if we fail to generate production orders following design wins, our ability to grow our business and improve our financial results will be harmed.

Our success depends upon the ability of our OEM end customers to successfully sell products incorporating our products.

The consumer end markets, in particular the PC market, in which our products are used are highly competitive. Our OEM end customers may not successfully sell their products for a variety of reasons, including:

- general global and regional economic conditions;
- late introduction or lack of market acceptance of their products;
- lack of competitive pricing;
- shortage of component supplies;
- excess inventory in the sales channels into which our end customers sell their products;
- changes in the supply chain; and
- changes as a result of regulatory restrictions applicable to China-exported products.

Our success depends on the ability of our OEM end customers to sell their products incorporating our products. In addition, we have expanded our business model to include more OEMs in our direct customer base. The failure of our OEM end customers to achieve or maintain commercial success for any reason could harm our business, results of operations, and financial condition and prospects.

The operation of our Oregon fab subjects us to additional risks and the need for additional capital expenditures which may negatively impact our results of operations.

The operation of the Oregon fab requires significant fixed manufacturing cost. In order to manage the capacity of the wafer fabrication facility efficiently, we must perform a forecast of long-term market demand and general economic conditions for our products. Because market conditions may vary significantly and unexpectedly, our forecast may change significantly at any time, and we may not be able to make timely adjustments to our fabrication capacity in response to these changes. During periods of continued decline in market demand, in particular the decline of the PC market, we may not be able to absorb the excess inventory and additional costs associated with operating the facility at higher capacity, which may adversely affect our operating results. Similarly, during periods of unexpected increase in customer demand, we may not be able to ramp up production quickly to meet these demands, which may lead to the loss of significant revenue opportunities. The manufacturing processes of a fabrication facility are complex and subject to interruptions. We may experience production difficulties, including lower manufacturing yields or products that do not meet our or our customers' specifications, and problems in ramping production and installing new equipment. These difficulties could result in delivery delays, quality problems and lost revenue opportunities. Any significant quality problems could also damage our reputation with our customers and distract us from the development of new and enhanced product which may have a significant negative impact on our financial results.

In addition, semiconductor manufacturing has historically required an upgrading of process technology from time to time to remain competitive, as new and enhanced semiconductor processes are developed which permit smaller, more efficient and more powerful semiconductor devices. Accordingly, we may have to incur substantial capital expenditures and install significant production capacity at our in-house fabrication facility to support new technologies and increased production volume, which may cause delay in our ability to deliver new products or negatively impact our results of operations.

Defects and poor performance in our products could result in loss of customers, decreased revenue, unexpected expenses and loss of market share, and we may face warranty and product liability claims arising from defective products.

Our products are complex and must meet stringent quality requirements. Products as complex as ours may contain undetected errors or defects, especially when first introduced or when new versions are released. Errors, defects or poor performance can arise due to design flaws, defects in raw materials or components or manufacturing anomalies, which can affect both the quality and the yield of the product. It can also be potentially dangerous as defective power components, or improper use of our products by customers, may lead to power overloads, which could result in explosion or fire. As our products become more complex, we face higher risk of undetected defects, because our testing protocols may not be able to fully test the products under all possible operating conditions. In the past, we have experienced defects in our products and these products were returned to us and subsequently scrapped or sold at a discount. Any actual or perceived errors, defects or

poor performance in our products could result in the replacement or recall of our products, shipment delays, rejection of our products, damage to our reputation, lost revenue, diversion of our engineering personnel from our product development efforts in order to address or remedy any defects and increases in customer service and support costs, all of which could have a material adverse effect on our business and operations.

Furthermore, as our products are typically sold at prices much lower than the cost of the equipment or other devices incorporating our products, any defective, inefficient or poorly performing products, or improper use by customers of power components, may give rise to warranty and product liability claims against us that exceed any revenue or profit we receive from the affected products. Historically, we have received claims from our customers for charges such as their labor and other costs replacing defective parts, their lost profit, and/or penalty. We could incur significant costs and liabilities if we are sued and if damages are awarded against us. There is no guarantee that our insurance policies will be available or adequate to protect against such claims. Costs or payments we may make in connection with warranty and product liability claims or product recalls may adversely affect our financial condition and results of operations.

If we do not forecast demand for our products accurately, we may experience product shortages, delays in product shipment, excess product inventory, or difficulties in planning expenses, which will adversely affect our business and financial condition.

We manufacture our products according to our estimates of customer demand. This process requires us to make numerous forecasts and assumptions relating to the demand of our end customers, channel inventory, and general market conditions. Because we sell most of our products to distributors, who in turn sell to our end customers, we have limited visibility as to end customer demand. Furthermore, we do not have long-term purchase commitments from our distributors or end customers, and our sales are generally made by purchase orders that may be cancelled, changed or deferred without notice to us or penalty. As a result, it is difficult to forecast future customer demand to plan our operations.

The utilization of our manufacturing facilities and the provisions for inventory write-downs are important factors in our profitability. If we overestimate demand for our products, or if purchase orders are canceled or shipments delayed, we may have excess inventory, which may result in adjustments to our production plans. These adjustments to our productions may affect the utilization of our own wafer fabrication and packaging facilities. If we cannot sell certain portion of the excess inventory, it will affect our provisions for inventory write-downs. Our inventory write-down provisions are subject to adjustment based on events that may not be known at the time the provisions are made, and such adjustments could be material and impact our financial results negatively.

If we underestimate demand, we may not have sufficient inventory to meet end-customer demand, and we may lose market share and damage relationships with our distributors and end customers and we may have to forego potential revenue opportunities. Obtaining additional supply in the face of product shortages may be costly or impossible, particularly in the short term, which could prevent us from fulfilling orders in a timely manner or at all.

In addition, we plan our operating expenses, including research and development expenses, hiring needs and inventory investments, based in part on our estimates of customer demand and future revenue. If customer demand or revenue for a particular period is lower than we expect, we may not be able to proportionately reduce our fixed operating expenses for that period, which would harm our operating results.

We face intense competition and may not be able to compete effectively which could reduce our revenue and market share.

The power semiconductor industry is highly competitive and fragmented. If we do not compete successfully against current or potential competitors, our market share and revenue may decline. Our main competitors are primarily headquartered in the United States, Japan, Taiwan and Europe. Our major competitors for our power discretes include Infineon Technologies AG, MagnaChip Semiconductor Corporation, ON Semiconductor Corp., STMicroelectronics N.V., Toshiba Corporation, Diodes Incorporated and Vishay Intertechnology, Inc. Our major competitors for our power ICs include Global Mixed-mode Technology Inc., Monolithic Power Systems, Inc., Richtek Technology Corp., Semtech Corporation and Texas Instruments Inc.

We expect to face competition in the future from our competitors, other manufacturers, designers of semiconductors and start-up semiconductor design companies. Many of our competitors have competitive advantages over us, including:

- significantly greater financial, technical, research and development, sales and marketing and other resources, enabling them to invest substantially more resources than us to respond to the adoption of new or emerging technologies or changes in customer requirements;
- greater brand recognition and longer operating histories;

- larger customer bases and longer, more established relationships with distributors or existing or potential end customers, which may provide them with greater reliability and information regarding future trends and requirements that may not be available to us;
- the ability to provide greater incentives to end customers through rebates, and marketing development funds or similar programs;
- more product lines, enabling them to bundle their products to offer a broader product portfolio or to integrate power management functionality into other products that we do not sell; and
- captive manufacturing facilities, providing them with guaranteed access to manufacturing facilities in times of global semiconductor shortages.

In addition, the semiconductor industry has experienced increased consolidation over the past several years that may adversely affect our competitive position. For example, On Semiconductor Corporation acquired Fairchild Semiconductor International Inc. in September 2016; Avago Technologies Limited (now Broadcom Limited (“Broadcom”)) acquired Broadcom Corporation in February 2016 and LSI Corporation in May 2014; Intel acquired Altera Corporation in December 2015; and NXP Semiconductors acquired Freescale Semiconductor, Ltd. in December 2015. Consolidation among our competitors could lead to a less favorable competitive landscape, capabilities and market share, which could harm our business and results of operations.

If we are unable to compete effectively for any of the foregoing or other reasons, our business, results of operations, and financial condition and prospects will be harmed.

We depend partly on third-party semiconductor foundries to manufacture our products and implement our fabrication processes, and any failure to maintain sufficient foundry capacity and control the cost of production could significantly delay our ability to ship our products, damage our relationships with customers, reduce our sales and increase expenses.

The allocation of our wafer production between in-house facility and third-party foundries may fluctuate from time to time. We expect to continue to rely in part on third party foundries to meet our wafer requirements. Although we use several independent foundries, our primary third-party foundry is HHGrace, which manufactured 14.1%, 15.4% and 18.6% of the wafers used in our products for the fiscal years ended June 30, 2019, 2018 and 2017, respectively.

We place our purchase orders with foundries based on sales forecasts for our products. If any third-party foundry does not provide competitive pricing or is not able to meet our required capacity for any reason, we may not be able to obtain the required capacity to manufacture our products timely or efficiently. From time to time, third party suppliers may extend lead-times, limit supplies or increase prices due to capacity constraints or other factors, and we may experience a shortage of capacity on an industry-wide basis that may last for an extended period of time. There are no assurances of that we will be able to maintain sufficient capacity to meet the full demand from our customers, and failure to do so will adversely affect our results of operations. If we cannot maintain sufficient capacity or control pricing with our existing third-party foundries, we may need to increase our own manufacturing capacity, and there is no assurance that we can ramp up the production of the Oregon fab timely to meet the increased demand. If not, we may need to seek alternative foundries, which may not be available on commercially reasonable terms, or at all. In addition, the process for qualifying a new foundry is time consuming, difficult and may not be successful, particularly if we cannot integrate our proprietary process technology with the process used by the new foundry. Using a foundry with which we have no established relationship could expose us to potentially unfavorable pricing, unsatisfactory quality or insufficient capacity allocation.

In addition, even though we have been transferring more new product developments to our Oregon fab and we expect to increase gradually the utilization of capacity at our JV Company as it ramps up production, we still rely on third-party foundries to effectively implement certain of our proprietary technology and processes and also require their cooperation in developing new fabrication processes. Any failure to do so may impair our ability to introduce new products and on time delivery of wafers for our existing products. In order to maintain our profit margins and to meet our customer demand, we need to achieve acceptable production yields and timely delivery of silicon wafers. As is common in the semiconductor industry, we have experienced, and may experience from time to time, difficulties in achieving acceptable production yields and timely delivery from third-party foundry vendors. Minute impurities in a silicon wafer can cause a substantial number of wafers to be rejected or cause numerous die on a wafer to be defective. Low yields often occur during the production of new products, the migration of processes to smaller geometries or the installation and start up of new process technologies.

We face a number of other significant risks associated with outsourcing fabrication, including:

- limited control over delivery schedules, quality assurance and control and production costs;

- discretion of foundries to reduce deliveries to us on short notice, allocate capacity to other customers that may be larger or have long-term customer or preferential arrangements with foundries that we use;
- unavailability of, or potential delays in obtaining access to, key process technologies;
- limited warranties on wafers or products supplied to us;
- damage to equipment and facilities, power outages, equipment or materials shortages that could limit manufacturing yields and capacity at the foundries;
- potential unauthorized disclosure or misappropriation of intellectual property, including use of our technology by the foundries to make products for our competitors;
- financial difficulties and insolvency of foundries; and
- acquisition of foundries by third parties.

Any of the foregoing risks could delay shipment of our products, result in higher expenses and reduced revenue, damage our relationships with customers and otherwise adversely affect our business and operating results.

Our operation of two wholly-owned packaging and testing facilities are subject to risks that could adversely affect our business and financial results.

We have two wholly-owned packaging and testing facilities located in Shanghai, China that handle most of our packaging and testing requirements. The operation of high-volume packaging and testing facilities and implementation of our advanced packaging technology are complex and demand a high degree of precision and may require modification to improve yields and product performance. We have committed substantial resources to ensure that our packaging and testing facilities operate efficiently and successfully, including the acquisition of equipment and raw materials, and training and management of a large number of technical personnel and employees. Due to the fixed costs associated with operating our own packaging and testing facilities, if we are unable to utilize our in-house facilities at a desirable level of production, our gross margin and results of operations may be adversely affected. For example, a significant decline in our market share or sales orders may negatively impact our factory utilization and reduce our ability to achieve profitability.

In addition, the operation of our packaging and testing facilities is subject to a number of risks, including the following:

- unavailability of equipment, whether new or previously owned, at acceptable terms and prices;
- facility equipment failure, power outages or other disruptions;
- shortage of raw materials, including packaging substrates, copper, gold and molding compound;
- failure to maintain quality assurance and remedy defects and impurities;
- changes in the packaging requirements of customers; and
- our limited experience in operating a high-volume packaging and testing facility.

Any of the foregoing risks could adversely affect our capacity to package and test our products, which could delay shipment of our products, result in higher expenses, reduce revenue, damage our relationships with customers and otherwise adversely affect our business, results of operations, financial condition and prospects.

Our reliance on distributors to sell a substantial portion of our products subjects us to a number of risks.

We sell a substantial portion of our products to distributors, who in turn sell to our end customers. Our distributors typically offer power semiconductor products from several different companies, including our direct competitors. The distributors assume collection risk and provide logistical services to end customers, including stocking our products. Two distributors, WPG and Promate, collectively accounted for 65.2%, 63.5% and 62.7% of our revenue for the fiscal years ended June 30, 2019, 2018 and 2017, respectively. Our agreements with Promate and WPG were renewed in July 2017 and are automatically renewed for each one-year period continuously unless terminated earlier pursuant to the provisions in the agreements. We believe that our success will continue to depend upon these distributors. Our reliance on distributors subjects us to a number of risks, including:

- write-downs in inventories associated with stock rotation rights and increases in provisions for price adjustments granted to certain distributors;
- potential reduction or discontinuation of sales of our products by distributors;
- failure to devote resources necessary to sell our products at the prices, in the volumes and within the time frames that we expect;

- focusing their sales efforts on products of our competitors;
- dependence upon the continued viability and financial resources of these distributors, some of which are small organizations with limited working capital and all of which depend on general economic conditions and conditions within the semiconductor industry;
- dependence on the timeliness and accuracy of shipment forecasts and resale reports from our distributors;
- management of relationships with distributors, which can deteriorate as a result of conflicts with efforts to sell directly to our end customers; and
- our agreements with distributors which are generally terminable by either party on short notice.

If any significant distributor becomes unable or unwilling to promote and sell our products, or if we are not able to renew our contracts with the distributors on acceptable terms, we may not be able to find a replacement distributor on reasonable terms or at all and our business could be harmed.

We have made and may continue to make strategic acquisitions of other companies, assets or businesses and these acquisitions introduce significant risks and uncertainties, including risks related to integrating the acquired assets or businesses, incurring additional debt, assuming contingent liabilities or diluting our existing shareholders.

In order to position ourselves to take advantage of growth opportunities, we have made, and may continue to make, strategic acquisitions, mergers and alliances that involve significant risks and uncertainties. Successful acquisitions and alliances in the semiconductor industry are difficult to accomplish because they require, among other things, efficient integration and aligning of product offerings and manufacturing operations and coordination of sales and marketing and research and development efforts. The difficulties of integration and alignment may be increased by the necessity of coordinating geographically separated organizations, the complexity of the technologies being integrated and aligned and the necessity of integrating personnel with disparate business backgrounds and combining different corporate cultures. Furthermore, there is no guarantee that we will be able to identify a viable target for strategic acquisition, and we may incur significant costs and resources in such effort that may not result in a successful acquisition.

In addition, we may also issue equity securities to pay for future acquisitions or alliances, which could be dilutive to existing shareholders. We may also incur debt or assume contingent liabilities in connection with acquisitions and alliances, which could impose restrictions on our business operations and harm our operating results.

If we are unable to obtain raw materials in a timely manner or if the price of raw materials increases significantly, production time and product costs could increase, which may adversely affect our business.

Our fabrication and packaging processes depend on raw materials such as silicon wafers, gold, copper, molding compound, petroleum and plastic materials and various chemicals and gases. From time to time, suppliers may extend lead times, limit supplies or increase prices due to capacity constraints or other factors. If the prices of these raw materials rise significantly, we may be unable to pass on the increased cost to our customers. Our results of operations could be adversely affected if we are unable to obtain adequate supplies of raw materials in a timely manner or at reasonable price. In addition, from time to time, we may need to reject raw materials because they do not meet our specifications or the sourcing of such materials do not comply with our conflict mineral policies, resulting in potential delays or declines in output. Furthermore, problems with our raw materials may give rise to compatibility or performance issues in our products, which could lead to an increase in customer returns or product warranty claims. Errors or defects may arise from raw materials supplied by third parties that are beyond our detection or control, which could lead to additional customer returns or product warranty claims that may adversely affect our business and results of operations.

Our operations may be delayed or interrupted and our business may be adversely affected as a result of our efforts to comply with environmental regulations applicable to our in-house wafer manufacturing, packaging and testing facility.

Our in-house manufacturing operations, including wafer manufacturing, packaging and testing, are subject to a variety of environmental regulations relating to the use, handling, discharge and disposal of toxic or otherwise hazardous materials. See “Item 1. Business - Environmental matters.” Compliance with environmental regulations could require us to acquire expensive pollution control equipment or to incur other substantial expenses or investigate and remediate contamination at our current facilities. Any failure, or any claim that we have failed, to comply with these regulations could cause delays in our production and capacity expansion and affect our public image, either of which could harm our business. In addition, any failure to comply with these regulations could subject us to substantial fines or other liabilities, result in the suspension of our operating permit, or require us to terminate or adversely modify our in-house manufacturing operations.

We may not be able to accurately estimate provisions at fiscal period end for price adjustment and stock rotation rights under our agreements with distributors, and our failure to do so may impact our operating results.

We sell a majority of our products to distributors under arrangements allowing price adjustments and returns under stock rotation programs, subject to certain limitations. As a result, we are required to estimate allowances for price adjustments and stock rotation for our products as inventory at distributors at each reporting period end. Our ability to reliably estimate these allowances enables us to recognize revenue upon delivery of goods to distributors instead of upon resale of goods by distributors to end customers.

We estimate the allowance for price adjustment based on factors such as distributor inventory levels, pre-approved future distributor selling prices, distributor margins and demand for our products. Our estimated allowances for price adjustments, which we offset against accounts receivable from distributors, were \$24.1 million and 18.9 million at June 30, 2019 and 2018, respectively.

Our accruals for stock rotation are estimated based on historical returns and individual distributor agreement, and stock rotation rights, which are recorded as accrued liabilities on our consolidated balance sheets, are contractually capped based on the terms of each individual distributor agreement. Our estimated liabilities for stock rotation at June 30, 2019 and 2018 were \$1.9 million and \$1.8 million, respectively.

Our estimates for these allowances and accruals may be inaccurate. If we subsequently determine that any allowance and accrual based on our estimates is insufficient, we may be required to increase the size of our allowances and accrual in future periods, which would adversely affect our results of operations and financial condition.

We depend on the continuing services of our senior management team and other key personnel, and if we lose a member of our senior management or are unable to successfully retain, recruit and train key personnel, our ability to develop and market our products could be harmed.

Our success depends upon the continuing services of members of our senior management team and various engineering and other technical personnel. In particular, our engineers and other sales and technical personnel are critical to our future technological and product innovations. Our industry is characterized by high demand and intense competition for talent and the pool of qualified candidates is limited. We have entered into employment agreements with certain senior executives, but we do not have employment agreements with most of our employees. Many of these employees could leave our company with little or no prior notice and would be free to work for a competitor. If one or more of our senior executives or other key personnel are unable or unwilling to continue in their present positions, we may not be able to replace them easily or at all and other senior management may be required to divert attention from other aspects of our business. In addition, we do not have “key person” life insurance policies covering any member of our management team or other key personnel. The loss of any of these individuals or our inability to attract or retain qualified personnel, including engineers and others, could adversely affect our product introductions, overall business growth prospects, results of operations and financial condition.

Failure to protect our patents and our other proprietary information could harm our business and competitive position.

Our success depends, in part, on our ability to protect our intellectual property. We rely on a combination of patent, copyright (including mask work protection), trademark and trade secret laws, as well as nondisclosure agreements, license agreements and other methods to protect our intellectual property rights, which may not be sufficient to protect our intellectual property. As of June 30, 2019, we owned 781 issued U.S. patents expiring between 2022 and 2038 and had 91 pending patent applications with the United States Patent and Trademark Office. In addition, we own additional patents and have filed patent applications in several jurisdictions outside of the U.S, including China, Taiwan, Japan and Korea.

Our patents and patent applications may not provide meaningful protection from our competitors, and there is no guarantee that patents will be issued from our patent applications. The status of any patent or patent application involves complex legal and factual determinations and the breadth of a claim is uncertain. In addition, our efforts to protect our intellectual property may not succeed due to difficulties and risks associated with:

- policing any unauthorized use of or misappropriation of our intellectual property, which is often difficult and costly and could enable third parties to benefit from our technologies without paying us;
- others independently developing similar proprietary information and techniques, gaining authorized or unauthorized access to our intellectual property rights, disclosing such technology or designing around our patents;
- the possibility that any patent or registered trademark owned by us may not be enforceable or may be invalidated, circumvented or otherwise challenged in one or more countries and the rights granted there under may not provide competitive advantages to us;

- uncertainty as to whether patents will be issued from any of our pending or future patent applications with the scope of the claims sought by us, if at all; and
- intellectual property laws and confidentiality laws may not adequately protect our intellectual property rights, including, for example, in China where enforcement of China intellectual property-related laws have historically been less effective, primarily because of difficulties in enforcement and low damage awards.

We also rely on customary contractual protection with our customers, suppliers, distributors, employees and consultants, and we implement security measures to protect our trade secrets. We cannot assure you that these contractual protections and security measures will not be breached, that we will have adequate remedies for any such breach or that our suppliers, employees, distributors or consultants will not assert rights to intellectual property arising out of such contracts.

In addition, we have a number of third-party patent and intellectual property license agreements, one of which requires us to make ongoing royalty payments. In the future, we may need to obtain additional licenses, renew existing license agreements or otherwise replace existing technology. We are unable to predict whether these license agreements can be obtained or renewed or the technology can be replaced on acceptable terms, or at all.

Intellectual property disputes could result in lengthy and costly arbitration, litigation or licensing expenses or prevent us from selling our products.

As is typical in the semiconductor industry, we or our customers may receive claims of infringement from time to time or otherwise become aware of potentially relevant patents or other intellectual property rights held by other parties that may cover some of our technology, products and services or those of our end customers. The semiconductor industry is characterized by vigorous protection and pursuit of intellectual property rights which has resulted in protracted and expensive arbitration and litigation for many companies. Patent litigation has increased in recent years due to increased assertions made by intellectual property licensing entities or non-practicing entities and increasing competition and overlap of product functionality in our markets.

Any litigation or arbitration regarding patents or other intellectual property could be costly and time consuming and could divert our management and key personnel from our business operations. We have in the past and may from time to time in the future become involved in litigation that requires our management to commit significant resources and time. In addition, as part of our strategy to diversify our serviceable markets, we launched several key product families and technologies to enable high efficiency power conversion solutions and we plan to develop and commercialize new products in other power semiconductor markets. Our entry into the commercial markets for high-voltage power semiconductors and other markets as a result of our diversification strategy may subject us to additional and increased risk of disputes or litigation relating to these products.

Because of the complexity of the technology involved and the uncertainty of litigation generally, any intellectual property arbitration or litigation involves significant risks. Any claim of intellectual property infringement against us may require us to:

- incur substantial legal and personnel expenses to defend the claims or to negotiate for a settlement of claims;
- pay substantial damages or settlement to the party claiming infringement;
- refrain from further development or sale of our products;
- attempt to develop non-infringing technology, which may be expensive and time consuming, if possible at all;
- enter into costly royalty or license agreements that might not be available on commercially reasonable terms or at all;
- cross-license our technology with a competitor to resolve an infringement claim, which could weaken our ability to compete with that competitor; and
- indemnify our distributors, end customers, licensees and others from the costs of and damages of infringement claims by our distributors, end customers, licensees and others, which could result in substantial expenses for us and damage our business relationships with them.

Any intellectual property claim or litigation could harm our business, results of operations, financial condition and prospects.

Global or regional economic, political and social conditions could adversely affect our business and operating results.

External factors such as potential terrorist attacks, acts of war, financial crises, such as the global or regional economic recession, or geopolitical and social turmoil in those parts of the world that serve as markets for our products could have

significant adverse effect on our business and operating results in ways that cannot presently be predicted. Any future economic downturn or recession in the global economy in general and, in particular, on the economies in China, Taiwan and other countries where we market and sell our products, will have an adverse effect on our results of operations.

Our business operations could be significantly harmed by natural disasters or global epidemics.

We have research and development facilities located in Taiwan and the Silicon Valley in Northern California. Historically, these regions have been vulnerable to natural disasters and other risks, such as earthquakes, fires and floods, which may disrupt the local economy and pose physical risks to our property. We also have sales offices located in Taiwan and Japan where similar natural disasters and other risks may disrupt the local economy and pose physical risks to our operations. We are not currently covered by insurance against business disruption caused by earthquakes. In addition, we currently do not have redundant, multiple site capacity in the event of a natural disaster or other catastrophic event. In the event of such an occurrence, our business would suffer.

Our business could be adversely affected by natural disasters such as epidemics, outbreaks or other health crisis. An outbreak of avian flu or H1N1 flu in the human population, or another similar health crisis, could adversely affect the economies and financial markets of many countries, particularly in Asia. Moreover, any related disruptions to transportation or the free movement of persons could hamper our operations and force us to close our offices temporarily.

The occurrence of any of the foregoing or other natural or man-made disasters could cause damage or disruption to us, our employees, operations, distribution channels, markets and customers, which could result in significant delays in deliveries or substantial shortages of our products and adversely affect our business results of operations, financial condition or prospects.

Our insurance may not cover all losses, including losses resulting from business disruption or product liability claims.

We have limited product liability, business disruption or other business insurance coverage for our operations. In addition, we do not have any business insurance coverage for our operations to cover losses that may be caused by litigation or natural disasters. Any occurrence of uncovered loss could harm our business, results of operations, financial condition and prospects.

We may be adversely affected by any disruption in our information technology systems.

Our operations are dependent upon our information technology systems, which encompass all of our major business functions across offices internationally. We rely upon such information technology systems to manage and replenish inventory, complete and track customer orders, coordinate sales activities across all of our products and services, maintain vital data and information, perform financial and accounting tasks and manage and perform various administrative and human resources functions. A substantial disruption in our information technology systems for any extended time period (arising from, for example, system capacity limits from unexpected increases in our volume of business, outages or delays in our service) could result in delays in receiving inventory and supplies or filling customer orders and adversely affect our customer service and relationships. Our systems might be damaged or interrupted by natural or man-made events or by computer viruses, physical or electronic break-ins, cyber attacks and similar disruptions affecting the global Internet. There can be no assurance that such delays, problems, or costs will not have a material adverse effect on our cash flows, results of operations and financial condition.

Our international operations subject our company to risks not faced by companies without international operations.

We have adopted a global business model under which we maintain significant operations and facilities through our subsidiaries located in the U.S., China, Taiwan and Hong Kong. Our main research and development center is located in Silicon Valley, and our manufacturing and supply chain is located in China. We also have sales offices and customers throughout Asia, the U.S. and elsewhere in the world. Our international operations may subject us to the following risks:

- economic and political instability, including trade tension between the U.S. and China;
- costs and delays associated with transportations and communications;
- coordination of operations through multiple jurisdictions and time zones;
- fluctuations in foreign currency exchange rates;
- trade restrictions, changes in laws and regulations relating to, amongst other things, import and export tariffs, taxation, environmental regulations, land use rights and property; and

- the laws of, including tax laws, and the policies of the U.S. toward, countries in which we operate.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud.

Our management may conclude that our internal control over financial reporting is not effective. Moreover, even if our management concludes that our internal control over financial reporting is effective, our independent registered public accounting firm may decline to issue an opinion as to the effectiveness of our internal control over financial reporting, or may issue a report that is qualified or adverse. During the course of the initial evaluation of internal control over financial reporting, we or our independent registered public accounting firm may identify control deficiencies that we may not be able to remediate prior to the date of our first assessment of internal control over financial reporting. Our failure to achieve and maintain effective internal control over financial reporting could result in the loss of investor confidence in the reliability of our financial statements or prevent fraud, which in turn could harm our business and negatively impact the trading price of our shares.

We are subject to the risk of increased income taxes and changes in existing tax rules.

We conduct our business in multiple jurisdictions, including Hong Kong, Macau, the U.S., China, Taiwan, South Korea Japan and Germany. The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax laws and regulations in various taxing jurisdictions. Any of these jurisdictions may assert that we have unpaid taxes. Our effective tax rate was (9.4)%, 12.5% and 28.3% for the fiscal years ended June 30, 2019, 2018 and 2017, respectively. Any tax rate changes in the tax jurisdictions in which we operate could result in adjustments to our deferred tax assets, if applicable, which would affect our effective tax rate and results of operations. We base our tax position upon the anticipated nature and conduct of our business and upon our understanding of the tax laws of the various countries in which we have assets or conduct activities. However, our tax position is subject to review and possible challenge by tax authorities and to possible changes in law, which may have a retroactive effect. In particular, various proposals over the years have been made to change certain U.S. tax laws relating to foreign entities with U.S. connections. In addition, the U.S. government has proposed various other changes to the U.S. international tax system, certain of which could adversely impact foreign-based multinational corporate groups, and increased enforcement of U.S. international tax laws. It is possible that these or other changes in the U.S. tax laws, foreign tax laws, or proposed actions by international bodies such as the Organization of Economic Cooperation and Development (OECD) could significantly increase our U.S. or foreign income tax liability in the future.

In December 2017, the European Union (“EU”) identified certain jurisdictions (including Bermuda and Cayman Islands) which it considered had a tax system that facilitated offshore structuring by attracting profits without commensurate economic activity. In order to avoid EU “blacklisting”, both Bermuda and Cayman Islands introduced new legislation in December 2018, which came into force on January 1, 2019. These new laws require Bermuda and Cayman companies carrying on one or more “relevant activity” (including: banking, insurance, fund management, financing, leasing, headquarters, shipping, distribution and service center, intellectual property or holding company) to maintain a substantial economic presence in Bermuda and Cayman Islands in order to comply with the economic substance requirements. There is no experience yet as to how the Bermuda and Cayman Islands authorities will interpret and enforce these new rules and, accordingly, we are not able to predict their impact on our operations and net income. In addition, to the extent that we are required to maintain more of a presence in Bermuda or the Cayman Islands, such requirements will increase our costs either directly in those locations or indirectly as a result of increased costs related to moving our operations to other jurisdictions.

In addition, our subsidiaries provide products and services to, and may from time to time undertake certain significant transactions with, us and other subsidiaries in different jurisdictions. We have adopted transfer pricing arrangements for transactions among our subsidiaries. Related party transactions are generally subject to close review by tax authorities, including requirements that transactions be priced at arm’s length and be adequately documented. If any tax authorities were successful in challenging our transfer pricing policies or other tax judgments, our income tax expense may be adversely affected and we could also be subject to interest and penalty charges which may harm our business, financial condition and operating results.

Our debt agreements include financial covenants that may limit our ability to pursue business and financial opportunities and subject us to risk of default.

We have entered into debt agreements with certain financial institutions, which generally require us to maintain certain financial covenants that has the effect of limiting our ability to take certain actions, including actions to incur debt, pay dividends, repurchase stock, make certain investments and capital expenditures. These restrictions may limit our ability to pursue business and financial opportunities that are available or beneficial to us in response to changing and competitive

economic environment, which may have an adverse effect on our financial conditions. In addition, a breach of any of these financial covenants, if not waived by the lenders, could trigger an event of default under the debt agreements, which may result in the acceleration of our indebtedness or the loss of our collateral used to secure such indebtedness.

The imposition of U.S. corporate income tax on our Bermuda parent and non-U.S. subsidiaries could adversely affect our results of operations.

We believe that our Bermuda parent and non-U.S. subsidiaries each operate in a manner that they would not be subject to U.S. corporate income tax because they are not engaged in a trade or business in the United States. Nevertheless, there is a risk that the U.S. Internal Revenue Service may assert that our Bermuda parent and non-U.S. subsidiaries are engaged in a trade or business in the United States. If our Bermuda parent and non-U.S. subsidiaries were characterized as being so engaged, we would be subject to U.S. tax at regular corporate rates on our income that is effectively connected with U.S. trade or business, plus an additional 30% “branch profits” tax on the dividend equivalent amount, which is generally effectively connected income with certain adjustments, deemed withdrawn from the United States. Any such tax could materially and adversely affect our results of operations.

We may be classified as a passive foreign investment company, which could result in adverse U.S. federal income tax consequences for U.S. holders.

Based on the current and anticipated valuation of our assets and the composition of our income and assets, we do not expect to be considered a passive foreign investment company, or PFIC, for U.S. federal income tax purposes for the foreseeable future. However, we must make a separate determination for each taxable year as to whether we are a PFIC after the close of each taxable year and we cannot assure you that we will not be a PFIC for our 2019 taxable year or any future taxable year. Under current law, a non-U.S. corporation will be considered a PFIC for any taxable year if either (1) at least 75% of its gross income is passive income or (2) at least 50% of the value of its assets, generally based on an average of the quarterly values of the assets during a taxable year, is attributable to assets that produce or are held for the production of passive income. PFIC status depends on the composition of our assets and income and the value of our assets, including, among others, a pro rata portion of the income and assets of each subsidiary in which we own, directly or indirectly, at least 25% by value of the subsidiary's equity interests, from time to time. Because we currently hold and expect to continue to hold a substantial amount of cash or cash equivalents, and because the calculation of the value of our assets may be based in part on the value of our common shares, which may fluctuate considerably given that market prices of technology companies historically often have been volatile, we may be a PFIC for any taxable year. If we were treated as a PFIC for any taxable year during which a U.S. holder held common shares, certain adverse U.S. federal income tax consequences could apply for such U.S. holder.

Risks Related to Our Industry

The average selling prices of products in our markets have historically decreased rapidly and will likely do so in the future, which could harm our revenue and gross margins.

As is typical in the semiconductor industry, the average selling price of a particular product has historically declined significantly over the life of the product. In the past, we have reduced the average selling prices of our products in anticipation of future competitive pricing pressures, new product introductions by us or our competitors and other factors. We expect that we will have to similarly reduce prices in the future for older generations of products. Reductions in our average selling prices to one customer could also impact our average selling prices to all customers. A decline in average selling prices would harm our gross margins for a particular product. If not offset by sales of other products with higher gross margins, our overall gross margins may be adversely affected. Our business, results of operations, financial condition and prospects will suffer if we are unable to offset any reductions in our average selling prices by increasing our sales volumes, reducing our costs and developing new or enhanced products on a timely basis, with higher selling prices or gross margins.

We may be adversely affected by the cyclicality of the semiconductor industry.

Our industry is highly cyclical and is characterized by constant and rapid technological change such as the introduction of smart phones and tablets that contributed to the decline in the PC market, product obsolescence and price erosion, evolving standards, uncertain product life cycles and wide fluctuations in product supply and demand. The industry has, from time to time, experienced significant and sometimes prolonged, downturns, which were often connected with or in anticipation of, maturing product cycles and declines in general economic conditions. These downturns have been characterized by diminished product demand, production overcapacity, high inventory levels and accelerated erosion of average selling prices. Any future downturns, in particular the PC markets or in any other markets in which we sell our products, may reduce our

revenue and result in us having excess inventory. By contrast, any upturn in the semiconductor industry could result in increased competition for access to limited third-party foundry and packaging and testing capacity, which could prevent us from benefiting from such an upturn or reduce our profit margins.

Changes in industry standards, technology, customer requirements and government regulation could limit our ability to sell our products.

The semiconductor industry is characterized by changing demand for new and advanced functions, long design and sales cycles, rapid product obsolescence and price erosion, intense competition, evolving industry standards and wide fluctuations in product supply and demand. Changes in industry standards, or the development of new industry standards, or, when applicable, government approval or disapproval of industry standards may make our products obsolete or negate the cost advantages we believe we have in our products. We may be required to invest significant effort and to incur significant expense to redesign our products in order to address relevant standards, technological developments, customer requirements or regulations but may not have the financial resources to respond to these changes effectively or in a timely manner. Any inability to meet these standards, regulations and requirements could harm our business, results of operations, financial condition and prospects.

Risks Related to Doing Business in China

China's economic, political and social conditions, as well as government policies, could affect our business and growth.

Our financial results have been, and are expected to continue to be, affected by the economy in China. If China's economy is slowing down, it may negatively affect our business operation and financial results. The China economy differs from the economies of most developed countries in many respects, including:

- higher level of government involvement;
- early stage of development of a market-oriented economy;
- rapid growth rate;
- higher level of control over foreign currency exchange; and
- less efficient allocation of resources.

The Chinese economy has been transitioning from a planned economy to a more market-oriented economy. Although in recent years the China government has implemented measures emphasizing the utilization of market forces for economic reform, the reduction of state ownership of productive assets and the establishment of corporate governance in business enterprises, the China government continues to retain significant control over the business and productive assets in China. Any changes in China's government policy or China's political, economic and social conditions, or in relevant laws and regulations, may adversely affect our current or future business, results of operations or financial condition. These changes in government policy may be implemented through various means, including changes in laws and regulations, implementation of anti-inflationary measures, change of basic interest rate, changes in the tax rate or taxation system and the imposition of additional restrictions on currency conversion and imports. Furthermore, given China's largely export-driven economy, any changes in the economies of the China's principal trading partners and other export-oriented nations may adversely affect our business, results of operations, financial condition and prospects.

Our ability to successfully expand our business operations in China depends on a number of factors, including macroeconomic and other market conditions, and credit availability from lending institutions. In response to the recent global and Chinese economic recession, the China government has promulgated several measures aimed at expanding credit and stimulating economic growth. We cannot assure you that the various macroeconomic measures, monetary policies and economic stimulus package adopted by the China government to guide economic growth will be effective in maintaining or sustaining the growth rate of the Chinese economy. If measures adopted by the China government fail to achieve further growth in the Chinese economy, it may adversely affect our growth, business strategies and operating results. In addition, changes in political and social conditions of China may adversely affect our ability to conduct our business in the region. For example, geopolitical disputes and increased tensions between China and its neighboring countries in which we conduct business could make it more difficult for us coordinate and manage our international operations in such countries.

Changes in China's laws, legal protections or government policies on foreign investment in China may harm our business.

Our business and corporate transactions, including our operations through the JV Company, are subject to laws and regulations applicable to foreign investment in China as well as laws and regulations applicable to foreign-invested

enterprises. These laws and regulations frequently change, and their interpretation and enforcement involves uncertainties that could limit the legal protections available to us. Regulations and rules on foreign investments in China impose restrictions on the means that a foreign investor like us may apply to facilitate corporate transactions we may undertake. In addition, the Chinese legal system is based in part on government policies and internal rules, some of which are not published on a timely basis or at all, that may have a retroactive effect. As a result, we may not be aware of our violation of these policies and rules until sometime after the violation. If any of our past operations are deemed to be non-compliant with Chinese law, we may be subject to penalties and our business and operations may be adversely affected. For instance, under the catalogue for the Guidance of Foreign Investment Industries, some industries are categorized as sectors which are encouraged, restricted or prohibited for foreign investment. As the catalogue for the Guidance of Foreign Investment Industries is updated every few years, there can be no assurance that the China government will not change its policies in a manner that would render part or all of our business to fall within the restricted or prohibited categories. If we cannot obtain approval from relevant authorities to engage in businesses which become prohibited or restricted for foreign investors, we may be forced to sell or restructure a business which has become restricted or prohibited for foreign investment. Furthermore, the China government has broad discretion in dealing with violations of laws and regulations, including levying fines, revoking business and other licenses and requiring actions necessary for compliance. In particular, licenses and permits issued or granted to us by relevant governmental bodies may be revoked at a later time by higher regulatory bodies. If we are forced to adjust our corporate structure or business as a result of changes in government policy on foreign investment or changes in the interpretation and application of existing or new laws, our business, financial condition, results of operations and prospects may be harmed. Moreover, uncertainties in the Chinese legal system may impede our ability to enforce contracts with our business partners, customers and suppliers, or otherwise pursue claims in litigation to recover damages or loss of property, which could adversely affect our business and operations.

Substantial uncertainties exist with respect to the enactment timetable, interpretation and implementation of draft PRC Foreign Investment Law and how it may impact the viability of our current corporate structure, corporate governance and business operations.

On March 15, 2019, the National People's Congress of the PRC promulgated the Foreign Investment Law, which will take effect on January 1, 2020, and replace the existing laws regulating foreign investment in China, namely, the Sino-foreign Equity Joint Venture Enterprise Law, the Sino-foreign Cooperative Joint Venture Enterprise Law and the Wholly Foreign-invested Enterprise Law, together with their implementation rules and ancillary regulations. The Foreign Investment Law embodies a PRC regulatory trend to rationalize its foreign investment regulatory regime in line with prevailing international practice and the legislative efforts to unify the corporate legal requirements for both foreign and domestic investments. The Foreign Investment Law establishes the basic framework for the access, promotion, protection and administration of foreign investments in China in view of investment protection and fair competition. For example, treatment of foreign investors on a national level will be no less favorable than the treatment received by domestic investors unless such investments fall within a "negative list". On June 30, 2019, the National Development and Reform Commission and the Ministry of Commerce of the PRC published the Special Administrative Measures for Market Access of Foreign Investment (Negative List), which identifies specific sectors where foreign investors will be subject to special administrative measures.

Since the Foreign Investment Law was newly enacted, uncertainties still exist in relation to its interpretation and implementation. For example, the Foreign Investment Law provides that foreign invested enterprises established according to the existing laws regulating foreign investment may maintain their structure and corporate governance within a five-year transition period, which means that we may be required to adjust the structure and corporate governance of certain of our China subsidiaries in such transition period. Failure to take timely and appropriate measures to cope with any of these or similar regulatory compliance challenges could materially and adversely affect our current corporate structure, corporate governance and business operations.

In addition, under the newly enacted Foreign Investment Law, foreign investors or the foreign invested enterprise should report investment information on the principle of necessity. Any company found to be non-compliant with such investment information reporting obligation might be potentially subject to fines or administration liabilities.

Limitations on our ability to transfer funds to our China subsidiaries could adversely affect our ability to expand our operations, make investments that could benefit our businesses and otherwise fund and conduct our business.

The transfer of funds from us to our China subsidiaries, either as a shareholder loan or as an increase in registered capital, is subject to registration with or approval by the China's governmental authorities, including the State Administration of Foreign Exchange, or SAFE, or the relevant examination and approval authority. Our subsidiaries may also experience difficulties in converting our capital contributions made in foreign currencies into RMB due to changes in the China's foreign exchange control policies. Therefore, it may be difficult to change capital expenditure plans once the relevant funds have been

remitted from us to our China subsidiaries. These limitations and the difficulties our China subsidiaries may experience on the free flow of funds between us and our China subsidiaries could restrict our ability to act in response to changing market situations in a timely manner.

China's currency exchange control and government restrictions on investment repatriation may impact our ability to transfer funds outside of China.

A significant portion of our business is conducted in China where the currency is the Renminbi. Regulations in China permit foreign owned entities to freely convert the Renminbi into foreign currency for transactions that fall under the “current account,” which includes trade related receipts and payments, interest and dividends. Accordingly, our Chinese subsidiaries may use Renminbi to purchase foreign exchange for settlement of such “current account” transactions without pre-approval. However, pursuant to applicable regulations, foreign-invested enterprises in China may pay dividends only out of their accumulated profits, if any, determined in accordance with Chinese accounting standards and regulations. In calculating accumulated profits, foreign investment enterprises in China are required to allocate at least 10% of their accumulated profits each year, if any, to fund certain reserve funds, including mandated employee benefits funds, unless these reserves have reached 50% of the registered capital of the enterprises.

Other transactions that involve conversion of Renminbi into foreign currency are classified as “capital account” transactions; examples of “capital account” transactions include repatriations of investment by or loans to foreign owners, or direct equity investments in a foreign entity by a China domiciled entity. “Capital account” transactions require prior approval from China's State Administration of Foreign Exchange (SAFE) or its provincial branch to convert a remittance into a foreign currency, such as U.S. dollars, and transmit the foreign currency outside of China.

As a result of these and other restrictions under PRC laws and regulations, our China subsidiaries are restricted in their ability to transfer a portion of their net assets to the parent; such restricted portion amounted to approximately \$209.5 million, or 64.4% of our total consolidated net assets attribute to the Company as of June 30, 2019. We have no assurance that the relevant Chinese governmental authorities in the future will not limit further or eliminate the ability of our China subsidiaries to purchase foreign currencies and transfer such funds to us to meet our liquidity or other business needs. Any inability to access funds in China, if and when needed for use by the Company outside of China, could have a material and adverse effect on our liquidity and our business.

The M&A Rules and certain other PRC regulations establish complex procedures for some acquisitions of Chinese companies by foreign investors, which could make it more difficult for us to pursue growth through acquisitions in China.

The Regulations on Mergers and Acquisitions of Domestic Companies by Foreign Investors, or the M&A Rules, adopted by six PRC regulatory agencies in August 2006 and amended in 2009, and some other regulations and rules concerning mergers and acquisitions established additional procedures and requirements that could make merger and acquisition activities by foreign investors more time consuming and complex, including requirements in some instances that the MOC be notified in advance of any change-of-control transaction in which a foreign investor takes control of a PRC domestic enterprise. Moreover, the Anti-Monopoly Law requires that the MOC shall be notified in advance of any concentration of undertaking if certain thresholds are triggered. In addition, the security review rules issued by the MOC that became effective in September 2011 specify that mergers and acquisitions by foreign investors that raise “national defense and security” concerns and mergers and acquisitions through which foreign investors may acquire de facto control over domestic enterprises that raise “national security” concerns are subject to strict review by the MOC, and the rules prohibit any activities attempting to bypass a security review, including by structuring the transaction through a proxy or contractual control arrangement. In the future, we may grow our business by acquiring complementary businesses. Complying with the requirements of the above-mentioned regulations and other relevant rules to complete such transactions could be time consuming, and any required approval processes, including obtaining approval from the MOC or its local counterparts may delay or inhibit our ability to complete such transactions, which could affect our ability to expand our business or maintain our market share.

Our results of operations may be negatively impacted by fluctuations in foreign currency exchange rates between U.S. dollar and Chinese Yuan, or RMB.

While U.S. dollars is our main functional currency and our revenue and a significant portion of our operating expenses are denominated in U.S. dollars, we are required to maintain local currencies, primarily the RMB, in our cash balances in connection with the funding of our oversea operations. As a result, our costs and operating expenses may be exposed to adverse movements in foreign currency exchange rates between the U.S. dollar and RMB. We also do not utilize any financial instruments to hedge or reduce potential losses due to the fluctuation of foreign currency exchange rates. In general, any appreciation of U.S. dollars against a weaker RMB could reduce the value of our cash and cash equivalent balance, which could increase our operating expenses and negatively affect our cash flow, income and profitability. The value of RMB

against the U.S. dollars may fluctuate and is affected by many factors outside of our control, including changes in political and economic conditions, implementation of new monetary policies by the Chinese government and changes in banking regulations, and there is no guarantee that we will be able to mitigate or recoup any losses due to a significant fluctuation in the U.S. dollar/RMB exchange rates.

PRC labor laws may adversely affect our results of operations.

On June 29, 2007, the PRC government promulgated the Labor Contract Law of the PRC, effective on January 1, 2008, to govern the establishment of employment relationships between employers and employees, and the conclusion, performance, termination of and the amendment to employment contracts. The Labor Contract Law imposes greater liabilities on employers and significantly affects the cost of an employer's decision to reduce its workforce. Further, it requires that certain terminations be based upon seniority and not merit. In the event our subsidiaries decide to significantly change or decrease their workforce in China, the Labor Contract Law could adversely affect their ability to effect such changes in a manner that is most advantageous to our business or in a timely and cost-effective manner, thus materially and adversely affecting our financial condition and results of operations.

In recent years, compensation in various industries in China has increased and may continue to increase in the future. In order to attract and retain skilled personnel, we may need to increase the compensation of our employees. Compensation may, also, increase as inflationary pressure increases in China. In addition, under the Regulations on Paid Annual Leave for Employees, which became effective on January 1, 2008, employees who have served more than one year for a specific employer are entitled to a paid vacation ranging from 5 to 15 days, depending on length of service. Employees who waive such vacation time at the request of employers must be compensated for three times their normal salaries for each waived vacation day. This mandated paid-vacation regulation, coupled with the trend of increasing compensation, may result in increase in our employee-related costs and expenses and decrease in our profit margins.

Controversies affecting China's trade with the United States could harm our business.

Controversies between the United States and China may arise that threaten the trading relationship between the two countries. At various times during recent years, the United States and China have had disagreements over political and economic issues, including the recent imposition of tariffs by U.S. against goods imported from China. See risk factor on page 14 entitled "Possible new tariffs on imported goods from China could adversely affect our business operations" above. In addition, disagreements between the United States and China with respect to their political, military or economic policies toward Taiwan may contribute to further controversies. These controversies and trade frictions could have a material adverse effect on our business by, among other things, making it more difficult for us to coordinate our operations between the United States and China or causing a reduction in the demand for our products by customers in the United States or China.

Relations between Taiwan and China could negatively affect our business, financial condition and operating results and, therefore, the market value of our common shares.

Taiwan has a unique international political status. China does not recognize the sovereignty of Taiwan. Although significant economic and cultural relations have been established during recent years between Taiwan and China, relations have often been strained. A substantial number of our key customers and some of our essential sales and engineering personnel are located in Taiwan, and we have a large number of operational personnel and employees located in China. Therefore, factors affecting military, political or economic relationship between China and Taiwan could have an adverse effect on our business, financial condition and operating results.

Risks Related to Our Corporate Structure and Our Common Shares

Our share price may be volatile and you may be unable to sell your shares at or above the purchase price, if at all.

Limited trading volumes and liquidity of our common shares on the NASDAQ Global Select Market may limit the ability of shareholders to purchase or sell our common shares in the amounts and at the times they wish. In addition, the financial markets in the United States and other countries have experienced significant price and volume fluctuations, and market prices of technology companies have been and continue to be extremely volatile. The trading price of our common shares on The NASDAQ Global Select Market ranged from a low of \$8.36 to high of \$15.62 from July 1, 2018 to June 30, 2019. At July 31, 2019, the trading price of our common shares was \$10.15. Volatility in the price of our shares may be caused by factors outside our control and may be unrelated or disproportionate to our operating results.

The market price for our common shares may be volatile and subject to wide fluctuations in response to factors, including:

- actual or anticipated fluctuations in our operating results;
- general economic, industry, regional and global market conditions, including the economic conditions of specific market segments for our products, including the PC markets;
- our failure to meet analysts' expectations, including expectation regarding our revenue, gross margin and operating expenses;
- changes in financial estimates and outlook by securities research analysts;
- our ability to increase our gross margin;
- announcements by us or our competitors of new products, acquisitions, strategic partnerships, joint ventures or capital commitments;
- announcements of technological or competitive developments;
- announcement of acquisition, partnership and major corporate transactions;
- regulatory developments in our target markets affecting us, our customers or our competitors;
- our ability to enter into new market segments, gain market share, diversify our customer base and successfully secure manufacturing capacity;
- announcements regarding intellectual property disputes or litigation involving us or our competitors;
- changes in the estimation of the future size and growth rate of our markets;
- additions or departures of key personnel;
- repurchase of shares under our repurchase program;
- announcement of sales of our securities by us or by our major shareholders;
- general economic or political conditions in China and other countries in Asia; and
- other factors.

In the past, securities class action litigation has often been brought against a company following periods of volatility in such company's share price. This type of litigation could result in substantial costs and divert our management's attention and resources which could negatively impact our business and financial conditions.

If securities or industry analysts do not publish research or reports about our business, or if they adversely change their recommendations regarding our common shares or if our operating results do not meet their expectations, the trading price of our common shares could decline.

The market price of our common shares is influenced by the research and reports that industry or securities analysts publish about us or our business. There is no guarantee that these analysts will understand our business and results, or that their reports will be accurate or correctly predict our operating results or prospects. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause the market price of our common shares or its trading volume to decline. Moreover, if one or more of the analysts who cover our company downgrade our common shares or if our operating results or prospects do not meet their expectations, the market price of our common shares could decline significantly.

Anti-takeover provisions in our bye-laws could make an acquisition of us more difficult and may prevent attempts by our shareholders to replace or remove our current management.

Certain provisions in our bye-laws may delay or prevent an acquisition of us or a change in our management. In addition, by making it more difficult for shareholders to replace members of our board of directors, these provisions also may frustrate or prevent any attempts by our shareholders to replace or remove our current management because our board of directors is responsible for appointing the members of our management team. These provisions include:

- the ability of our board of directors to determine the rights, preferences and privileges of our preferred shares and to issue the preferred shares without shareholder approval;
- advance notice requirements for election to our board of directors and for proposing matters that can be acted upon at shareholder meetings; and

- the requirement to remove directors by a resolution passed by at least two-thirds of the votes cast by the shareholders having a right to attend and vote at the shareholder meeting.

These provisions could make it more difficult for a third-party to acquire us, even if the third-party's offer may be considered beneficial by many shareholders. As a result, shareholders may be limited in their ability to obtain a premium for their shares.

Insiders have substantial control over us, which could adversely affect the market price of our shares.

Our Chief Executive Officer, certain members of our management and directors, beneficially owned, in the aggregate, approximately 21.5% of our outstanding common shares as of June 30, 2019. As a result, these shareholders will be able to exert significant control over all matters requiring shareholder approval, including the election of directors and approval of significant corporate transactions, such as a merger, consolidation, takeover or other business combination involving us. This concentration of ownership may also discourage, delay or prevent a change in control of our company, which could deprive our shareholders of an opportunity to receive a premium for their shares as part of a sale of our company and may reduce the trading price of our shares. Furthermore, the interests of these insiders could conflict with the interests of our other shareholders and, accordingly, any of them may take actions that favor their own interests and which may not be in the best interests of our other shareholders. These actions may be taken even if they are opposed by our other shareholders.

We are a Bermuda company and the rights of shareholders under Bermuda law may be different from U.S. laws.

We are a Bermuda limited liability exempted company. As a result, the rights of holders of our common shares will be governed by Bermuda law and our memorandum of association and bye-laws. The rights of shareholders under Bermuda law may differ from the rights of shareholders of companies incorporated in other jurisdictions, including the U.S. For example, some of our directors are not residents of the United States, and a substantial portion of our assets are located outside the United States. As a result, it may be difficult for investors to effect service of process on those persons in the U.S. or to enforce in the U.S. judgments obtained in U.S. courts against us or those persons based on civil liability provisions of the U.S. securities laws. It is doubtful whether courts in Bermuda will enforce judgments obtained in other jurisdictions, including the U.S., against us or our directors or officers under the securities laws of those jurisdictions or entertain actions in Bermuda against us or our directors or officers under the securities laws of other jurisdictions.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

As of July 31, 2019, our primary U.S. facility, which houses our research and design function, as well as elements of marketing and administration, is located in Sunnyvale, California. We conduct our manufacturing, research and development, sales and marketing and administration in Asia and North America. We lease all properties used in our business except the wafer fabrication facility in Oregon acquired in January 2012 and wafer fabrication facility in Chongqing, China. The following table sets forth the location, size and primary use of our properties:

Location	Square Footage	Primary Use
475 Oakmead Parkway Sunnyvale, California, USA 94085	57,000	Research and development, marketing, sales and administration
3131 Northeast Brookwood Parkway Hillsboro, Oregon, USA 97124	245,000	Wafer fabrication facility
Suite160, Rialto I, 7500 Rialto Boulevard, Austin, Texas, USA 78735	5,142	Research and development
Unit 701 Tesbury Centre, 28 Queen's Road East, Wanchai, Hong Kong	1,188	Sales and distribution
Room 68, 27 Andar Centro Comercial Praia Grande no. 429 Avenida da Praia Grande, Macau	81	Manufacturing support
Building 8/9, No. 91, Lane 109, Rongkang Road, Songjiang District, Shanghai, China 201614	205,033	Packaging and testing, manufacturing support
Building B1, Dongkai Industrial Park, Songjiang Export Process Zone, Area B, Songjiang, Shanghai, China 201614	250,198	Packaging and testing, manufacturing support
Room 1002-1007, Building 1 Jiali BuYeCheng No. 218 Tianmu W. Road Zhabei District, Shanghai, China 200070	10,032	Marketing and field application engineering support
East 8F., Matshunichi Building, No.9996 Shennan Blvd, Shenzhen High-tech Park, Nanshan District, Shenzhen, China 518057	9,486	Marketing and field application engineering support
32F., Building No. 2, Century Center of Excellence, Longcheng Road, North District, Qingdao, China, 266032	1,504	Marketing and field application engineering support
No.288, Yuefu Road, Beibei District, Chongqing, China 400714	2,459,002	Wafer fabrication facility and assembly and testing facility (land size 2,459,002, phase 1 building size 1,002,240)
9F, No.292, Yangguang St., Neihu Dist., Taipei City 11491, Taiwan R.O.C.	17,642	Marketing and field application engineering support, research and development

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<u>Location</u>	<u>Square Footage</u>	<u>Primary Use</u>
7F, Unit 3 & 5, 16F, Unit 1, No.32, Gaotie 2nd Rd., Zhubei City, Hsinchu County 30274, Taiwan R.O.C.	9,443	Research and development
10th Floor, Bandi Building, Bongeunsa-ro 114, Gangnam-gu, Seoul, Korea, 135-907	2,500	Marketing and field application engineering support
Sampyeong-dong 621, Pangyo Innovally, C-501 & C-505, 253, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea	6,708	Marketing and field application engineering support
5/F, No. 521 Yurakucyo building, 10-1, Yurakucho 1-chome, Chiyoda-ku, Tokyo, Japan 100-0006	1,625	Marketing and field application engineering support

We believe that our current facilities are adequate and that additional space will be available on commercially reasonable terms for the foreseeable future.

Item 3. Legal Proceedings

We are currently not a party to any material legal proceedings. We have in the past, and may from time to time in the future, become involved in legal proceedings arising from the normal course of business activities. The semiconductor industry is characterized by frequent claims and litigation, including claims regarding patent and other intellectual property rights as well as improper hiring practices. Irrespective of the validity of such claims, we could incur significant costs in the defense thereof or could suffer adverse effects on our operations.

Item 4. Mine Safety Disclosures

Not Applicable.

PART II

Item 5. **Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities**

Our common shares have traded on the NASDAQ Global Select Market since April 29, 2010 under the symbol AOSL. As of July 31, 2019, there were approximately 115 holders of record of our common shares, not including those shares held in street or nominee name.

Dividend Policy

We have never declared or paid cash dividends on our common shares. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any dividends on our common share in the foreseeable future. Any future determination to declare dividends will be made at the discretion of our board of directors and will depend on our financial condition, operating results, capital requirements, general business conditions and other factors that our board of directors may deem relevant.

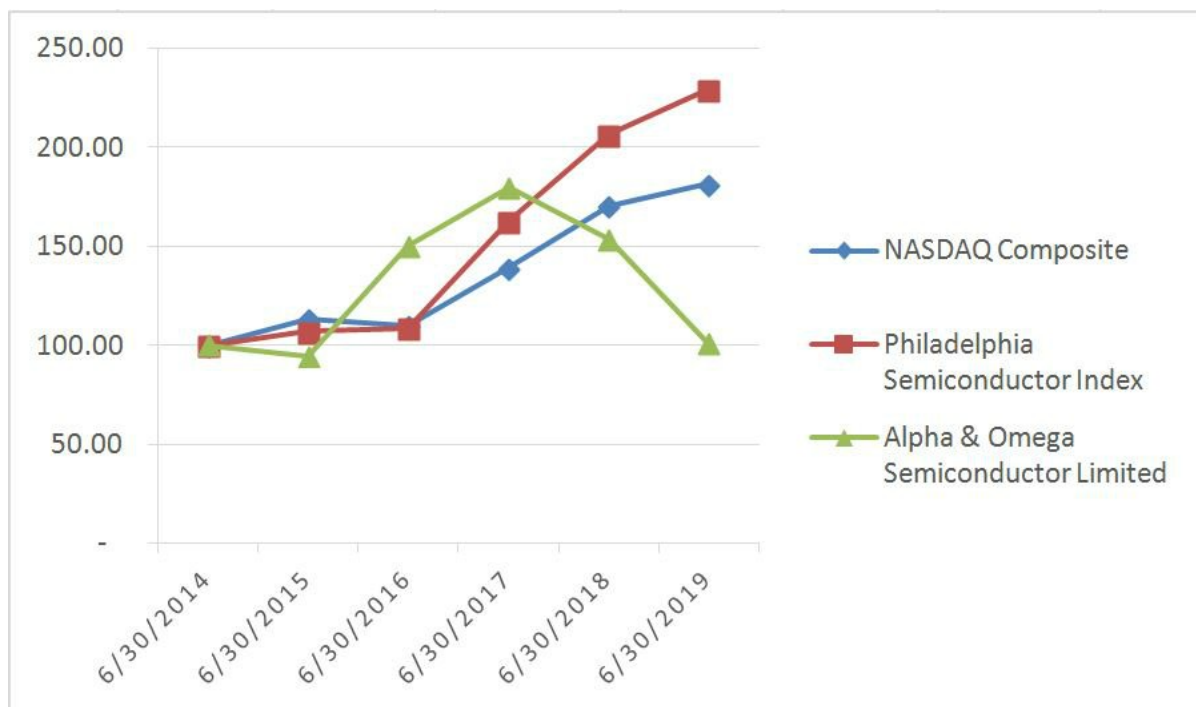
Securities Authorized for Issuance Under Equity Compensation Plans

See Item 12 of Part III of this report regarding information about securities authorized for issuance under our equity compensation plans.

Share Performance Graph

The following graph compares the total cumulative shareholder return on our common shares with the total cumulative return of the NASDAQ Composite Index and the Philadelphia Semiconductor Index for the last five fiscal year ended June 30, 2019, assuming an investment of \$100 at the beginning of such period and the reinvestment of any dividends.

The comparisons in the graph below are required by the SEC and are not intended to forecast or be indicative of possible future performance of our common shares.



The above Stock Performance Graph and related information shall not be deemed "soliciting material" or to be "filed" with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or Securities Exchange Act of 1934, each as amended, except to the extent that the Company specifically incorporates it by reference into such filing.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

In September 2017, the Board of Directors approved a repurchase program (the “Repurchase Program”) that allowed the Company to repurchase its common shares from the open market pursuant to a pre-established Rule 10b5-1 trading plan or through privately negotiated transactions up to an aggregate of \$30.0 million. The amount and timing of any repurchases under the Repurchase Program depend on a number of factors, including but not limited to, the trading price, volume and availability of the Company's common shares and the amount of available cash reserve. There is no guarantee that such repurchases under the Repurchase Program will enhance the value of our shares. Shares repurchased under this program are accounted for as treasury shares and the total cost of shares repurchased is recorded as a reduction of shareholders' equity. During fiscal years 2019, the Company repurchased an aggregate of 111,509 shares from the open market for a total cost of approximately \$1.5 million, excluding fees and related expenses, at an average price of \$13.43 per share. During the fourth quarter of fiscal year 2019, the Company did not repurchase any shares under the Repurchase Program. As of June 30, 2019, we had \$13.4 million available under this repurchase program.

Item 6. Selected Financial Data

We have derived the selected consolidated statements of operations data for the fiscal years ended June 30, 2019, 2018 and 2017 and selected consolidated balance sheet data as of June 30, 2019 and 2018 from our audited consolidated financial statements and related notes included elsewhere in this report. We have derived the selected consolidated statements of operations data for the fiscal years ended June 30, 2016 and 2015 and selected consolidated balance sheets as of June 30, 2017, 2016 and 2015 from consolidated financial statements not included in this report. The information set forth below is not necessarily indicative of results of future operations, and should be read in conjunction with Item 7, “Management's Discussion and Analysis of Financial Condition and Results of Operations” in this Annual Report on Form 10-K.

	Year Ended June 30,				
	2019	2018	2017	2016	2015
(in thousands, except per share data)					
Consolidated Statements of Operations:					
Revenue	\$450,920	\$ 421,553	\$ 383,337	\$ 335,661	\$ 327,935
Cost of goods sold	335,542	309,625	291,516	269,839	267,453
Gross profit	115,378	111,928	91,821	65,822	60,482
Operating expenses:					
Research and development	46,431	37,344	29,835	26,006	27,075
Selling, general and administrative	75,967	66,164	48,842	37,874	37,625
Impairment of long-lived assets	—	—	—	432	—
Total operating expenses	122,398	103,508	78,677	64,312	64,700
Operating income (loss)	(7,020)	8,420	13,144	1,510	(4,218)
Interest income and other income (loss), net	543	(1,943)	(141)	(498)	533
Interest expense	(6,905)	(821)	(91)	(23)	(181)
Income (loss) before income taxes	(13,382)	5,656	12,912	989	(3,866)
Income tax expense	1,256	708	3,652	4,021	3,897
Net income (loss) including noncontrolling interest	(14,638)	4,948	9,260	(3,032)	(7,763)
Net loss attributable to noncontrolling interest	(16,499)	(9,315)	(4,569)	(104)	—
Net income (loss) attributable to Alpha and Omega Semiconductor Limited	<u>\$ 1,861</u>	<u>\$ 14,263</u>	<u>\$ 13,829</u>	<u>\$ (2,928)</u>	<u>\$ (7,763)</u>
Basic	\$ 0.08	\$ 0.60	\$ 0.59	\$ (0.13)	\$ (0.29)
Diluted	\$ 0.08	\$ 0.57	\$ 0.56	\$ (0.13)	\$ (0.29)
Weighted average number of common share attributable to Alpha and Omega Semiconductor Limited used to compute net income (loss) per share:					
Basic	24,063	23,901	23,526	22,452	26,429
Diluted	24,698	24,844	24,826	22,452	26,429

As of June 30,

	2019	2018	2017	2016	2015
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(in thousands)

Consolidated Balance Sheet Data:

Cash and cash equivalents	\$ 121,893	\$ 131,535	\$ 115,708	\$ 87,774	\$ 106,085
Working capital	\$ 117,334	\$ 130,532	\$ 130,566	\$ 118,450	\$ 147,351
Total assets	\$ 739,394	\$ 667,049	\$ 398,408	\$ 318,505	\$ 347,904
Current portion of bank borrowings	\$ 26,609	\$ 3,811	\$ —	\$ —	\$ —
Current portion of capital leases	\$ 11,355	\$ 4,491	\$ 828	\$ 819	\$ 941
Bank borrowings - long term	\$ 59,380	\$ 26,786	\$ —	\$ —	\$ —
Capital leases - long term	\$ 43,381	\$ 56,791	\$ 866	\$ 1,695	\$ 64
Total Alpha and Omega Semiconductor Limited shareholders' equity	\$ 291,024	\$ 278,594	\$ 270,770	\$ 242,142	\$ 276,639

Item 7. **Management's Discussion and Analysis of Financial Condition and Results of Operations**

You should read the following discussion of the financial condition and results of our operations in conjunction with our consolidated financial statements and the notes to those statements included elsewhere in this annual report. Our consolidated financial statements contained in this annual report are prepared in accordance with U.S. GAAP.

Overview

We are a designer, developer and global supplier of a broad portfolio of power semiconductors. Our portfolio of power semiconductors includes over 2,100 products, and has grown significantly with the introduction of more than 200 new products in each of the fiscal years ended June 30, 2019 and 2018, respectively, and over 80 new products during the fiscal year ended June 30, 2017. Our teams of scientists and engineers have developed extensive intellectual properties and technical knowledge that encompass major aspects of power semiconductors, which we believe enables us to introduce and develop innovative products to address the increasingly complex power requirements of advanced electronics. We have an extensive patent portfolio that consists of 781 patents and 91 patent applications in the United States as of June 30, 2019. We also have a total of 816 foreign patents, which primarily were based on our research and development efforts through June 30, 2019. We differentiate ourselves by integrating our expertise in technology, design and advanced manufacturing and packaging to optimize product performance and cost. Our portfolio of products targets high-volume applications, including personal computers, flat panel TVs, LED lighting, smart phones, battery packs, quick chargers, home appliances, consumer and industrial motor controls and power supplies for TVs, computers, servers and telecommunications equipment.

Our business model leverages global resources, including research and development and manufacturing in the United States and Asia. Our sales and technical support teams are localized in several growing markets. We operate an 8-inch wafer fabrication facility located in Hillsboro, Oregon, or the Oregon fab, which is critical for us to accelerate proprietary technology development, new product introduction and improve our financial performance in the long run. To meet the market demand for the more mature high volume products, we also utilize the wafer manufacturing capacity of selected third party foundries. For assembly and test, we primarily rely upon our in-house facilities in China. In addition, we utilize subcontracting partners for industry standard packages. We believe our in-house packaging and testing capability provides us with a competitive advantage in proprietary packaging technology, product quality, cost and sales cycle time.

On March 29, 2016, we entered into a joint venture contract (the "JV Agreement") with two investment funds owned by the Municipality of Chongqing (the "Chongqing Funds"), pursuant to which we and the Chongqing Funds formed a joint venture, (the "JV Company"), for the purpose of constructing a power semiconductor packaging, testing and wafer fabrication facility in the Liangjiang New Area of Chongqing, China (the "JV Transaction"). The total initial capitalization of the JV Company was \$330.0 million (the "Initial Capitalization"). As of June 30, 2019, the Chongqing Funds contributed a total of \$186.0 million of initial capital in cash, including a \$24.0 million cash contribution in December 31, 2018 and we contributed cash of \$35.0 million, including a \$25.0 million contribution in August 2018, and certain intangible assets, as well as certain packaging equipment as required by the JV Agreement by transferring the legal titles of such equipment to the JV Company. As of June 30, 2019, we own 50.9%, and the Chongqing Funds own 49.1%, of the equity interest in the JV Company. If both parties agree that the termination of the JV Company is the best interest of each party or the JV Company is bankrupt or insolvent where either party may terminate early, after paying the debts of the JV Company, the remaining assets of the JV Company shall be paid to the Chongqing Funds to cover the principal of its total paid-in contributions plus interest at 10% simple annual rate prior to distributing the balance of the JV Company's assets to us. In addition, as part of the JV Transaction, the JV Company entered into a construction contract in the total price of 540.0 million RMB, or approximately \$78.0 million in January 2017. As of June 30, 2019, the JV Company paid approximately \$69.9 million (RMB 480.0 million), and expects to pay the remaining of \$8.7 million (RMB 60.0 million) in the near term. The JV Company started its assembly and testing production in the September quarter of 2018 and continued its ramp up during the fiscal year 2019. We also completed installation of equipment and trial production at the 12-inch wafer fabrication facility in fiscal year 2019. In July 2019, we commenced limited mass production at the 12-inch wafer fabrication facility. During fiscal years 2019, 2018 and 2017, we recorded \$16.5 million, \$9.3 million and \$4.6 million in net loss attributable to noncontrolling interest, respectively, representing 49.1% of the net loss incurred in the JV Company. In the long-term, we expect the JV Company to deliver significant cost savings, and enhance our market positions in China, and drive meaningful improvements in working capital and capital expenditures.

On September 5, 2017, we entered into a license agreement with STMicroelectronics International N.V. ("STMicro"), pursuant to which STMicro granted us a world-wide, royalty-free and fully-paid license to use its technologies to develop, market and distribute certain digital multi-phase controller products, which have been previously offered by STMicro. Under the license agreement, we agreed to pay a total price in cash of \$17.0 million based on the payment schedule as set forth in the agreement of approximately \$10.1 million, \$6.7 million and \$0.2 million in calendar year 2017, 2018 and 2019, respectively.

As of June 30, 2019, we recorded \$16.2 million as intangible assets. We will begin to amortize this intangible asset when the technology has met our qualification and is ready for its intended use in production.

During the fiscal year ended June 30, 2019, we continued our diversification program by developing new silicon and packaging platforms to expand our serviceable available market, or SAM and offer higher performance products. Our metal-oxide-semiconductor field-effect transistors, or MOSFET, portfolio expanded significantly across a full range of voltage applications. For example, during the fourth quarter of fiscal year of 2019, we released the new α MOS5 family, which is our latest generation of high voltage MOSFET, designed to meet the high efficiency and high-density needs for Quick Charger, Adapter, PC Power, Server, Industrial Power, Telecom, and Hyperscale Datacenter applications. In addition, we released Super Low Capacitance TVS for high-speed line protection using the latest Super Low Cap TVS platform. This new device is ideal for USB Type-C applications such as notebooks and mobile devices. During the third quarter of fiscal year of 2019, we introduced a new family of EZBuck™ regulators. The new devices provide a compact, efficient power converter solution for next-generation chipsets used in high-end TVs, servers, data storage systems, networking and other compact PC systems. We also introduced a high SOA MOSFET for hot swap applications. This new device delivers low R_{dson} with a high Safe Operating Area (SOA) capabilities ideally suited for demanding applications such as hot swap and efuse. High SOA is essential in server hot swap applications where the MOSFET needs to be robust to manage the high in-rush current effectively. Moreover, we launched a new 650V α GaN™ product family. These high voltage MOSFETs ideally suited for high efficiency and high-density power supplies in the telecom, server, and consumer adapter markets. High-efficiency server power supplies are needed to reduce cooling requirements, maximize rack area, and minimize the associated energy cost. In addition, we announced latest XSPairFET™ buck-boost MOSFET for type-c applications such as notebook, USB hubs, and power banks. During the first quarter of fiscal year of 2019, we announced a new Type-C Power Delivery compliant input protection switch with up to 28V over-voltage protection. This new device offers low R_{DS(ON)} (20mohm) in a thermally enhanced 3x3mm DFN package, made possible by our advanced co-packaging technology, combining a high performance IC with protection features and our latest high SOA MOSFET. We also announced new TO-Leadless (TOLL) packaging technology for high current 400A applications. The TOLL packaging technology offers very low package resistance and inductance due to the clip technology in comparison to other TO-Leadless packages using standard wire-bonding technology which enables improved EMI performance.

Factors affecting our performance

Our performance is affected by several key factors, including the following:

Costs of JV Company and digital power business: We are incurring an increase in operating expenses due to the additional costs associated with ramping up pre-production activities of the JV Company, as well as the initial startup work to develop and establish our new digital power business, both of which will have the significant impact on our financial performance. The JV Company started its assembly and testing production in the September quarter of 2018 and continued its ramp up during fiscal year 2019. We also completed installation of equipment and trial production at the 12-inch wafer fabrication facility in fiscal year 2019. In July 2019, we commenced limited mass production at the 12-inch wafer fabrication facility. The pre-production costs include costs relating to the installation of equipment; performance of the qualification process; increased demand for electrical power and other utilities; increased headcount as a result of hiring of additional personnel, staff and operators; and establishment of administrative and management functions and systems. Certain of such pre-production costs can be capitalized under U.S. GAAP accounting. However, the majority of such pre-production costs and all of the production ramp-up costs cannot be capitalized, therefore such costs impact our profitability. In addition, we are developing our digital power business based on the STMicro license agreement, which will allow us to design and distribute a full suite of advanced low-voltage power IC products. We have incurred and expect to continue to incur additional costs, including costs relating to compensation of qualified engineers and technical staff and other research and development and management activities, as we continue to build this new business. In the short term, we will not be able to generate sufficient amount of revenue from either of these two business initiatives to offset the increase costs, which will likely negatively impact our results of operations.

Manufacturing costs: Our gross margin is affected by a number of factors including our manufacturing costs, utilization of our manufacturing facilities, the production mixtures of our sales, pricing of wafers from third party foundries and pricing of semiconductor raw materials. Capacity utilization affects our gross margin because we have certain fixed costs associated with our packaging and testing facilities at our Oregon fab and our Chongqing fabrication facility operated by the JV Company. We expect that in the long term our JV Company will reduce our cost of manufacturing. If we are unable to utilize our manufacturing facilities at a desired level, our gross margin may be adversely affected. In addition, from time to time, we may experience wafer capacity constraints, particularly at third party foundries, that may prevent us from fully meeting the demand of our customers. While we can mitigate such constraints by increasing and re-allocating capacity at our own fab, we may not be able to do so quickly or at sufficient level, which could adversely affect our financial conditions and results of operations.

Erosion and fluctuation of average selling price: Erosion of average selling prices of established products is typical in our industry. Consistent with this historical trend, we expect our average selling prices of existing products to decline in the future. However, in the normal course of business, we seek to offset the effect of declining average selling price by introducing new and higher value products, expanding existing products for new applications and new customers and reducing the manufacturing cost of existing products. These strategies may cause the average selling price of our products to fluctuate significantly from time to time, thereby affecting our financial performance and profitability.

The global, regional economic and PC market conditions: Because our products primarily serve consumer electronic applications, a deterioration of the global and regional economic conditions could materially affect our revenue and results of operations. For example, because a significant amount of our revenue is derived from sales of products in the personal computing ("PC") markets, such as notebooks, motherboards and notebook battery packs, a significant decline or downturn in the PC market can have a material adverse effect on our revenue and results of operations. Our revenue from the PC markets accounted for approximately 45.9%, 41.6% and 39.1% of our total revenue for the years ended June 30, 2019, 2018 and 2017, respectively. In the past, we have experienced a significant global decline in the PC markets due to continued growth of demand in tablets and smart phones, worldwide economic conditions and the industry inventory correction which had and may continue to have a material negative impact on the demand for our products, revenue, factory utilization, gross margin, our ability to resell excess inventory, and other performance measures. We have executed and continue to execute strategies to diversify our product portfolio, penetrate other market segments, including the consumer, communications and industrial markets, and improve gross margins and profit by implementing cost control measures. While making efforts in reducing our reliance on the computing market, we continue to support our computing business and capitalize on the opportunities in this market with a more focused and competitive PC product strategy.

Product introductions and customers' product requirements: Our success depends on our ability to introduce products on a timely basis that meet or are compatible with our customers' specifications and performance requirements. Both factors, timeliness of product introductions and conformance to customers' requirements, are equally important in securing design wins with our customers. As we accelerate the development of new technology platforms, we expect to increase the pace at which we introduce new products and seek and acquire design wins. Our failure to introduce new products on a timely basis that meet customers' specifications and performance requirements, particularly those products with major OEM customers, and our inability to continue to expand our serviceable markets, could adversely affect our financial performance, including loss of market share. We believe that the JV Transaction will increase and diversify our customer base, particularly in China, in the long term. The JV Company started its assembly and testing production in the September quarter of 2018 and continued its ramp up during the fiscal year 2019. The JV Company also completed installation of equipment and trial production at the 12-inch wafer fabrication facility in fiscal year 2019. In July 2019, we commenced limited mass production at the 12-inch wafer fabrication facility. Even if we are able to ramp up the operation of the JV Company timely, we may not be successful in acquiring a sufficient number of new customers to offset the additional costs due to various factors, including but are not limited to, competition from other semiconductor companies in the region, our lack of history and prior relationships with customers as a new entrant, difficulties in executing our joint venture strategies, lack of control over our operations and the general economic conditions in Chongqing and China.

Distributor ordering patterns, customer demand and seasonality: Our distributors place purchase orders with us based on their forecasts of end customer demand, and this demand may vary significantly depending on the sales outlook and market and economic conditions of end customers. Because these forecasts may not be accurate, channel inventory held at our distributors may fluctuate significantly, which in turn may prompt distributors to make significant adjustments to their purchase orders placed with us. As a result, our revenue and operating results may fluctuate significantly from quarter to quarter. In addition, because our products are used in consumer electronics products, our revenue is subject to seasonality. Our sales seasonality is affected by numerous factors, including global and regional economic conditions as well as the PC market conditions, revenue generated from new products, changes in distributor ordering patterns in response to channel inventory adjustments and end customer demand for our products and fluctuations in consumer purchase patterns prior to major holiday seasons. In recent periods, broad fluctuations in the semiconductor markets and the global and regional economic conditions, in particular the decline of the PC market conditions, have had a more significant impact on our results of operations than seasonality. Furthermore, our revenue may be impacted by the level of demand from our major customers due to factors outside of our control. If these major customers experience significant decline in the demand of their products, encounter difficulties or defects in their products, or otherwise fail to execute their sales and marketing strategies successfully, it may adversely affect our revenue and results of operations.

Principal line items of statements of income

The following describes the principal line items set forth in our consolidated statements of operations:

Revenue

We generate revenue primarily from the sale of power semiconductors, consisting of power discretes and power ICs. Historically, a majority of our revenue has been derived from power discrete products. Because our products typically have three-year to five-year life cycles, the rate of new product introduction is an important driver of revenue growth over time. We believe that expanding the breadth of our product portfolio is important to our business prospects, because it provides us with an opportunity to increase our total bill-of-materials within an electronic system and to address the power requirements of additional electronic systems. In addition, a small percentage of our total revenue is generated by providing packaging and testing services to third parties through one of our subsidiaries.

Our product revenue is reported net of the effect of the estimated stock rotation returns and price adjustments that we expect to provide to our distributors. Stock rotation returns are governed by contract and are limited to a specified percentage of the monetary value of products purchased by the distributor during a specified period. At our discretion or upon our direct negotiations with the original design manufacturers ("ODMs") or original equipment manufacturers ("OEMs"), we may elect to grant special pricing that is below the prices at which we sold our products to the distributors. In these situations, we will grant price adjustments to the distributors reflecting such special pricing. We estimate the price adjustments for inventory at the distributors based on factors such as distributor inventory levels, pre-approved future distributor selling prices, distributor margins and demand for our products.

Cost of goods sold

Our cost of goods sold primarily consists of costs associated with semiconductor wafers, packaging and testing, personnel, including share-based compensation expense, overhead attributable to manufacturing, operations and procurement, and costs associated with yield improvements, capacity utilization, warranty and inventory reserves. As the volume of sales increases, we expect cost of goods sold to increase. We implemented a process to improve our factory capacity utilization rates by transferring more wafer production to our Oregon fab and reducing our reliance on outside foundries. While our utilization rates cannot be immune to the market conditions, our goal is to make them less vulnerable to market fluctuations. We believe our market diversification strategy and product growth will drive higher volume of manufacturing which will improve our factory utilization rates and gross margin in the long run.

Operating expenses

Our operating expenses consist of research and development, selling, general and administrative expenses and impairment of long-lived assets. We expect our operating expenses as a percentage of revenue to fluctuate from period to period as we continue to exercise cost control measures in response to the declining PC market as well as align our operating expenses to the revenue level.

Research and development expenses. Our research and development expenses consist primarily of salaries, bonuses, benefits, share-based compensation expense, expenses associated with new product prototypes, travel expenses, fees for engineering services provided by outside contractors and consultants, amortization of software and design tools, depreciation of equipment and overhead costs. We continue to invest in developing new technologies and products utilizing our own fabrication and packaging facilities as it is critical to our long-term success. We also evaluate appropriate investment levels and stay focused on new product introductions to improve our competitiveness. We expect that our research and development expenses will fluctuate from time to time.

Selling, general and administrative expenses. Our selling, general and administrative expenses consist primarily of salaries, bonuses, benefits, share-based compensation expense, product promotion costs, occupancy costs, travel expenses, expenses related to sales and marketing activities, amortization of software, depreciation of equipment, maintenance costs and other expenses for general and administrative functions as well as costs for outside professional services, including legal, audit and accounting services. We expect our selling, general and administrative expenses to fluctuate in the near future as we continue to exercise cost control measures.

Income tax expense

We are subject to income taxes in various jurisdictions. Significant judgment and estimates are required in determining our worldwide income tax expense. The calculation of tax liabilities involves dealing with uncertainties in the application of complex tax regulations of different jurisdictions globally. We establish accruals for potential liabilities and contingencies based on a more likely than not threshold to the recognition and de-recognition of uncertain tax positions. If the recognition threshold is met, the applicable accounting guidance permits us to recognize a tax benefit measured at the largest amount of tax

benefit that is more likely than not to be realized upon settlement with a taxing authority. If the actual tax outcome of such exposures is different from the amounts that were initially recorded, the differences will impact the income tax and deferred tax provisions in the period in which such determination is made. Changes in the location of taxable income (loss) could result in significant changes in our income tax expense.

We record a valuation allowance against deferred tax assets if it is more likely than not that a portion of the deferred tax assets will not be realized, based on historical profitability and our estimate of future taxable income in a particular jurisdiction. Our judgments regarding future taxable income may change due to changes in market conditions, changes in tax laws, tax planning strategies or other factors. If our assumptions and consequently our estimates change in the future, the deferred tax assets may increase or decrease, resulting in corresponding changes in income tax expense. Our effective tax rate is highly dependent upon the geographic distribution of our worldwide profits or losses, the tax laws and regulations in each geographical region where we have operations, the availability of tax credits and carry-forwards and the effectiveness of our tax planning strategies.

During the quarter ended September 30, 2016, we contributed certain packaging equipment as required by the JV Agreement by transferring the legal title of such equipment to the JV Company. As a result of the transfer, we reduced our deferred tax assets by \$6.6 million and recorded a \$6.6 million as a prepaid tax asset, which was to be amortized to tax expense over the useful life of the assets. As of June 30, 2017, the prepaid tax asset was amortized down to \$5.5 million, of which \$1.1 million and \$4.4 million were included in prepaid and other current assets and in other long-term assets on our balance sheet, respectively. On July 1, 2017, we adopted ASU 2016-16, Intra-Entity Transfers of Assets other than Inventory, which resulted in a de-recognition of a prepaid tax asset of \$5.5 million related to the prior period intra-entity asset transfer with the JV Company, with an offsetting reduction to retained earnings. Because the JV Company has a full valuation allowance, there was no change to our net deferred tax assets.

U.S. Tax Cuts and Jobs Act, Enacted December 22, 2017

On December 22, 2017, the United States enacted tax reform legislation through the Tax Cuts and Jobs Act (“the Tax Act”), which significantly changes the existing U.S. tax laws, including, but not limited to, (1) a reduction in the corporate tax rate from 35% to 21%, (2) a move from a worldwide tax system to a territorial system, (3) eliminating the corporate alternative minimum tax (AMT) and changing how existing AMT credits can be realized, (4) bonus depreciation that will allow for full expensing of qualified property, (5) creating a new limitation on deductible interest expense and (6) changing rules related to uses and limitations of net operating loss carryforwards created in tax years beginning after December 31, 2017.

The SEC staff issued Staff Accounting Bulletin No. 118 (“SAB 118”), which provides guidance on accounting for the tax effects of the Tax Act. SAB 118 provides a measurement period that should not extend beyond one year from the Tax Act enactment date for companies to complete the accounting under Accounting Standards Codification Topic 740 (“ASC 740”). In accordance with SAB 118, a company must reflect the income tax effects of those aspects of the Tax Act for which the accounting under ASC 740 is complete. To the extent that a company’s accounting for certain income tax effects of the Tax Act is incomplete but it is able to determine a reasonable estimate, it must record a provisional estimate in the financial statements. If a company cannot determine a provisional estimate to be included in the financial statements, it should continue to apply ASC 740 on the basis of the provisions of the tax law that were in effect immediately before the enactment of the Tax Act.

In connection with our initial analysis of the impact of the Tax Act, we reported a second quarter of fiscal year 2018 discrete tax benefit of \$2.7 million related to the re-measurement of certain deferred tax assets and liabilities. The \$2.7 million tax benefit related to the tax rate re-measurement estimated in the second quarter of fiscal year 2018 was reduced downward by \$0.2 million in the fourth quarter of fiscal year 2018, to \$2.5 million. In addition, we used a 28% U.S. federal tax rate to measure our U.S. federal income tax expense for fiscal year 2018, down from the 34% U.S. federal income tax rate used in first quarter of fiscal year 2018.

Operating results

The following tables set forth our results of operations and as a percentage of revenue for the fiscal years ended June 30, 2019, 2018 and 2017. Our historical results of operations are not necessarily indicative of the results for any future period.

	Year Ended June 30,					
	2019	2018	2017	2019	2018	2017
	(in thousands)			(% of revenue)		
Revenue	\$ 450,920	\$ 421,553	\$ 383,337	100.0 %	100.0 %	100.0 %
Cost of goods sold (1)	335,542	309,625	291,516	74.4 %	73.4 %	76.0 %
Gross profit	115,378	111,928	91,821	25.6 %	26.6 %	24.0 %
Operating expenses:						
Research and development (1)	46,431	37,344	29,835	10.3 %	8.9 %	7.8 %
Selling, general and administrative (1)	75,967	66,164	48,842	16.8 %	15.7 %	12.7 %
Total operating expenses	122,398	103,508	78,677	27.1 %	24.6 %	20.5 %
Operating income (loss)	(7,020)	8,420	13,144	(1.5)%	2.0 %	3.5 %
Interest income and other income (loss), net	543	(1,943)	(141)	0.1 %	(0.5)%	— %
Interest expense	(6,905)	(821)	(91)	(1.5)%	(0.2)%	— %
Net income (loss) before income taxes	(13,382)	5,656	12,912	(2.9)%	1.3 %	3.5 %
Income tax expense	1,256	708	3,652	0.3 %	0.2 %	1.0 %
Net income (loss) including noncontrolling interest	(14,638)	4,948	9,260	(3.2)%	1.1 %	2.5 %
Net loss attributable to noncontrolling interest	(16,499)	(9,315)	(4,569)	(3.7)%	(2.2)%	(1.2)%
Net income attributable to Alpha and Omega Semiconductor Limited	\$ 1,861	\$ 14,263	\$ 13,829	0.5 %	3.3 %	3.7 %

(1) Includes share-based compensation expense as follows:

	Year Ended June 30,					
	2019	2018	2017	2019	2018	2017
	(in thousands)			(% of revenue)		
Cost of goods sold	\$ 1,963	\$ 1,641	\$ 1,041	0.4%	0.4%	0.3%
Research and development	2,453	1,855	1,361	0.5%	0.4%	0.4%
Selling, general and administrative	8,761	7,916	4,232	1.9%	1.9%	1.1%
	\$ 13,177	\$ 11,412	\$ 6,634	2.8%	2.7%	1.8%

Revenue

The following is a summary of revenue by product type:

	Year Ended June 30,			Change			
	2019	2018	2017	2019		2018	
	(in thousands)			(in thousands)	(in percentage)	(in thousands)	(in percentage)
Power discrete	\$371,837	\$342,148	\$288,788	\$ 29,689	8.7 %	\$ 53,360	18.5 %
Power IC	70,215	67,083	82,389	3,132	4.7 %	(15,306)	(18.6)%
Packaging and testing services	8,868	12,322	12,160	(3,454)	(28.0)%	162	1.3 %
	\$450,920	\$421,553	\$383,337	\$ 29,367	7.0 %	\$ 38,216	10.0 %

Fiscal 2019 vs 2018

Total revenue was \$450.9 million for fiscal year 2019, an increase of \$29.4 million, or 7.0%, as compared to \$421.6 million for fiscal year 2018. The increase was primarily due to an increase of \$29.7 million and \$3.1 million in sales of power discrete products and in sales of power IC products, respectively. The increase in power discrete and power IC was primarily

due to a 18.8% increase in average selling price as compared to last fiscal year due to a shift in product mix, partially offset by a 8.8% decrease in unit shipments. The decrease in revenue of packaging and testing services for fiscal year 2019 as compared to last fiscal year was primarily due to decreased demand. During fiscal year 2019, we accelerated the development of new technology platforms which allowed us to introduce 89 medium and high voltage MOSFET products, targeting primarily the power supply, as well as 38 low voltage MOSFET products primarily for the computing and communication markets. In addition, we introduced 73 Power IC new products for computing applications, communication and consumer markets.

Fiscal 2018 vs 2017

Total revenue was \$421.6 million for fiscal year 2018, an increase of \$38.2 million, or 10.0%, as compared to \$383.3 million for fiscal year 2017. The increase was primarily due to an increase of \$53.4 million in sales of power discrete products, partially offset by a decrease of \$15.3 million in sales of power IC products. The net increase in product sales was primarily due to a 2.1% increase in unit shipments, as well as an 8.1% increase in average selling price as compared to last fiscal year due to a shift in product mix. The increase in revenue of packaging and testing services for fiscal year 2018 as compared to last fiscal year was primarily due to increased demand.

Cost of goods sold and gross profit

	Year Ended June 30,			Change			
	2019	2018	2017	2019		2018	
	(in thousands)			(in thousands)	(in percentage)	(in thousands)	(in percentage)
Cost of goods sold	\$ 335,542	\$ 309,625	\$ 291,516	\$ 25,917	8.4%	\$ 18,109	6.2%
Percentage of revenue	74.4%	73.4%	76.0%				
Gross profit	\$ 115,378	\$ 111,928	\$ 91,821	\$ 3,450	3.1%	\$ 20,107	21.9%
Percentage of revenue	25.6%	26.6%	24.0%				

Fiscal 2019 vs 2018

Cost of goods sold was \$335.5 million for fiscal year 2019, an increase of \$25.9 million, or 8.4%, as compared to \$309.6 million for fiscal year 2018. The increase was primarily due to the 7.0% increase of revenue and the production ramp up costs related to our Chongqing joint venture. Gross margin decreased by 1.0 percentage points to 25.6% for fiscal year 2019, as compared to 26.6% for fiscal year 2018. The decrease in gross margin was primarily due to production ramp up costs related to our Chongqing joint venture. We expect our gross margin to continue to fluctuate in the future as a result of variations in our product mix, ramp up costs related to our Chongqing joint venture, factory utilization, semiconductor wafer and raw material pricing, manufacturing labor cost and general economic and PC market conditions.

Fiscal 2018 vs 2017

Cost of goods sold was \$309.6 million for fiscal year 2018, an increase of \$18.1 million, or 6.2%, as compared to \$291.5 million for fiscal year 2017. The increase was primarily due to increased unit shipments. Gross margin increased by 2.6 percentage points to 26.6% for fiscal year 2018, as compared to 24.0% for fiscal year 2017. The increase in gross margin was primarily due to a shift in product mix and higher factory utilization, as well as approximately \$2.0 million of specific reserve that was released during the fiscal year 2018.

Research and development expenses

	Year Ended June 30,			Change			
	2019	2018	2017	2019		2018	
	(in thousands)			(in thousands)	(in percentage)	(in thousands)	(in percentage)
Research and development	\$ 46,431	\$ 37,344	\$ 29,835	\$ 9,087	24.3%	\$ 7,509	25.2%

Fiscal 2019 vs 2018

Research and development expenses were \$46.4 million for fiscal year 2019, an increase of \$9.1 million, or 24.3%, as compared to \$37.3 million for fiscal year 2018. The increase was primarily attributable to a \$4.3 million increase in employee compensation and benefit expenses mainly due to increased headcount to ramp up our digital power business, a \$2.0 million increase in product prototyping engineering expenses as a result of increased engineering activities, a \$0.6 million increase in share-based compensation expense as a result of an increase of stock awards granted, a \$0.8 million increase in professional services expense as a result of higher consulting activities, \$0.8 million increase in equipment supplies as a result of higher patent expenses and higher computer software expense, \$0.2 million increase in facility expenses as a result of higher office rental expenses, and a \$0.4 million increase in depreciation expenses. We continue to evaluate and invest resources in developing new technologies and products utilizing our own fabrication and packaging facilities. We believe the investment in research and development are important meet our strategic objectives.

Fiscal 2018 vs 2017

Research and development expenses were \$37.3 million for fiscal year 2018, an increase of \$7.5 million, or 25.2%, as compared to \$29.8 million for fiscal year 2017. The increase was primarily attributable to a \$3.0 million increase in employee compensation and benefit expenses mainly due to higher bonus expenses and increased headcount to ramp up our digital power business, a \$2.7 million increase in product prototyping engineering expenses as a result of increased engineering activities, a \$0.5 million increase in share-based compensation expense as a result of an increase of stock awards granted, a \$0.5 million increase in consulting expenses due to more consulting activities, and a \$0.3 million increase in depreciation expenses.

Selling, general and administrative expenses

	Year Ended June 30,			Change			
	2019	2018	2017	2019		2018	
	(in thousands)			(in thousands)	(in percentage)	(in thousands)	(in percentage)
Selling, general and administrative	\$ 75,967	\$ 66,164	\$ 48,842	\$ 9,803	14.8%	\$ 17,322	35.5%

Fiscal 2019 vs 2018

Selling, general and administrative expenses were \$76.0 million for fiscal year 2019, an increase of \$9.8 million, or 14.8%, as compared to \$66.2 million for fiscal year 2018. The increase was primarily due to a \$6.4 million increase in employee compensation and benefits expense as a result of the costs for the 12-inch fab facility in the JV Company and increased headcount, partially offset by lower bonus expenses, a \$2.0 million increase in facility expenses as a result of an increase of equipment rental costs and higher utility costs, a \$0.8 million increase in share-based compensation expense due to increased grant of equity awards, and a \$0.7 million increase in depreciation expenses during the current fiscal year.

Fiscal 2018 vs 2017

Selling, general and administrative expenses were \$66.2 million for fiscal year 2018, an increase of \$17.3 million, or 35.5%, as compared to \$48.8 million for fiscal year 2017. The increase was primarily due to a \$12.3 million increase in employee compensation and benefits expense as a result of pre-production costs in the JV Company, increased headcount and higher bonus expenses, a \$3.7 million increase in share-based compensation expense due to increased grant of equity awards, and a \$1.0 million increase in employee business expenses due to increased travel expenses.

Interest income and other income (loss), net

	Year Ended June 30,			Change			
	2019	2018	2017	2019		2018	
	(in thousands)			(in thousands)	(in percentage)	(in thousands)	(in percentage)
Interest income and other income (loss), net	\$ 543	\$ (1,943)	\$ (141)	\$ 2,486	(127.9)%	\$ (1,802)	1,278.0%

Interest income and other, net was primarily related to interest earned from cash and cash equivalents, as well as foreign exchange gains (losses). The increase in interest income and others, net in fiscal year 2019 as compared to fiscal year 2018 was

primarily due to \$2.7 million increase in foreign exchange gains as a result of recent appreciation of USD against RMB, partially offset by a \$0.2 million decrease in interest income as a result of a decrease in average cash balances. The decrease in interest income and others, net in fiscal year 2018 as compared to fiscal year 2017 was primarily due to a \$2.1 million increase in foreign exchange losses as a result of recent depreciation of USD, partially offset by a \$0.3 million increase in interest income as a result of an increase in average cash balances.

Interest Expense

	Year Ended June 30,			Change			
	2019	2018	2017	2019		2018	
	(in thousands)			(in thousands)	(in percentage)	(in thousands)	(in percentage)
Interest expense	\$ (6,905)	\$ (821)	\$ (91)	\$ (6,084)	741.0%	\$ (730)	802.2%

Interest expense was primarily related to bank borrowings. The increase in interest expenses for fiscal year 2019 and 2018 was primarily due to a significant increase in bank borrowings.

Income tax expense

	Year Ended June 30,			Change			
	2019	2018	2017	2019		2018	
	(in thousands)			(in thousands)	(in percentage)	(in thousands)	(in percentage)
Income tax expense	\$ 1,256	\$ 708	\$ 3,652	\$ 548	77.4%	\$ (2,944)	(80.6)%

Fiscal 2019 vs 2018

Income tax expense for fiscal years 2019 and 2018 was \$1.3 million and \$0.7 million, respectively. Income tax expense increased by \$0.5 million, or 77.4% in fiscal year 2019 as compared to fiscal year 2018 primarily due to a \$2.5 million tax benefit in fiscal year 2018 from re-measuring our U.S. deferred tax liabilities following the enactment of the 2017 U.S. Tax Cuts and Jobs Act in December 2017, partially offset by increased research credits generated in fiscal year 2019 and changes in the mix of earnings in various geographic jurisdictions between the respective periods and a lower U.S. tax rate in fiscal year 2019 compared to fiscal year 2018. Excluding the discrete income tax items, the effective tax rate for the current fiscal year was (14.6%), compared to 61.7% for the last fiscal year. The changes in the effective tax rate and tax expense between the fiscal years resulted primarily from changes in the mix of earnings in various geographic jurisdictions between the current fiscal year and prior fiscal year, increased research credits generated in fiscal year 2019 and the reduction in the U.S. corporate tax rate between fiscal 2019 and fiscal 2018 following the enactment of the 2017 U.S. Tax Cut and Jobs Act.

Fiscal 2018 vs 2017

Income tax expense for fiscal years 2018 and 2017 was \$0.7 million and \$3.7 million, respectively. Income tax expense decreased by \$2.9 million, or 80.6%, in fiscal year 2018 as compared to fiscal year 2017 primarily due to a \$2.5 million tax benefit from re-measuring our U.S. deferred tax liabilities following the enactment of the 2017 U.S. Tax Cuts and Jobs Act in December 2017. Additional tax savings were generated in fiscal year 2018 due to changes in the mix of earnings in various geographic jurisdictions between the respective periods and a lower U.S. tax rate in fiscal year 2018. Excluding the discrete income tax items, the effective tax rate for the current fiscal year was 61.7%, compared to 36.6% for the last fiscal year. The changes in the effective tax rate and tax expense between the fiscal years resulted primarily from changes in the mix of earnings in various geographic jurisdictions between the current year and prior year, partially offset by the reduction in the U.S. corporate tax rate following the enactment of the 2017 U.S. Tax Cut and Jobs Act.

Liquidity and Capital Resources

Our principal need for liquidity and capital resources is to maintain sufficient working capital to support our operations and to invest adequate capital expenditures to fuel the growth of our business. To date, we finance our operations and capital expenditures primarily through funds generated from operations and borrowings under our term loans, financing lease and other debt agreements.

On August 15, 2017, our Oregon subsidiary, Jireh Semiconductor Incorporated (“Jireh”), entered into a credit agreement with a financial institution (the “Bank”) that provides a term loan in an amount up to \$30.0 million for the purpose of purchasing certain equipment for our fabrication facility located in Oregon. The obligation under the credit agreement is secured by substantially all assets of Jireh and guaranteed by the Company. The credit agreement has a five-year term and matures on August 15, 2022. In January 2018 and July 2018, Jireh drew down the loan in the amount of \$13.2 million and \$16.7 million, respectively. The loan accrues interest based on an adjusted London Interbank Offered Rate (“LIBOR”) as defined in the credit agreement, plus specified applicable margin in the range of 1.75% to 2.25%, based on the outstanding balance of the loan. The credit agreement contains customary restrictive covenants, including certain financial covenants that require the Company to maintain, on a consolidated basis, specified financial ratios and fixed charge coverage ratio. We were in compliance with these covenants as of June 30, 2019. As of June 30, 2019, the outstanding balance of the term loan was \$24.2 million.

On May 1, 2018, Jireh entered into a credit agreement with the Bank that provided a term loan in an amount of \$17.8 million. The obligation under the credit agreement is secured by certain assets of Jireh and guaranteed by the Company. The loan accrues interest based on a fixed rate of 5.04% based on the outstanding balance of the loan. The credit agreement contains customary restrictive covenants and includes certain financial covenants that require us to maintain, on a consolidated basis, specified financial ratios. We were in compliance with these covenants as of June 30, 2019. As of June 30, 2019, the outstanding balance of this term loan was \$16.8 million.

In March 2016, we entered into the JV Agreement with an initial capitalization of \$330.0 million. As of June 30, 2019, the Chongqing Funds contributed a total of \$186.0 million of initial capital in cash, including \$24.0 million cash contribution in December 2018, and we contributed \$35.0 million, including \$25.0 million contribution in August 2018, in cash and certain intangible assets, as well as certain packaging equipment as required by the JV Agreement by transferring the legal titles of such equipment to the JV Company. In addition, if both parties agree that the termination of the JV Company is the best interest of each party or the JV Company is bankrupt or insolvent where either party may terminate early, after paying the debts of the JV Company, the remaining assets of the JV Company shall be paid to the Chongqing Funds to cover the principal of its total paid-in contributions plus the interest at 10% simple annual rate prior to distributing the balance of the JV Company's assets to us.

In January 2017, the JV Company entered into the EPC Contract to build the Chongqing manufacturing facility. The total price payable by the JV Company under the EPC Contract is Chinese Renminbi (RMB) 540.0 million, or approximately \$78.0 million based on the currency exchange rate between RMB and U.S. Dollar on the effective date of the EPC Contract. The payment is subject to volatility as a result of exposure to fluctuations in RMB foreign currency exchange rates. As of June 30, 2019, the JV Company paid approximately \$69.9 million (RMB 480.0 million), and expect to pay the remaining of \$8.7 million (RMB 60.0 million) in the near term. We expect the JV Company to obtain additional financing in order to fund the remaining portion of the acquisition of equipment and working capital. However, there is no guarantee that the JV Company will be able to secure the required amount of financing from the lenders, or if such financing will be available on terms favorable to us. If the JV Company cannot secure sufficient financing, we may use a portion of our cash reserve to further capitalize and finance the JV Company.

On May 9, 2018 (the “Effective Date”), the JV Company entered into a lease finance agreement and a security agreement (the “Agreements”) with YinHai Leasing Company and China Import/Export Bank (the “Lenders”). Pursuant to the Agreements, the Lenders agree to provide an aggregate of Chinese Renminbi (RMB) 400.0 million, or \$62.8 million based on the currency exchange rate between RMB and U.S. Dollar on the Effective Date, of financing to the JV Company (the “Lease Financing”). The interest under the Lease Financing is accrued based on the China Base Rate multiplied by 1.15, or 5.4625% on the Effective Date. Under the Agreements, at the end of the five-year lease term, the Lenders agree to sell such equipment back to the JV Company for a nominal amount (RMB 1). The JV Company's obligations under the Lease Financing are secured by the land and building owned by the JV Company. As of June 30, 2019, the outstanding balance of the Lease Financing was approximately 376.0 million RMB (equivalent of \$54.7 million based on the currency exchange rate as of June 30, 2019).

On March 12, 2019, the JV Company entered into a loan agreement with The Export-Import Bank of China in the aggregate principal amount of 200 million RMB (approximately \$29.8 million based on currency exchange rate between RMB and U.S. Dollar on March 31, 2019). The loan will mature on February 20, 2025. The JV Company drew down 190 million RMB (approximately \$28.3 million based on the currency exchange rate between RMB and U.S. Dollar on March 31, 2019) in March 2019. The loan withdraw window will expire on February 28, 2020. The interest is accrued based on the China Base Rate multiplied by 1.1, or 5.39% on March 12, 2019. The loan requires quarterly interest payments. The principal payments are required to pay every 6 months over the term of loan commencing in October 2019. The obligation under this loan agreement is secured by the buildings and certain equipment owned by the JV Company. As a condition of the loan

arrangements, 14 million RMB (approximately \$2.0 million) of cash is held as restricted cash by the JV Company as a compensating balance at the JV Company's bank until the principal is paid off. As of June 30, 2019, the outstanding balance of the loan was 190 million RMB (equivalent of \$27.7 million based on the currency exchange rate as of June 30, 2019).

On March 21, 2019, the JV Company entered into a one-year loan agreement with China Everbright Bank in China to provide a loan for 20 million RMB, or \$3.0 million based on currency exchange rate between RMB and U.S. Dollar on March 31, 2019 at fixed interest rate of 5.44% per annum. Interest payments are due monthly with the entire principal due on March 21, 2020. As of June 30, 2019, the outstanding balance under the loan was 20 million RMB (equivalent of \$2.9 million based on the currency exchange rate as of June 30, 2019).

On November 29 and December 4, 2018, the JV Company entered into two one-year loan agreements with China Merchant Bank in China to provide loans for 80 million RMB and 20 million RMB or \$14.5 million in total based on currency exchange rate between RMB and U.S. Dollar on December 31, 2018 at varying interest rates, respectively. Interest payments are due monthly and quarterly with the entire principal due not later than December 18 and December 5, 2019, respectively. As of June 30, 2019, the outstanding balance under the loans was 100 million RMB (equivalent of \$14.6 million in total based on the currency exchange rate as of June 30, 2019).

On November 16, 2018, the Company's subsidiary in China entered into a line of credit facility with Industrial and Commercial Bank of China, which expires in September 30, 2019. The purpose the credit facility is to provide short-term borrowings. The Company can borrow up to approximately 72 million RMB or \$10.3 million based on currency exchange rate between RMB and U.S. Dollar on November 16, 2018. As of June 30, 2019, there was no outstanding balance under the line of credit.

In September 2017, the Board of Directors approved a repurchase program (the "Repurchase Program") that allowed us to repurchase our common shares from the open market pursuant to a pre-established Rule 10b5-1 trading plan or through privately negotiated transactions up to an aggregate of \$30.0 million. The amount and timing of any repurchases under the Repurchase Program depend on a number of factors, including but not limited to, the trading price, volume, availability of our common shares and the amount of available cash reserve. Shares repurchased under this program are accounted for as treasury shares and the total cost of shares repurchased is recorded as a reduction of shareholders' equity. There is no guarantee that such repurchases under the Repurchase Program will enhance the value of our shares. Since the inception of the program in 2010, we repurchased an aggregate of 6,784,648 shares from the open market under the Repurchase Trading Plan for a total cost of \$67.3 million, at an average price of \$9.92 per share, excluding fees and related expenses of \$0.4 million. We did not repurchase any shares under the Repurchase Program during the three months ended June 30, 2019. No repurchased shares have been retired. Shares repurchased are accounted for as treasury shares and the total cost of shares repurchased is recorded as a reduction of shareholders' equity. During fiscal years 2019 and 2018, the Company repurchased an aggregate of 111,509 shares and 950,046 shares, respectively. As of June 30, 2019, of the 6,784,648 repurchased shares, 138,828 shares with a weighted average repurchase price of \$10.41 per share, were reissued at an average price of \$5.55 per share for option exercises and vested restricted share units. We had \$13.4 million available under our repurchase program as of June 30, 2019.

On September 5, 2017, we entered into a license agreement with STMicroelectronics International N.V. ("STMicro"), pursuant to which STMicro granted us a world-wide, royalty-free and fully-paid license to use its technologies to develop, market and distribute certain digital multi-phase controller products, which have been offered by STMicro. Under the license agreement, we agreed to pay a total price in cash of \$17.0 million based on the payment schedule as set forth in the agreement of approximately \$10.1 million, \$6.7 million and \$0.2 million in calendar year 2017, 2018 and 2019, respectively. As of June 30, 2019, we recorded \$16.2 million of intangible assets related to STMicro. We begin amortizing such license fees when the technology has met our qualification and is ready for intended use in production.

The Chinese government imposes certain currency exchange controls on cash transfers out of China. Regulations in China permit foreign owned entities to freely convert the Renminbi into foreign currency for transactions that fall under the "current account," which includes trade related receipts and payments, interests, and dividend payments. Accordingly, subject to the review and verification of the underlying transaction documents and supporting documents by the account banks in China, our Chinese subsidiaries may use Renminbi to purchase foreign exchange currency for settlement of such "current account" transactions without the pre-approval from China's State Administration of Foreign Exchange (SAFE) or its provincial branch. Pursuant to applicable regulations, foreign-invested enterprises in China may pay dividends only out of their accumulated profits, if any, determined in accordance with Chinese accounting standards and regulations. In calculating accumulated profits, foreign-invested enterprises in China are required to allocate at least 10% of their profits each year, if any, to fund the equity reserve account unless the reserve has reached 50% of the registered capital of the enterprises. While SAFE approval is not statutorily required for eligible dividend payments to the foreign parent, in practice, before making the

dividend payment, the account bank may seek SAFE's opinion with respect to a dividend payment if the payment involves a relatively large amount, which may delay the dividend payment depending on the then overall status of cross-border payments and receipts of China.

Transactions that involve conversion of Renminbi into foreign currency in relation to foreign direct investments and provision of debt financings in China are classified as "capital account" transactions. Examples of "capital account" transactions include repatriations of investments by foreign owners and repayments of loan principal to foreign lenders. "Capital account" transactions require prior approval from SAFE or its provincial branch or an account bank delegated by SAFE to convert a remittance into a foreign currency, such as U.S. dollars, and transmit the foreign currency outside of China. As a result of this and other restrictions under PRC laws and regulations, our China subsidiaries are restricted in their ability to transfer a portion of their net assets to us, and such restriction may adversely affect our ability to generate sufficient liquidity to fund our operations or other expenditures. As of June 30, 2019 and 2018, such restricted portion amounted to approximately \$209.5 million and \$184.3 million, or 64.4% and 62.8%, of our total consolidated net assets attributable to the Company, respectively. The increase of restricted net assets was primarily from the JV Company in China.

We believe that our current cash and cash equivalents and cash flows from operations will be sufficient to meet our anticipated cash needs, including working capital and capital expenditures, for at least the next twelve months. In the long-term, we may require additional capital due to changing business conditions or other future developments, including any investments or acquisitions we may decide to pursue. If our cash is insufficient to meet our needs, we may seek to raise capital through equity or debt financing. The sale of additional equity securities could result in dilution to our shareholders. The incurrence of indebtedness would result in increased debt service obligations and may include operating and financial covenants that would restrict our operations. We cannot be certain that any financing will be available in the amounts we need or on terms acceptable to us, if at all.

Cash and cash equivalents

As of June 30, 2019 and 2018, we had \$121.9 million and \$131.5 million of cash and cash equivalents, respectively. Our cash and cash equivalents primarily consist of cash on hand and short-term bank deposits with original maturities of three months or less. Of the \$121.9 million and \$131.5 million cash and cash equivalents, \$68.2 million and \$100.9 million, respectively, are deposited with financial institutions outside the United States.

The following table shows our cash flows from operating, investing and financing activities for the periods indicated:

	Year Ended June 30,		
	2019	2018	2017
	(in thousands)		
Net cash provided by operating activities	\$ 31,421	\$ 3,480	\$ 42,648
Net cash used in investing activities	(112,435)	(194,127)	(55,585)
Net cash provided by financing activities	75,099	206,953	40,809
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(1,514)	(511)	95
Net increase (decrease) in cash, cash equivalents and restricted cash	\$ (7,429)	\$ 15,795	\$ 27,967

Cash flows from operating activities

Net cash provided by operating activities of \$31.4 million for fiscal year 2019 resulted primarily from net loss of \$14.6 million, non-cash charges of \$44.8 million and net change in assets and liabilities providing net cash of \$1.3 million. The non-cash charges of \$44.8 million included depreciation and amortization expenses of \$32.0 million, share-based compensation expense of \$13.2 million, and net deferred income taxes of \$0.5 million. The net change in assets and liabilities providing net cash of \$1.3 million was primarily due to \$9.6 million increase in accrued and other liabilities, \$9.2 million decrease in accounts receivable due to timing of billings and collection of payments, \$6.4 million increase in accounts payable primarily due to timing of payments, partially offset by \$21.5 million increase in inventories, \$1.9 million increase in other current and long-term assets primarily due to increase in advance payments to suppliers, and \$0.6 million decrease in income taxes payable.

Net cash provided by operating activities of \$3.5 million for fiscal year 2018 resulted primarily from net income of \$4.9 million, non-cash charges of \$38.6 million and net change in assets and liabilities providing net cash of \$40.1 million. The non-cash charges of \$38.6 million included depreciation and amortization expenses of \$29.4 million, share-based compensation expense of \$11.4 million, and net deferred income taxes of \$2.2 million. The net change in assets and liabilities providing net cash of \$40.1 million was primarily due to \$5.3 million increase in accounts receivable due to timing of billings and collection of payments, \$13.9 million increase in inventories, \$34.6 million increase in other current and long-term assets primarily due to increase in advance payments to suppliers, partially offset by \$4.9 million increase in accounts payable primarily due to timing of payments, \$8.5 million increase in accrued and other liabilities, and \$0.5 million increase in income taxes payable.

Net cash provided by operating activities of \$42.6 million for fiscal year 2017 resulted primarily from net income of \$9.3 million, non-cash charges of \$40.6 million and net change in assets and liabilities providing net cash of \$7.2 million. The non-cash charges of \$40.6 million included depreciation and amortization expenses of \$27.2 million, share-based compensation expense of \$6.6 million, net deferred income taxes of \$7.2 million, and gain on disposal of property and equipment of \$0.4 million. The net change in assets and liabilities providing net cash of \$7.2 million was primarily due to \$1.8 million increase in accounts receivable due to timing of billings and collection of payments, \$7.4 million increase in inventories, \$4.6 million increase in other current and long-term assets primarily due to increase in advance payments to suppliers, and \$1.3 million decrease in income taxes payable, partially offset by \$3.3 million increase in accrued and other liabilities, and \$4.5 million increase in accounts payable primarily due to timing of payments.

Cash flows from investing activities

Net cash used in investing activities of \$112.4 million for the fiscal year 2019 was primarily attributable to \$112.1 million purchases of property and equipment, including \$76.0 million purchases in JV Company, and \$0.4 million purchases of intangible assets.

Net cash used in investing activities of \$194.1 million for the fiscal year 2018 was primarily attributable to \$177.7 million purchases of property and equipment, including \$128.4 million purchases in JV Company, and \$16.4 million purchases of intangible assets to develop our digital power business.

Net cash used in investing activities of \$55.6 million for the fiscal year 2017 was primarily attributable to \$55.6 million purchases of property and equipment, including \$16.1 million purchases in JV Company, and \$8.7 million of land use rights to increase our in-house production capacity and to support the JV Company, as well as \$0.6 million investment in a privately held company, partially offset by \$0.6 million of proceeds from sale of property and equipment.

Cash flows from financing activities

Net cash provided by financing activities of \$75.1 million for the fiscal year 2019 was primarily attributable to \$24.0 million proceeds from investment by Chongqing Funds, \$77.9 million of proceeds from borrowings, and \$3.0 million of proceeds from exercises of share options and issuance of shares under the ESPP, partially offset by \$2.0 million in common shares acquired to settle withholding tax related to vesting of restricted stock units, \$1.5 million for repurchase of our common shares under the repurchase program, \$4.4 million in payments of capital lease obligations, and \$21.9 million in repayments of borrowings.

Net cash provided by financing activities of \$207.0 million for the fiscal year 2018 was primarily attributable to \$129.0 million proceeds from investment by Chongqing Funds, \$31.0 million of proceeds from borrowings under our term loans in Jireh, \$60.4 million of proceeds from financing lease in the JV Company, and \$5.0 million of proceeds from exercises of share options and issuance of shares under the ESPP, partially offset by \$2.4 million in common shares acquired to settle withholding tax related to vesting of restricted stock units, \$15.1 million for repurchases of our common shares under the repurchase program, \$0.8 million in payments of capital lease obligations, and \$0.1 million in repayments of borrowings.

Net cash provided by financing activities of \$40.8 million for the fiscal year 2017 was primarily attributable to \$33.0 million proceeds from investment by Chongqing Funds, and \$10.7 million of proceeds from exercises of share options and issuance of shares under the ESPP, partially offset by \$2.1 million in common shares acquired to settle withholding tax related to vesting of restricted stock units, and \$0.8 million in payments of capital lease obligations.

Contractual Obligations

Our contractual obligations as of June 30, 2019 are as follows:

	Payments Due by Period				
	Total	Less than 1 year	1-3 years	3-5years	More than 5 years
	(in thousands)				
Bank borrowings	\$ 86,177	\$ 26,682	\$ 24,832	\$ 29,421	\$ 5,242
Capital leases	61,215	14,219	34,727	12,269	—
Operating leases	9,307	4,357	2,905	1,896	149
Capital commitments with respect to property and equipment	33,825	33,825	—	—	—
Purchase commitments with respect to inventories and others	59,499	44,590	2,364	2,334	10,211
Total contractual obligations	<u>\$ 250,023</u>	<u>\$ 123,673</u>	<u>\$ 64,828</u>	<u>\$ 45,920</u>	<u>\$ 15,602</u>

As of June 30, 2019, we had recorded liabilities of \$0.9 million for uncertain tax positions and \$0.2 million for potential interest and penalties, which are not included in the above table because we are unable to reliably estimate the amount of payments in individual years that would be made in connection with these uncertain tax positions.

Commitments

See Note 13 of the Notes to the Consolidated Financial Statements contained in this Annual Report on Form 10-K for a description of commitments.

Off-Balance Sheet Arrangements

As of June 30, 2019, we had no material off-balance sheet arrangements as defined in Item 303(a)(4)(ii) of Regulation S-K.

Critical Accounting Policies and Estimates

The preparation of our consolidated financial statements requires us to make estimates, judgments and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses. To the extent there are material differences between these estimates and actual results, our consolidated financial statements will be affected. On an ongoing basis, we evaluate the estimates, judgments and assumptions including those related to revenue recognition, inventory reserves, warranty accrual, income taxes, share-based compensation, and useful lives for property and equipment and intangible assets.

Revenue recognition

As a result of the adoption of the Accounting Standards Codification Topic 606 ("ASC 606") "Revenue from Contracts with Customers" on July 1, 2018, at the beginning of the first quarter of fiscal year 2019, we determine revenue recognition through the following steps: (1) identification of the contract with a customer; (2) identification of the performance obligations in the contract; (3) determination of the transaction price; (4) allocation of the transaction price to the performance obligations in the contract; and (5) recognition of revenue when, or as, a performance obligation is satisfied. We recognize revenue when product is shipped to the customer, net of estimated stock rotation returns and price adjustments to certain distributors.

We sell our products primarily to distributors, who in turn sell our products globally to various end customers. Our revenue is net of the effect of the estimated stock rotation returns and price adjustments that we expect to provide to certain distributors. Stock rotation returns are governed by contract and are limited to a specified percentage of the monetary value of the products purchased by distributors during a specified period. We estimate provision for stock rotation returns based on historical returns and individual distributor agreements. We also provide special pricing to certain distributors primarily based on volume, to encourage resale of our products. We estimate the expected price adjustments at the time the revenue is recognized based on distributor inventory levels, pre-approved future distributor selling prices, distributor margins and demand for our products. If actual stock rotation returns or price adjustments differ from our estimates, adjustments may be recorded in the period when such actual information is known. Allowance for price adjustments is recorded against accounts receivable and provision for stock rotation is recorded in accrued liabilities on the consolidated balance sheets.

The change for us under ASC 606 relates to the timing of revenue recognition with two U.S.-based distributors. Sales to these distributors are governed under the terms of agreements providing extended price protection and other return rights. Prior to the adoption of ASC 606, revenue and costs related to these sales were deferred until distributors sold the products to end customers and the amount of price adjustments was fixed and finalized. Upon the adoption of ASC 606, the transaction price takes into consideration the effect of variable consideration, such as price adjustments and returns rights, which are estimated and recorded at the time the products are delivered. Accordingly, starting in July 1, 2018, we recognize revenue at the time of shipment or delivery to these two distributors, adjusted for estimates of the price adjustments and product returns based on historical data and other available information.

Packaging and testing services revenue is recognized upon shipment of serviced products to the customer.

Inventory reserves

We carry inventories at the lower of cost (determined on a first-in, first-out basis) or net realizable value. Cost primarily consists of semiconductor wafers and raw materials, labor, depreciation expenses and other manufacturing expenses and overhead, and packaging and testing fees paid to third parties if subcontractors are used. Inventory reserves are made based on our periodic review of inventory quantities on hand as compared with our sales forecasts, historical usage, aging of inventories, production yield levels and current product selling prices. If actual market conditions are less favorable than those forecasted by us, additional future inventory write-downs may be required that could adversely affect our operating results. Inventory reserves once established are not reversed until the related inventory has been sold or scrapped. If actual market conditions are more favorable than expected and the products that have previously been written down are sold, our gross margin would be favorably impacted.

Product warranty

We provide a standard one-year warranty for the products from the date of purchase by the end customers. We accrue for estimated warranty costs at the time revenue is recognized. Our warranty obligation is affected by product failure rates, labor and material costs for replacing defective parts, related freight costs for failed parts and other quality assurance costs. We monitor our product returns for warranty claims and maintain warranty reserve based on our historical experiences and anticipated warranty claims known at the time of estimation. If actual warranty costs differ significantly from our estimates, revisions to the estimated warranty accrual would be required and any such adjustments could be material.

Accounting for income taxes

We are subject to income taxes in a number of jurisdictions. We must make certain estimates and judgments in determining income tax expense for financial statement purposes. These estimates and judgments occur in the calculation of tax credits, benefits and deductions, and in the calculation of certain tax assets and liabilities which arise from differences in the timing of recognition of revenue and expense for tax and financial statement purposes, as well as interest and penalties related to uncertain tax positions. There are many transactions and calculations for which the ultimate tax determination is uncertain during the ordinary course of business. We establish accruals for certain tax contingencies based on estimates of whether additional taxes may be due. While the final tax outcome of these matters may differ from the amounts that were initially recorded, such differences will impact the income tax and deferred tax provisions in the period in which such determination is made. As a result, significant changes to these estimates may result in an increase or decrease to our tax provision in a subsequent period.

Significant management judgment is also required in determining whether deferred tax assets will be realized in full or in part. When it is more likely than not that all or some portion of specific deferred tax assets such as net operating losses or foreign tax credit carryforwards will not be realized, a valuation allowance must be established for the amount of the deferred tax assets that cannot be realized. We consider all available positive and negative evidence on a jurisdiction-by-jurisdiction basis when assessing whether it is more likely than not that deferred tax assets are recoverable. We consider evidence such as our past operating results, the existence of cumulative losses in recent years and our forecast of future taxable income. We will maintain a partial valuation allowance equal to the state research and development credit carryforwards until sufficient positive evidence exists to support reversal of the valuation allowance.

We have not provided for withholding taxes on the undistributed earnings of our foreign subsidiaries because we intend to reinvest such earnings indefinitely. As of June 30, 2019, the cumulative amount of undistributed earnings of our foreign subsidiaries considered permanently reinvested was \$140.6 million. The determination of the unrecognized deferred tax liability on these earnings is not practicable. Should we decide to remit this income to the Bermuda parent company in a future period, our provision for income taxes may increase materially in that period.

The Financial Accounting Standards Board ("FASB") has issued guidance which clarifies the accounting for income taxes by prescribing a minimum probability threshold that a tax position must meet before a financial statement benefit is recognized. The minimum threshold is defined as a tax position that is more likely than not to be sustained upon examination by the applicable taxing authority, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The tax benefit to be recognized is measured as the largest amount of benefit that is greater than fifty percent likely to be realized upon ultimate settlement. The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax law and regulations in a multitude of jurisdictions. Although the guidance on the accounting for uncertainty in income taxes prescribes the use of a recognition and measurement model, the determination of whether an uncertain tax position has met those thresholds will continue to require significant judgment by management. If the ultimate resolution of tax uncertainties is different from what is currently estimated, a material impact on income tax expense could result.

Our provision for income taxes is subject to volatility and could be adversely impacted by changes in earnings or tax laws and regulations in various jurisdictions. We are subject to the continuous examination of our income tax returns by the Internal Revenue Service and other tax authorities. We regularly assess the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. There can be no assurance that the outcomes from these continuous examinations will not have an adverse effect on our operating results and financial condition. To the extent that the final tax outcome of these matters is different than the amounts recorded, such differences will impact the provision for income taxes in the period in which such determination is made. The provision for income taxes includes the impact of changes to reserves, as well as the related net interest and penalties.

Share-based compensation expense

We maintain an equity-settled, share-based compensation plan to grant restricted share units and stock options. We recognize share-based compensation expense based on the estimated fair value of the awards, using the accelerated attribution method. The fair value of restricted share units is based on the fair value of the Company's common share on the date of grant. For restricted stock awards subject to market conditions, the fair value of each restricted stock award is estimated at the date of grant using the Monte-Carol pricing model. Share-based compensation expense is significant to the consolidated financial statements and is calculated using our best estimates, which involve inherent uncertainties and the application of management's judgment. The Black-Scholes option valuation model requires the input of subjective assumptions, including the expected term and stock price volatility. In addition, judgment is also required in estimating the number of stock-based

awards that are expected to be forfeited. Forfeitures are estimated based on historical experience at the time of grant. Changes in estimated forfeitures are recognized in the period of change and impact the amount of stock compensation expenses to be recognized in future periods, which could be material if actual results differ significantly from estimates.

Estimated Useful Lives for Property, Plant and Equipment and Intangible Assets

Property, plant and equipment are recorded at cost and are depreciated using the straight-line method over estimated useful lives of the assets. Patents and exclusive technology rights purchased from third parties are amortized on a straight-line basis over their estimated useful lives of three to seven years. Trade name and customer relationships acquired in a business combination are recognized at fair values at the acquisition date and amortized on a straight-line basis over their estimated economic lives of three years and four years, respectively.

Recently Issued Accounting Pronouncements

See Note 1 of the Notes to the consolidated financial statements under Item 15 in this Annual Report on Form 10-K for a full description of recent accounting pronouncements, including the expected dates of adoption and estimated effects on results of operations and financial condition.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Foreign currency risk

We and our principal subsidiaries use U.S. dollars as our functional currency because most of the transactions are conducted and settled in U.S. dollars. All of our revenue and a significant portion of our operating expenses are denominated in U.S. dollars. The functional currency for our in-house packaging and testing facilities in China is U.S. dollars and a significant portion of our capital expenditures are denominated in U.S. dollars. However, foreign currencies are required to fund our overseas operations, primarily in Taiwan and China. Operating expenses of overseas operations are denominated in their respective local currencies. In order to minimize exposure to foreign currencies, we maintained cash and cash equivalent balances in foreign currencies, including Chinese Yuan (“RMB”) as operating funds for our foreign operating expenses. For our subsidiaries which use the local currency as the functional currency, including the JV Company, the results and financial position are translated into U.S. dollar using exchange rates at balance sheet dates for assets and liabilities and using average exchange rates for income and expenses items. The resulting translation differences are presented as a separate component of accumulated other comprehensive income (loss) and noncontrolling interest in the consolidated statements of equity. Our management believes that our exposure to foreign currency translation risk is not significant based on a 10% sensitivity analysis in foreign currencies due to the fact that the net assets denominated in foreign currencies pertaining to foreign operations, principally in Taiwan and China, are not significant to our consolidated net assets.

Interest rate risk

Our interest-bearing assets comprise mainly interest-bearing short-term bank balances. We manage our interest rate risk by placing such balances in instruments with various short-term maturities. Borrowings expose us to interest rate risk. Borrowings are drawn down after due consideration of market conditions and expectation of future interest rate movements. As of June 30, 2019, we had \$69.3 million outstanding under our debts loan with the Bank and \$61.2 million outstanding under our capital leases, which were subject to fluctuations in interest rates. For the year ended June 30, 2019, a hypothetical 10% increase in the interest rate could result in \$0.6 million additional annual interest expense. The hypothetical assumptions made above will be different from what actually occurs in the future. Furthermore, the computations do not anticipate actions that may be taken by our management should the hypothetical market changes actually occur over time. As a result, actual impacts on our results of operations in the future will differ from those quantified above.

Commodity Price Risk

We are subject to risk from fluctuating market prices of certain commodity raw materials, particularly gold, that are used in our manufacturing process and incorporated into our end products. Supplies for such commodities may from time-to-time become restricted, or general market factors and conditions may affect the pricing of such commodities. Over the past few years, the price of gold increased significantly and certain of our supply chain partners assess surcharges to compensate for the rising commodity prices. We have been converting some of our products to use copper wires instead of gold wires. Our results of operations may be materially and adversely affected if we have difficulty obtaining these raw materials, the quality of available raw materials deteriorates, or there are significant price changes for these raw materials. For periods in which the prices of these raw materials are rising, we may be unable to pass on the increased cost to our customers which would result in decreased margins for the products in which they are used and could have a material adverse effect on our net earnings. We also may need to record losses for adverse purchase commitments for these materials in periods of declining prices. We do not enter into formal hedging arrangements to mitigate against commodity risk. We estimate that a 10% increase or decrease in the costs of raw materials subject to commodity price risk, such as gold, would decrease or increase our current year's net earnings by \$0.4 million, assuming that such changes in our costs have no impact on the selling prices of our products and that we have no pending commitments to purchase metals at fixed prices.

Item 8. Financial Statements and Supplementary Data

See Part IV, Item 15 "Exhibits and Financial Statement Schedules" for our consolidated financial statements and the notes and schedules thereto filed as part of this annual report.

Selected Quarterly Consolidated Financial Data

The following tables present our unaudited consolidated financial information for each of the eight quarters in the period ended June 30, 2019. Net income (loss) per share for the four quarters of each fiscal year may not sum to the total for the fiscal year because of difference in the number of shares outstanding during each period. The operating results for any quarter should not be relied upon as necessarily indicative of results for any future period. We expect our quarterly operating results to fluctuate in future periods due to a variety of reasons, including those discussed in Item 1A. "Risk Factors."

	Quarter Ended			
	June 30, 2019	March 31, 2019	December 31, 2018	September 30, 2018
	(in thousands, except per share data)			
Revenue	\$ 111,856	\$ 109,067	\$ 114,925	\$ 115,072
Gross profit	\$ 27,636	\$ 25,629	\$ 29,502	\$ 32,611
Operating income (loss)	\$ (958)	\$ (3,735)	\$ (3,202)	\$ 875
Net loss including noncontrolling interest	\$ (2,235)	\$ (5,955)	\$ (5,535)	\$ (913)
Net loss attributable to noncontrolling interest	\$ (4,780)	\$ (4,400)	\$ (3,990)	\$ (3,329)
Net income (loss) attributable to Alpha and Omega Semiconductor Limited	\$ 2,545	\$ (1,555)	\$ (1,545)	\$ 2,416
Net income (loss) per common share attributable to Alpha and Omega Semiconductor Limited				
Basic	\$ 0.10	\$ (0.06)	\$ (0.06)	\$ 0.10
Diluted	\$ 0.10	\$ (0.06)	\$ (0.06)	\$ 0.10

	Quarter Ended			
	June 30, 2018	March 31, 2018	December 31, 2017	September 30, 2017
	(in thousands, except per share data)			
Revenue	\$ 109,897	\$ 102,902	\$ 103,896	\$ 104,858
Gross profit	\$ 29,183	\$ 27,133	\$ 28,082	\$ 27,530
Operating income (loss)	\$ (75)	\$ 681	\$ 3,224	\$ 4,590
Net income (loss) including noncontrolling interest	\$ (3,025)	\$ (488)	\$ 5,122	\$ 3,339
Net loss attributable to noncontrolling interest	\$ (4,046)	\$ (2,139)	\$ (1,669)	\$ (1,461)
Net income attributable to Alpha and Omega Semiconductor Limited	\$ 1,021	\$ 1,651	\$ 6,791	\$ 4,800
Net income per common share attributable to Alpha and Omega Semiconductor Limited				
Basic	\$ 0.04	\$ 0.07	\$ 0.28	\$ 0.20
Diluted	\$ 0.04	\$ 0.07	\$ 0.27	\$ 0.19

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None

Item 9A. Controls and Procedures**Evaluation of Disclosure Controls and Procedures**

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, (the “Exchange Act”)), as of the end of the period covered by this report. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures as of June 30, 2019 have been designed and are functioning effectively to provide reasonable assurance that the information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

Management’s Annual Report on Internal Control over Financial Reporting

Our management, including our Chief Executive Officer and Chief Financial Officer, is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act). Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our financial statements for external purposes in accordance with generally accepted accounting principles, and includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (2) provide reasonable assurance that transactions are recorded to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are made only in accordance with authorizations of our management and directors; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our financial statements.

Our management conducted an assessment of the effectiveness of our internal control over financial reporting based on the criteria set forth in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), as amended from time to time. Based on the assessment, our management has concluded that our internal control over financial reporting was effective as of June 30, 2019 to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with U.S. GAAP.

The effectiveness of the Company’s internal control over financial reporting as of June 30, 2019 has been audited by BDO, USA LLP, an independent registered public accounting firm, as stated in their report, included on the following page.

Limitation on the Effectiveness of Controls

While our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance that their respective objectives will be met, we do not expect that our disclosure controls and procedures or our internal control over financial reporting are or will be capable of preventing or detecting all errors and all fraud. Any control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system’s objectives will be met.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the quarter ended June 30, 2019 that have materially affected or are reasonably likely to materially affect, our internal control over financial reporting.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Shareholders and Board of Directors
Alpha and Omega Semiconductor Limited
Sunnyvale, California

Opinion on Internal Control over Financial Reporting

We have audited Alpha and Omega Semiconductor Limited (a Bermuda corporation) and subsidiaries (the “Company”) internal control over financial reporting as of June 30, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (the “COSO criteria”). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of June 30, 2019, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (“PCAOB”), the consolidated balance sheet of the Company as of June 30, 2019, the related consolidated statement of operations, comprehensive income (loss), equity, and cash flow for the year ended June 30, 2019, and the related notes and schedules, and our report dated August 23, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

The Company’s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Item 9A, Management’s Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit of internal control over financial reporting in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ BDO USA, LLP

San Jose, California

August 23, 2019

Item 9B. Other Information

None

PART III

Certain information required by Part III is omitted from this Annual Report on Form 10-K because we intend to file our definitive proxy statement for our next annual general meeting of shareholders, pursuant to Regulation 14A of the Securities Exchange Act of 1934, as amended (the "2019 Proxy Statement"), no later than 120 days after the end of fiscal year 2019, and certain information to be included in the 2019 Proxy Statement is incorporated herein by reference.

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item concerning our directors, executive officers, Section 16 compliance and corporate governance matters is contained in part under the caption "Business - Executive Officers" in Part I of this report, and the remainder is incorporated by reference to the information set forth in the sections titled "Election of Directors" and "Section 16(a) Beneficial Ownership Reporting Compliance" in the 2019 Proxy Statement.

Item 11. Executive Compensation

The information required by this item regarding executive compensation is incorporated by reference from the information set forth under the captions "Compensation of Non-Employee Directors" and "Executive Compensation," in the 2019 Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item regarding security ownership of certain beneficial owners and management is incorporated by reference to the information set forth in the section titled "Security Ownership of Certain Beneficial Owners and Management" and "Equity Compensation Plan Information" in the 2019 Proxy Statement.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item regarding related party transactions and director independence is incorporated by reference from the information set forth under the captions "Board of Directors and Committees of the Board", and "Related Party Transactions" in the 2019 Proxy Statement.

Item 14. Principal Accounting Fees and Services

The information required by this item regarding principal accountant fees and services is incorporated by reference from the information set forth under the caption "Principal Accounting Fees and Services" in the 2019 Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this annual report:

(1) Consolidated Financial Statements. The index to the consolidated financial statements is below.

<u>Item</u>	<u>Page</u>
<u>Report of Independent Registered Public Accounting Firm (BDO USA, LLP)</u>	<u>64</u>
<u>Report of Independent Registered Public Accounting Firm (Grant Thornton LLP)</u>	<u>65</u>
<u>Consolidated Balance Sheets</u>	<u>66</u>
<u>Consolidated Statements of Operations</u>	<u>67</u>
<u>Consolidated Statements of Comprehensive Income (Loss)</u>	<u>68</u>
<u>Consolidated Statements of Equity</u>	<u>69</u>
<u>Consolidated Statements of Cash Flows</u>	<u>71</u>
<u>Notes to the Consolidated Financial Statements</u>	<u>73</u>

(2) Financial Statement Schedules.

<u>Schedule I - Condensed Financial Information of Registrant</u>	<u>105</u>
<u>Schedule II - Valuation and Qualifying accounts</u>	<u>110</u>

(b) Exhibits

The exhibits listed on the accompanying Index to Exhibits in Item 15(b) below are filed as part of, or hereby incorporated by reference into, this Annual Report on Form 10-K.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Shareholders and Board of Directors
Alpha and Omega Semiconductor Limited
Sunnyvale, California

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheet of Alpha and Omega Semiconductor Limited (a Bermuda corporation) and subsidiaries (the “Company”) as of June 30, 2019, the related consolidated statement of operations, comprehensive income (loss), equity, and cash flow for the year ended June 30, 2019, and the related notes and financial statement schedules listed in the accompanying index (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at June 30, 2019, and the results of its operations and its cash flow for the year ended June 30, 2019, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (“PCAOB”), the Company's internal control over financial reporting as of June 30, 2019, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”) and our report dated August 23, 2019 expressed an unqualified opinion thereon.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company has changed its accounting method for recognizing revenue from contracts with customers in fiscal year 2019 due to the adoption of Topic 606: Revenue from Contracts with Customers.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ BDO USA, LLP
We have served as the Company's auditor since 2018.
San Jose, California

August 23, 2019

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Shareholders

Alpha and Omega Semiconductor Limited

Opinion on the financial statements

We have audited the accompanying consolidated balance sheet of Alpha and Omega Semiconductor Limited (a Bermuda corporation) and subsidiaries (the “Company”) as of June 30, 2018, the related consolidated statements of comprehensive operations, comprehensive income (loss), equity, and cash flows for each of the two years in the period ended June 30, 2018, and the related notes and schedules (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of June 30, 2018, and the results of its operations and its cash flows for each of the two years in the period ended June 30, 2018, in conformity with accounting principles generally accepted in the United States of America.

Basis for opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ GRANT THORNTON LLP

We served as the Company’s auditor from 2012 to 2018.

San Francisco, California

August 23, 2018

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONSOLIDATED BALANCE SHEETS
(in thousands except par value per share)

	June 30,	
	2019	2018
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 121,893	\$ 131,535
Restricted cash	364	189
Accounts receivable, net	24,296	33,755
Inventories	111,643	90,182
Other current assets	37,102	29,551
Total current assets	<u>295,298</u>	<u>285,212</u>
Property, plant and equipment, net	409,737	331,656
Intangible assets, net	16,882	16,591
Deferred income tax assets	4,822	4,892
Restricted cash - long-term	2,038	—
Other long-term assets	10,617	28,698
Total assets	<u>\$ 739,394</u>	<u>\$ 667,049</u>
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	\$ 94,384	\$ 92,661
Accrued liabilities	44,075	49,841
Income taxes payable	1,541	2,211
Short-term debt	26,609	3,811
Deferred margin	—	1,665
Capital leases	11,355	4,491
Total current liabilities	<u>177,964</u>	<u>154,680</u>
Long-term debt	59,380	26,786
Income taxes payable - long-term	993	924
Deferred income tax liabilities	466	713
Capital leases - long-term	43,381	56,791
Other long-term liabilities	13,921	993
Total liabilities	<u>296,105</u>	<u>240,887</u>
Commitments and contingencies (Note 13)		
Equity:		
Preferred shares, par value \$0.002 per share:		
Authorized: 10,000 shares; issued and outstanding: none at June 30, 2019 and 2018	—	—
Common shares, par value \$0.002 per share:		
Authorized: 100,000 shares; issued and outstanding: 31,163 shares and 24,517 shares, respectively at June 30, 2019 and 30,400 shares and 23,860 shares, respectively at June 30, 2018	62	61
Treasury shares at cost; 6,646 shares at June 30, 2019 and 6,540 shares at June 30, 2018	(66,240)	(64,790)
Additional paid-in capital	234,410	220,244
Accumulated other comprehensive income (loss)	(2,693)	440
Retained earnings	125,485	122,639
Total Alpha and Omega Semiconductor Limited shareholders' equity	<u>291,024</u>	<u>278,594</u>
Noncontrolling interest	152,265	147,568
Total equity	<u>443,289</u>	<u>426,162</u>
Total liabilities and equity	<u>\$ 739,394</u>	<u>\$ 667,049</u>

The accompanying notes are an integral part of these consolidated financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)

	Year Ended June 30,		
	2019	2018	2017
Revenue	\$ 450,920	\$ 421,553	\$ 383,337
Cost of goods sold	335,542	309,625	291,516
Gross profit	115,378	111,928	91,821
Operating expenses:			
Research and development	46,431	37,344	29,835
Selling, general and administrative	75,967	66,164	48,842
Total operating expenses	122,398	103,508	78,677
Operating income (loss)	(7,020)	8,420	13,144
Interest income and other income (loss), net	543	(1,943)	(141)
Interest expense	(6,905)	(821)	(91)
Net income (loss) before income taxes	(13,382)	5,656	12,912
Income tax expense	1,256	708	3,652
Net income (loss) including noncontrolling interest	(14,638)	4,948	9,260
Net loss attributable to noncontrolling interest	(16,499)	(9,315)	(4,569)
Net income attributable to Alpha and Omega Semiconductor Limited	\$ 1,861	\$ 14,263	\$ 13,829
Net income per common share attributable to Alpha and Omega Semiconductor Limited			
Basic	\$ 0.08	\$ 0.60	\$ 0.59
Diluted	\$ 0.08	\$ 0.57	\$ 0.56
Weighted average number of common share attributable to Alpha and Omega Semiconductor Limited used to compute net income per share:			
Basic	24,063	23,901	23,526
Diluted	24,698	24,844	24,826

The accompanying notes are an integral part of these consolidated financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(in thousands)

	Year ended June 30,		
	2019	2018	2017
Net income (loss) including noncontrolling interest	\$ (14,638)	\$ 4,948	\$ 9,260
Other comprehensive income (loss), net of tax			
Foreign currency translation adjustment	(5,937)	244	(1,012)
Comprehensive income (loss)	(20,575)	5,192	8,248
Noncontrolling interest	(19,303)	(9,205)	(5,118)
Comprehensive income (loss) attributable to Alpha and Omega Semiconductor Limited	\$ (1,272)	\$ 14,397	\$ 13,366

The accompanying notes are an integral part of these consolidated financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONSOLIDATED STATEMENTS OF EQUITY
(in thousands)

	Convertible Preferred Shares		Common Shares		Treasury Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (loss)	Retained Earnings	Total AOS Shareholders' Equity	Noncontrolling Interest	Total Equity
	Shares	Amount	Shares	Amount	Shares	Amount						
Balance, June 30, 2016	—	\$ —	28,405	\$ 57	(5,651)	\$(50,199)	\$ 191,444	\$ 769	\$ 100,071	\$ 242,142	\$ (103)	\$ 242,039
Exercise of common stock options and release of RSUs	—	—	1,015	2	—	—	7,788	—	—	7,790	—	7,790
Reissuance of treasury stock upon exercise of common stock options and release of RSUs	—	—	—	—	43	363	—	—	9	372	—	372
Withholding tax on restricted stock units	—	—	(112)	—	—	—	(2,071)	—	—	(2,071)	—	(2,071)
Issuance of common shares under Employee Stock Purchase Plan	—	—	292	—	—	—	2,537	—	—	2,537	—	2,537
Share-based compensation expense	—	—	—	—	—	—	6,634	—	—	6,634	—	6,634
Net income (loss) including noncontrolling interest	—	—	—	—	—	—	—	—	13,829	13,829	(4,569)	9,260
Cumulative translation adjustment	—	—	—	—	—	—	—	(463)	—	(463)	(549)	(1,012)
Contributions by noncontrolling interest	—	—	—	—	—	—	—	—	—	—	33,000	33,000
Balance, June 30, 2017	—	—	29,600	59	(5,608)	(49,836)	206,332	306	113,909	270,770	27,779	298,549
Exercise of common stock options and release of RSUs	—	—	645	1	—	—	1,543	—	—	1,544	—	1,544
Reissuance of treasury stock upon exercise of common stock options and release of RSUs	—	—	—	—	18	144	—	—	(53)	91	—	91
Withholding tax on restricted stock units	—	—	(145)	—	—	—	(2,363)	—	—	(2,363)	—	(2,363)
Issuance of common shares under Employee Stock Purchase Plan	—	—	300	1	—	—	3,320	—	—	3,321	—	3,321
Repurchase of common shares under shares repurchase program	—	—	—	—	(950)	(15,098)	—	—	—	(15,098)	—	(15,098)
Share-based compensation expense	—	—	—	—	—	—	11,412	—	—	11,412	—	11,412
Net income (loss) including noncontrolling interest	—	—	—	—	—	—	—	—	14,263	14,263	(9,315)	4,948
Deferred tax asset related to ASU 2016-06 adoption	—	—	—	—	—	—	—	—	(5,480)	(5,480)	—	(5,480)
Cumulative translation adjustment	—	—	—	—	—	—	—	134	—	134	110	244
Contributions by noncontrolling interest	—	—	—	—	—	—	—	—	—	—	128,994	128,994
Balance, June 30, 2018	—	—	30,400	61	(6,540)	(64,790)	220,244	440	122,639	278,594	147,568	426,162
Exercise of common stock options and release of RSUs	—	—	616	1	—	—	109	—	—	110	—	110
Reissuance of treasury stock upon exercise of common stock options and release of RSUs	—	—	—	—	6	51	—	—	(51)	—	—	—
Withholding tax on restricted stock units	—	—	(182)	—	—	—	(2,028)	—	—	(2,028)	—	(2,028)
Issuance of common shares under Employee Stock Purchase Plan	—	—	329	—	—	—	2,908	—	—	2,908	—	2,908
Repurchase of common shares under share repurchase program	—	—	—	—	(112)	(1,501)	—	—	—	(1,501)	—	(1,501)
Share-based compensation expense	—	—	—	—	—	—	13,177	—	—	13,177	—	13,177
Net income (loss) including noncontrolling interest	—	—	—	—	—	—	—	—	1,861	1,861	(16,499)	(14,638)

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONSOLIDATED STATEMENTS OF EQUITY
(in thousands)

Impact on retained earnings related to ASC 606 adoption	—	—	—	—	—	—	—	—	1,036	1,036	—	1,036
Cumulative translation adjustment	—	—	—	—	—	—	—	(3,133)	—	(3,133)	(2,804)	(5,937)
Contributions by noncontrolling interest	—	—	—	—	—	—	—	—	—	—	24,000	24,000
Balance, June 30, 2019	—	\$ —	31,163	\$ 62	(6,646)	\$(66,240)	\$ 234,410	\$ (2,693)	\$ 125,485	\$ 291,024	\$ 152,265	\$ 443,289

The accompanying notes are an integral part of these consolidated financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended June 30,		
	2019	2018	2017
Cash flows from operating activities			
Net income (loss) including noncontrolling interest	\$ (14,638)	\$ 4,948	\$ 9,260
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Depreciation and amortization	32,038	29,419	27,188
Share-based compensation expense	13,177	11,412	6,634
Deferred income taxes, net	(452)	(2,244)	7,224
(Gain) loss on disposal of property and equipment	21	45	(425)
Changes in assets and liabilities:			
Accounts receivable	9,237	(5,345)	(1,816)
Inventories	(21,461)	(13,928)	(7,406)
Other current and long-term assets	(1,887)	(34,625)	(4,584)
Accounts payable	6,410	4,872	4,515
Income taxes payable	(601)	466	(1,264)
Accrued and other liabilities	9,577	8,460	3,322
Net cash provided by operating activities	<u>31,421</u>	<u>3,480</u>	<u>42,648</u>
Cash flows from investing activities			
Purchases of property and equipment excluding JV Company	(36,002)	(49,390)	(30,799)
Purchases of property and equipment in JV Company	(76,049)	(128,359)	(16,052)
Purchases of land use rights in JV Company	—	—	(8,737)
Purchases of intangible assets	(405)	(16,384)	—
Proceeds from sale of property and equipment	21	6	603
Investment in a privately held company	—	—	(600)
Net cash used in investing activities	<u>(112,435)</u>	<u>(194,127)</u>	<u>(55,585)</u>
Cash flows from financing activities			
Proceeds from investment by noncontrolling interest	24,000	128,994	33,000
Withholding tax on restricted stock units	(2,028)	(2,363)	(2,071)
Proceeds from exercise of stock options and ESPP	3,018	4,956	10,699
Proceeds from borrowings	77,949	30,950	—
Proceeds from financing lease	—	60,416	—
Payments for repurchase of common shares	(1,501)	(15,098)	—
Repayments of borrowings	(21,947)	(74)	—
Principal payments on capital leases	(4,392)	(828)	(819)
Net cash provided by financing activities	<u>75,099</u>	<u>206,953</u>	<u>40,809</u>
Effect of exchange rate changes on cash, cash equivalents and restricted cash	<u>(1,514)</u>	<u>(511)</u>	<u>95</u>
Net increase (decrease) in cash, cash equivalents and restricted cash	<u>(7,429)</u>	<u>15,795</u>	<u>27,967</u>
Cash, cash equivalents and restricted cash at beginning of year	<u>131,724</u>	<u>115,929</u>	<u>87,962</u>
Cash, cash equivalents and restricted cash at end of year	<u><u>\$ 124,295</u></u>	<u><u>\$ 131,724</u></u>	<u><u>\$ 115,929</u></u>

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended June 30,		
	2019	2018	2017
Supplemental disclosures of cash flow information:			
Cash paid for interest	\$ 6,582	\$ 700	\$ 70
Cash paid for income taxes	\$ 1,841	\$ 2,985	\$ 2,550
Supplemental disclosures of non-cash investing and financing information:			
Property and equipment purchased but not yet paid	\$ 58,877	\$ 68,156	\$ 23,155
Reissuance of treasury stock	\$ 51	\$ 53	\$ (9)

The accompanying notes are an integral part of these consolidated financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1. The Company and Significant Accounting Policies

The Company

Alpha and Omega Semiconductor Limited and its subsidiaries (the “Company”, “AOS”, “we” or “us”) design, develop and supply a broad range of power semiconductors. The Company's portfolio of products targets high-volume applications, including personal computers, flat panel TVs, LED lighting, smart phones, battery packs, quick chargers, home appliances, consumer and industrial motor controls and power supplies for TVs, computers, servers and telecommunications equipment. The Company conducts its operations primarily in the United States of America (“USA”), Hong Kong, China, and South Korea.

Basis of Preparation

The consolidated financial statements include the accounts of the Company, its wholly-owned subsidiaries, and a subsidiary in which it has a controlling interest after elimination of inter-company balances and transactions. The consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (“U.S. GAAP”).

Use of Estimates

The preparation of our consolidated financial statements in conformity with U.S. GAAP requires the Company to make estimates, judgments and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses. To the extent there are material differences between these estimates and actual results, the Company's consolidated financial statements will be affected. On an ongoing basis, the Company evaluates the estimates, judgments and assumptions including those related to stock rotation returns, price adjustments, allowance for doubtful accounts, inventory reserves, warranty accrual, income taxes, share-based compensation, and useful lives for property, plant and equipment and intangible assets.

Foreign Currency Transactions and Translation

Most of the Company's principal subsidiaries use U.S. dollars as their functional currency because their transactions are primarily conducted and settled in U.S. dollars. All of their revenues and a significant portion of their operating expenses are denominated in U.S. dollars. The functional currencies for the Company's in-house packaging and testing facilities in China are U.S. dollars, and a majority of their capital expenditures are denominated in U.S. dollars. Foreign currency transactions are translated into the functional currencies using the exchange rates prevailing at the dates of the transactions. Foreign exchange gains and losses, resulting from the settlement of such transactions and from the re-measurement of monetary assets and liabilities denominated in foreign currencies using exchange rates at balance sheet date and non-monetary assets and liabilities using historical exchange rates, are recognized in the consolidated statements of operations.

For the Company's subsidiaries which use the local currency as their functional currency, including a Joint Venture Company (“JV Company”), their results and financial position are translated into U.S. dollars using exchange rates at balance sheet dates for assets and liabilities and using average exchange rates for income and expenses items. The resulting translation differences are presented as a separate component of accumulated other comprehensive income (loss) and noncontrolling interest in the consolidated statements of equity.

Joint Venture

On March 29, 2016, the Company entered into a joint venture contract (the “JV Agreement”) with two investment funds owned by the Municipality of Chongqing (the “Chongqing Funds”), pursuant to which the Company and the Chongqing Funds formed a joint venture, (the “JV Company”), for the purpose of constructing and operating a power semiconductor packaging, testing and 12-inch wafer fabrication facility in the Liangjiang New Area of Chongqing, China (the “JV Transaction”). As of June 30, 2019, the Company owns 51%, and the Chongqing Funds own 49%, of the equity interest in the JV Company. The Joint Venture is accounted under the provisions of the consolidation guidance since the Company has controlling financial interest. If both parties agree that the termination of the JV Company is the best interest of each party or the JV Company is bankrupt or insolvent where either party may terminate early, after paying the debts of the JV Company, the remaining assets of the JV Company shall be paid to the Chongqing Funds to cover the principal of its total paid-in contributions plus interest at

10% simple annual rate prior to distributing the balance of the JV Company's assets to the Company. The JV Company started its assembly and testing production in the September quarter of 2018 and continued its ramp up during the fiscal year 2019. The Company also completed installation of equipment and trial production at the 12-inch wafer fabrication facility in fiscal year 2019. In July 2019, the Company commenced limited mass production at the 12-inch wafer fabrication facility.

As part of the JV Transaction, the JV Company entered into an Engineering, Procurement and Construction Contract (the "EPC Contract") with The IT Electronics Eleventh Design & Research Institute Scientific and Technological Engineering Corporation Limited (the "Contractor"), effective as of January 10, 2017 (the "Effective Date"), pursuant which the Contractor was engaged to construct the manufacturing facility contemplated under the JV Agreement. The total price payable under the EPC Contract is Chinese Renminbi (RMB) 540.0 million, or approximately \$78.0 million based on the currency exchange rate between RMB and U.S. Dollar on the Effective Date. As of June 30, 2019, the JV Company paid approximately \$69.9 million (RMB 480.0 million), and expects to pay the remaining of \$8.7 million (RMB 60.0 million) in the near term.

Restricted cash

As a condition of the loan arrangements, the Company is required to keep a compensating balance at the issuing bank (see Note 6). The balance has been excluded from the Company's cash and cash equivalents balance and is classified as restricted cash - long-term in the Company's consolidated balance sheets. As of June 30, 2019 and 2018, the amount of restricted cash was \$2.0 million and \$0, respectively.

Cash and Cash Equivalents

Cash and cash equivalents primarily consist of cash on hand and short-term bank deposits with original maturities of three months or less. Cash equivalents are highly liquid investments with stated maturities of three months or less as of the dates of purchase. The carrying amounts reported for cash and cash equivalents are considered to approximate fair values based upon their short maturities.

Cash and cash equivalents are maintained with reputable major financial institutions. If, due to current economic conditions or other factors, one or more of the financial institutions with which the Company maintains deposits fails, the Company's cash and cash equivalents may be at risk. Deposits with these banks may exceed the amount of insurance provided on such deposits; however, these deposits typically may be redeemed upon demand and, therefore, bear minimal risk.

Accounts Receivable

The allowance for doubtful accounts is based on assessment of the collectability of accounts receivable from customers. The Company reviews the allowance by considering factors such as historical collection experience, credit quality, age of the accounts receivable balances and current economic conditions that may affect a customer's ability to pay. The Company writes off a receivable and charges against its recorded allowance when it has exhausted its collection efforts without success.

Fair Value Measurements

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The fair value hierarchy is based on three levels of inputs, of which the first two are considered observable and the last unobservable, that may be used to measure fair value, which are the following:

- Level 1 - Quoted prices in active markets for identical assets or liabilities.
- Level 2 - Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Fair Value of Financial Instruments

The fair value of cash equivalents is based on observable market prices and have been categorized in Level 1 in the fair value hierarchy. Cash equivalents consist primarily of short term bank deposits. The carrying values of financial instruments

such as cash and cash equivalents, accounts receivable and accounts payable approximate their carrying values due to their short-term maturities. The carrying value of the company's debt is considered a reasonable estimate of fair value which is estimated by considering the current rates available to the Company for debt of the same remaining maturities, structure and terms of the debts.

Inventories

The Company carries inventories at the lower of cost (determined on a first-in, first-out basis) or net realizable value. Cost includes semiconductor wafer and raw materials, labor, depreciation expenses and other manufacturing expenses and overhead, and packaging and testing fees paid to third parties if subcontractors are used. Inventory reserves are made based on the Company's periodic review of inventory quantities on hand as compared with its sales forecasts, historical usage, aging of inventories, production yield levels and current product selling prices. If actual market conditions are less favorable than those forecasted by management, additional future inventory write-downs may be required that could adversely affect the Company's operating results. Inventory reserves once established are not reversed until the related inventory has been sold or scrapped.

Property, Plant and Equipment

Property, plant and equipment are stated at historical cost less accumulated depreciation. Historical cost includes expenditures that are directly attributable to the acquisition of the items and the costs incurred to make the assets ready for their intended use.

Depreciation is provided for on a straight-line basis over the estimated useful lives of the related assets as follows:

Building	20 to 30 years
Manufacturing machinery and equipment	5 to 15 years
Equipment and tooling	5 years
Computer hardware and software	3 to 5 years
Office furniture and equipment	5 years
Leasehold and building improvements	2 to 20 years
Land use rights	50 years

There is no private land ownership in China. Individuals and companies are permitted to acquire land use rights for specific purpose. In March 2017, the JV Company received the necessary land use right certificate from the PRC government. The land use rights will expire on November 30, 2066.

Equipment and construction in progress represent equipment received but the necessary installation has not been fully performed or building construction and leasehold improvements have been started but not yet completed. Equipment and construction in progress are stated at cost and transferred to respective asset class when fully completed and ready for their intended use.

Internal-use software development costs are capitalized to the extent that the costs are directly associated with the development of identifiable and unique software products controlled by the Company that will probably generate economic benefits beyond one year. Costs incurred during the application development stage are required to be capitalized. The application development stage is characterized by software design and configuration activities, coding, testing and installation. Training costs and maintenance are expensed as incurred, while upgrades and enhancements are capitalized if it is probable that such expenditures will result in additional functionality. Costs include employee costs incurred and fees paid to outside consultants for the software development and implementation. Internal developed software is amortized over its estimated useful life of three to five years starting from the date when it is ready for its intended use.

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognized as selling, general and administrative expenses in the consolidated statements of operations. Costs of maintenance and repairs that do not improve or extend the lives of the respective assets are expensed as incurred.

Intangible Assets

Intangible assets are stated at cost less accumulated amortization. Intangible assets primarily include patents and exclusive technology rights that the Company entered a license agreement with STMicroelectronics International N.V.

("STMicro"). The Company begins amortizing such license fees when the technology has met its qualification and is ready for intended use in production.

The Company evaluates its finite-lived intangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset group to future undiscounted net cash flows expected to be generated by the asset group. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. Assets to be disposed of are reported at the lower of the carrying amount and fair value less costs to sell. There was no indication of intangible assets impairment for the fiscal year of 2019, 2018 and 2017.

Impairment of Long-Lived Assets

The Company evaluates the carrying value of its long-lived assets whenever events or changes in circumstances indicate that the carrying value of the asset may be impaired. An impairment loss is recognized when estimated future cash flows expected to result from the use of the asset, including disposition, are less than the carrying value of the asset. Such an impairment charge would be measured as the excess of the carrying value of the asset over its fair value.

There was no impairment of long-lived assets for the fiscal year of 2019, 2018 and 2017.

Revenue Recognition

As a result of the adoption of the new revenue standard on July 1, 2018, at the beginning of the first quarter of fiscal year 2019, the Company determines revenue recognition through the following steps: (1) identification of the contract with a customer; (2) identification of the performance obligations in the contract; (3) determination of the transaction price; (4) allocation of the transaction price to the performance obligations in the contract; and (5) recognition of revenue when, or as, a performance obligation is satisfied. The Company recognizes revenue when product is shipped to the customer, net of estimated stock rotation returns and price adjustments that it expects to provide to certain distributors.

The Company sells its products primarily to distributors, who in turn sell the products globally to various end customers. The Company allows stock rotation returns from certain distributors. Stock rotation returns are governed by contract and are limited to a specified percentage of the monetary value of products purchased by distributors during a specified period. The Company records an allowance for stock rotation returns based on historical returns and individual distributor agreements. The Company also provides special pricing to certain distributors, primarily based on volume, to encourage resale of the Company's products. Allowance for price adjustments is recorded against accounts receivable and the provision for stock rotation rights is included in accrued liabilities on the consolidated balance sheets.

Packaging and testing services revenue is recognized upon shipment of serviced products to the customer.

Product Warranty

The Company provides a standard one-year warranty for the products from the date of purchase by the end customers. The Company accrues for estimated warranty costs at the time revenue is recognized. The Company's warranty obligation is affected by product failure rates, labor and material costs for replacing defective parts, related freight costs for failed parts and other quality assurance costs. The Company monitors its product returns for warranty claims and maintains warranty reserves based on historical experiences and anticipated warranty claims known at the time of estimation.

Shipping and Handling Costs

Shipping and handling costs are included in cost of goods sold.

Research and Development

Research and development costs are expensed as incurred.

Provision for Income Taxes

Income tax expense or benefit is based on income or loss before taxes. Deferred tax assets and liabilities are recognized principally for the expected tax consequences of temporary differences between the tax basis of assets and liabilities and their reported amounts.

The Company is subject to income taxes in a number of jurisdictions. Significant judgment is required in determining the worldwide provision for income taxes. There are many transactions and calculations for which the ultimate tax determination is uncertain during the ordinary course of business. The Company establishes accruals for certain tax contingencies based on estimates of whether additional taxes may be due. While the final tax outcome of these matters may differ from the amounts that were initially recorded, such differences will impact the income tax and deferred tax provisions in the period in which such determination is made.

Significant management judgment is also required in determining whether deferred tax assets will be realized in full or in part. When it is more likely than not that all or some portion of specific deferred tax assets such as net operating losses or research and experimentation tax credit carryforwards will not be realized, a valuation allowance must be established for the amount of the deferred tax assets that cannot be realized. The Company considers all available positive and negative evidence on a jurisdiction-by-jurisdiction basis when assessing whether it is more likely than not that deferred tax assets are recoverable. The Company considers evidence such as our past operating results, the existence of cumulative losses in recent years and our forecast of future taxable income.

The Financial Accounting Standards Board, or FASB, issued guidance which clarifies the accounting for income taxes by prescribing a minimum probability threshold that a tax position must meet before a financial statement benefit is recognized. The minimum threshold is defined as a tax position that is more likely than not to be sustained upon examination by the applicable taxing authority, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The tax benefit to be recognized is measured as the largest amount of benefit that is greater than fifty percent likely to be realized upon ultimate settlement. Although the guidance on the accounting for uncertainty in income taxes prescribes the use of a recognition and measurement model, the determination of whether an uncertain tax position has met those thresholds will continue to require significant judgment by management. If the ultimate resolution of tax uncertainties is different from what is currently estimated, a material impact on income tax expense could result.

The Company's provision for income taxes is subject to volatility and could be adversely impacted by changes in earnings or tax laws and regulations in various jurisdictions. The Company is subject to the continuous examination of our income tax returns by the Internal Revenue Service and other tax authorities. The Company regularly assesses the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. To the extent that the final tax outcome of these matters is different from the amounts recorded, such differences will impact the provision for income taxes in the period in which such determination is made. The provision for income taxes includes the impact of changes to reserves, as well as the related net interest and penalties.

Share-based Compensation Expense

The Company maintains an equity-settled, share-based compensation plan to grant restricted share units and stock options. The Company recognizes expense related to share-based compensation awards that are ultimately expected to vest based on estimated fair values on the date of grant. The fair value of restricted share units is based on the fair value of the Company's common share on the date of grant. For restricted stock awards subject to market conditions, the fair value of each restricted stock award is estimated at the date of grant using the Monte-Carol pricing model. The fair value of stock options is estimated on the date of grant using the Black-Scholes option valuation model. Share-based compensation expense is recognized on the accelerated attribution basis over the requisite service period of the award, which generally equals the vesting period.

The Employee Share Purchase Plan (the "ESPP") is accounted for at fair value on the date of grant using the Black-Scholes option valuation model.

Advertising

Advertising expenditures are expensed as incurred. Advertising expense was \$0.6 million, \$0.4 million and \$0.4 million in the fiscal years ended June 30, 2019, 2018, and 2017, respectively.

Comprehensive Income (Loss)

Comprehensive income (loss) is defined as the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. The Company's accumulated other comprehensive income (loss) consists of cumulative foreign currency translation adjustments.

Leases

Leases entered into by the Company as a lessee are classified as capital or operating leases. Leases that transfer to the Company substantially the entire risks and benefits incidental to ownership are classified as capital leases. At the inception of a capital lease, an asset and an obligation are recorded at an amount equal to the lesser of the present value of the minimum lease payments and the asset's fair market value at the beginning of each lease. Rental payments under operating leases are expensed as incurred.

The Company will recognize leases in accordance with Accounting Standards Update (ASU) 842 "Leases" beginning on July 1, 2019. Both finance and operating leases will result in the recognizing a right-of-use asset and a corresponding liability on its balance sheet, with differing methodology for income statement recognition.

Risks and Uncertainties

The Company is subject to certain risks and uncertainties. The Company believes changes in any of the following areas could have a material adverse effect on the Company's future financial position or results of operations or cash flows: new product development, including market receptiveness, operation of in-house manufacturing facilities, litigation or claims against the Company based on intellectual property, patent, product regulatory or other factors, competition from other products, general economic conditions, the ability to attract and retain qualified employees, the ability to successfully operate joint venture and ultimately to sustain profitable operations, and ability to diversify products and develop digital business. Additional risks and uncertainties that the Company is unaware of, or that the Company currently believes are not material, may also become important factors that adversely affect its business.

The semiconductor industry is characterized by rapid technological change, competition, competitive pricing pressures and cyclical market patterns. The Company's financial results are affected by a wide variety of factors, including general economic conditions specific to the semiconductor industry and the Company's particular market, such as the personal computing (PC) markets, the timely implementation of new products, new manufacturing process technology and the ability to safeguard patents and intellectual property in a rapidly evolving market. In addition, the semiconductor market has historically been cyclical and subject to significant economic downturns. As a result, the Company may experience significant period-to-period fluctuations in operating results due to the factors mentioned above or other factors.

The Company's business model allocates its wafer manufacturing requirements to both in-house capacity and selected third-party foundries. The Company also deploys and implements its proprietary power discrete processes and equipment at third-party foundries to maximize the performance and quality of its products.

The Company's revenue may be impacted by its ability to obtain adequate wafer supplies from third-party foundries and utilize wafer production and packaging and testing capacity from its in-house facilities. Currently the Company's main third-party foundry is Shanghai Hua Hong Grace Electronic Company Limited, or HHGrace, located in Shanghai, China. HHGrace has been manufacturing wafers for the Company since 2002. HHGrace manufactured approximately 14.1%, 15.4% and 18.6% of the wafers used in the Company's products for the fiscal years ended June 30, 2019, 2018 and 2017, respectively. Although the Company believes that its volume of production allows the Company to secure favorable pricing and priority in allocation of capacity in its third-party foundries, if the foundries' capacities are constrained due to market demands, HHGrace, together with other foundries from which the Company purchases wafers, may not be willing or able to satisfy all of the Company's manufacturing requirements on a timely basis and/or at favorable prices. The Company is also subject to the risks of service disruptions and raw material shortages by its foundries. Such disruptions, shortages and price increases could harm the Company's operating results. In addition, manufacturing facilities' capacity affects the Company's gross margin because the Company has certain fixed costs associated with its Oregon fab and the JV Company, as well as in-house packaging and testing facilities. If the Company fails to utilize its manufacturing facilities' capacity at a desirable level, its financial condition and results of operations will be adversely affected.

Recent Accounting Pronouncements

Recently Issued Accounting Standards not yet adopted

In August 2018, the Financial Accounting Standards Board (FASB) issued ASU No. 2018-15 “Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40): Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract (“ASU 2018-15”). These amendments align the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). The accounting for the service element of a hosting arrangement that is a service contract is not affected by these amendments. ASU 2018-15 is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2019. Early adoption is permitted. The Company is currently assessing the impact that adoption of this guidance will have on its consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-13, “Fair Value Measurement (Topic 820): Disclosure Framework- Changes to the Disclosure Requirements for Fair Value Measurement (“ASU 2018-13”). ASU 2018-13 amends existing fair value measurement disclosure requirements by adding, changing, or removing certain disclosures. The amendments on changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements, and the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively to all periods presented upon their effective date. ASU No. 2018-13 is effective for fiscal years and interim periods within those fiscal years, beginning after December 15, 2019. The Company does not expect the adoption of this guidance will have a material impact on its consolidated financial position, results of operations or cash flows.

In June 2018, the FASB issued ASU 2018-07, "Compensation -Stock Compensation: Improvement to Nonemployees Share-Based Payment Accounting ("ASU 2018-07"), which expands the scope of Topic 718 to include all share-based payment transactions for acquiring goods and services from nonemployees. ASU 2018-07 specifies that Topic 718 applies to all share-based payment transactions in which the grantor acquires goods and services to be used or consumed in its own operations by issuing share-based payment awards. ASU 2018-07 also clarifies that Topic 718 does not apply to share-based payments used to effectively provide (1) financing to the issuer or (2) awards granted in conjunction with selling goods or services to customers as part of a contract accounted for under ASC 606. ASU 2018-07 is effective fiscal years beginning after December 15, 2018, including interim periods within that fiscal year, with early adoption permitted, but no earlier than our adoption of ASC 606. The Company does not expect the adoption of this guidance will have a material impact on its consolidated financial position, results of operations or cash flows.

In June 2016, the FASB issued ASU 2016-13, "Financial Instruments - Credit Losses ("ASU 2016-13"). This accounting standard update changes the accounting for recognizing impairments of financial assets. Under the update, credit losses for certain types of financial instruments will be estimated based on expected losses. The update also modifies the impairment models for available-for-sale debt securities and for purchased financial assets with credit deterioration since their origination. This update is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. The Company is currently evaluating the impact of this accounting standard update on its Consolidated Financial Statements.

In February 2016, the FASB issued ASU 2016-02, "Leases ("ASU 2016-02"). This guidance requires a dual approach for lessee accounting under which a lessee will account for leases as finance leases or operating leases. Both finance and operating leases will result in the lessee recognizing a right-of-use asset and a corresponding liability on its balance sheet, with differing methodology for income statement recognition. This guidance is effective for public business entities for fiscal years, and interim periods within those years, beginning after December 15, 2018, and early adoption is permitted. The Company will adopt this standard in the first quarter of fiscal year of 2020, using the modified retrospective transition method and will not restate comparative periods. The Company will also elect to keep leases with an initial term of 12 months or less off the balance sheet and recognize the associated lease payments in the consolidated statements of income on a straight-line basis over the lease term. The key change that will affect the Company relates to its accounting for operating leases for which the Company are the lessee that were historically off-balance sheet. While the Company is currently evaluating the impact the pronouncement will have on its consolidated balance sheet and related disclosures, the Company expects that most of its operating lease commitments will be subject to the new standard and will result in the recognition of right-of-use assets and lease liabilities on its consolidated balance sheet as of July 1, 2019. Additionally, the Company will elect the package of practical expedients as permitted by the guidance. The Company is also evaluating the effect of the additional recognition and disclosure requirements under the standard on its current processes and controls.

Recently Adopted Accounting Standards

In August 2018, the SEC adopted the final rule under SEC Release No. 33-10532, Disclosure Update and Simplification, amending certain disclosure requirements that were redundant, duplicative, overlapping, outdated or superseded. In addition, the amendments expanded the disclosure requirements on the analysis of stockholders' equity for interim financial statements. Under the amendments, an analysis of changes in each caption of stockholders' equity presented in the balance sheet must be provided in a note or separate statement. The analysis should be presented in the form of a reconciliation of the beginning balance to the ending balance of each period for which a statement of comprehensive income is required to be filed with the SEC. The Company's first presentation of changes in stockholders' equity has been included in its Form 10-Q for the quarter ending March 31, 2019.

In May 2017, the FASB issued ASU 2017-09, "Compensation -Stock Compensation: Scope of Modification Accounting ("ASU 2017-09"). ASU 2017-09 is an update to the existing guidance to clarify when modification accounting would be applied for a change to the terms or conditions of a share-based award. Under this new guidance, modification accounting is required only if the fair value, a vesting condition, or the classification of the award changes as a result of the change in terms or conditions. This ASU is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2017 with early adoption permitted. The Company does not regularly modify the terms and conditions of its share-based awards and the adoption of this guidance had no impact on its financial statements.

In November 2016, the FASB issued ASU 2016-18, "Statement of Cash Flows: Restricted Cash ("ASU 2016-18"). ASU 2016-18 requires amounts generally described as restricted cash and restricted cash equivalents be included with cash and cash equivalents when reconciling the total beginning and ending amounts for the periods shown on the statement of cash flows. This ASU is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years, with early adoption permitted and requires retrospective adoption. The Company adopted this standard effective July 1, 2018. The reclassified restricted cash balances from investing activities to changes in cash, cash equivalents and restricted cash on the condensed consolidated statements of cash flows were not material for all periods presented.

In August 2016, the FASB issued ASU No. 2016-15, "Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments ("ASU 2016-15"). ASU 2016-15 identifies how certain cash receipts and cash payments are presented and classified in the Statement of Cash Flows under Topic 230. ASU 2016-15 is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years, with early adoption permitted. Upon adoption, entities must apply the guidance retrospectively to all periods presented. There was no impact on the Company's consolidated financial statements upon the adoption of this standard.

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (ASC 606). The standard provides companies with a single model for use in accounting for revenue arising from contracts with customers and supersedes current revenue recognition guidance, including industry-specific revenue guidance. The core principle of the model is to recognize revenue when control of the goods or services transfers to the customer, as opposed to recognizing revenue when the risks and rewards transfer to the customer under the existing revenue guidance.

The change for the Company under ASC 606 relates to the timing of revenue recognition with two U.S.-based distributors. Sales to these distributors are governed under the terms of agreements providing extended price protection and other return rights, and were historically deferred under the previous accounting guidance until the related product was sold to the end customer. Under ASC 606, the transaction price takes into consideration the effect of variable consideration such as price adjustments and returns rights, which are estimated and recorded at the time the goods are delivered. Accordingly, the Company recognizes revenue under ASC 606 at the time of shipment or delivery to these two distributors, adjusted for estimates of the price adjustments and product returns based on historical data and other available information. Revenue from other non-U.S. distributors and direct customers, which consists of the majority of the Company's total revenue, is recognized at the time of shipment or delivery to the distributors and direct customers. Accordingly, revenue recognition with these distributors and direct customers remains unchanged upon adoption of ASC 606. See "Note 2 - Revenue" for additional information on the impact of the adoption of the new standard on the Company's consolidated financial statements.

2. Revenue

Impact from the Adoption of the New Revenue Standard:

On July 1, 2018, the Company adopted ASC 606 using the modified retrospective method applied to all contracts. Results for reporting periods beginning after July 1, 2018 were presented under ASC 606, while prior period amounts were not adjusted and continue to be reported in accordance with our historic accounting under ASC 605.

The change for the Company under ASC 606 relates to the timing of revenue recognition with two U.S.-based distributors. Sales to these distributors are governed under terms of agreements providing extended price protection and other return rights. The Company recorded a net increase to opening retained earnings of \$1.0 million as of July 1, 2018 due to the cumulative impact of adopting ASC 606, with a corresponding \$1.6 million decrease in deferred margin, a \$0.2 million decrease in accounts receivables, a \$0.1 million increase in current accrued liabilities, and a \$0.3 million increase in deferred tax liabilities. Effective July 1, 2018, the Company recognized revenue at the time of shipment or delivery to these two distributors, adjusted for estimates of the price adjustments and return rights based on historical data and other available information. Based on the Company's assessment, only minimal changes were required to the Company's existing policies, processes, and controls to support the standard's measurement and disclosure requirements.

The following tables compare the amounts reported in the condensed consolidated statements of income and condensed consolidated balance sheet to the amounts had the previous revenue recognition guidance been in effect:

	As of June 30, 2019		
	As Reported	Adjustment	Balances Without Adoption
	(in thousands)		
Accounts receivable, net	\$ 24,296	\$ 210	\$ 24,506
Accrued liabilities	\$ 44,075	\$ (78)	\$ 43,997
Deferred margin	\$ —	\$ 1,879	\$ 1,879
Income taxes payable	\$ 1,541	\$ (59)	\$ 1,482
Deferred income tax liabilities	\$ 466	\$ (302)	\$ 164
Retained earnings	\$ 125,485	\$ (1,231)	\$ 124,254

	Year Ended June 30, 2019		
	As Reported	Adjustment	Balances Without Adoption
	(in thousands)		
Revenue	\$ 450,920	\$ (583)	\$ 450,337
Cost of goods sold	\$ 335,542	\$ (302)	\$ 335,240
Gross profit	\$ 115,378	\$ (281)	\$ 115,097
Income tax expense	\$ 1,256	\$ (59)	\$ 1,197
Net loss including noncontrolling interest	\$ (14,638)	\$ (222)	\$ (14,860)

New Revenue Recognition Policy Including Significant Judgments and Estimates

As a result of the adoption of the new revenue standard on July 1, 2018, beginning with the first quarter of fiscal year 2019, the Company determines revenue recognition through the following steps: (1) identification of the contract with a customer; (2) identification of the performance obligations in the contract; (3) determination of the transaction price; (4) allocation of the transaction price to the performance obligations in the contract; and (5) recognition of revenue when, or as, a performance obligation is satisfied.

The Company has written contracts with a combination of agreements and purchase orders with all customers including certain general terms and conditions. Often purchase orders entail merchandises, quantities and prices, which define the performance obligations of each party and are approved or accepted by the Company. The Company's contracts with

customers do not typically include extended payment terms. Payment terms vary by contract type and type of customer and generally range from 30 to 60 days.

Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration the Company expects to receive in exchange for those products or services. Transfer of control typically occurs at the time of shipment or at the time the product is pulled from consignment as that is the point at which delivery has occurred, title and the risks and rewards of ownership have passed to the customers, and the Company has a right to payment. Packaging and testing services revenue is recognized upon shipment of serviced products to the customer.

The majority of the Company's total revenue is from non-U.S. distributors and direct customers, which is recognized at the time of shipment or delivery to distributors and direct customers. Accordingly, revenue recognition with these distributors and direct customers remains unchanged upon adoption of ASC 606. As noted above, the change for the Company under ASC 606 relates to the timing of revenue recognition with two U.S.-based distributors. Sales to these distributors are governed under the terms of agreements providing extended price protection and other return rights, and were historically deferred under the previous accounting guidance until the related product was sold to end customers. Under ASC 606, the transaction price takes into consideration the effect of variable consideration such as price adjustments and return rights, which are estimated and recorded at the time the goods are delivered.

Because all of the Company's performance obligations relate to contracts with a duration of less than one year, the Company elected to apply the optional exemption practical expedient provided in ASC 606 and, therefore, is not required to disclose the aggregate amount of the transaction price allocated to performance obligations that are unsatisfied or partially unsatisfied at the end of the reporting period.

The Company adjusts the transaction price for variable consideration. Variable consideration primarily represents adjustments related to stock rotation rights and price adjustments provided to our distributors. As a practical expedient, the Company recognizes the incremental costs of obtaining a contract, specifically commission expenses that have a period of benefit of less than twelve months, as an expense when incurred. Additionally, the Company has adopted an accounting policy to recognize shipping costs that occur after control transfers to the customer as a fulfillment activity.

The Company warrants its products to be free of defects generally for a period of one year. The Company estimates its warranty costs based on historical warranty claim experience and includes such costs in cost of goods sold. Warranty expenses and the accrued warranty liability were not material as of June 30, 2019.

The following table presents the Company's revenue information by geographical location based on the country or region to which the products were shipped. The Company sells its products primarily to distributors in the Asia Pacific region, who in turn sell these products to end customers. Because the Company's distributors sell their products to end customers which may have a global presence, revenue by geographical location is not necessarily representative of the geographical distribution of sales to end user markets.

The revenue by geographical location in the following tables is based on the country or region in which the products were shipped to:

	Year Ended June 30,		
	2019	2018	2017
	(in thousands)		
Hong Kong	\$ 355,058	\$ 340,178	\$ 315,223
China	81,955	71,213	59,360
South Korea	2,590	1,061	1,505
United States	7,015	5,658	4,037
Other countries	4,302	3,443	3,212
	<u>\$ 450,920</u>	<u>\$ 421,553</u>	<u>\$ 383,337</u>

The following is a summary of revenue by product type:

	Year Ended June 30,		
	2019	2018	2017
	(in thousands)		
Power discrete	\$ 371,837	\$ 342,148	\$ 288,788
Power IC	70,215	67,083	82,389
Packaging and testing services	8,868	12,322	12,160
	<u>\$ 450,920</u>	<u>\$ 421,553</u>	<u>\$ 383,337</u>

3. Net Income (loss) Per Common Share Attributable to Alpha and Omega Semiconductor Limited

Basic net income (loss) per share is computed using the weighted-average number of common shares outstanding during the period. Diluted net income (loss) per share is computed using the weighted-average number of common shares outstanding, plus potential shares of common stock during the period. Potential shares of common stock include dilutive shares attributable to the assumed exercise of share options, ESPP shares and vesting of RSUs using the treasury stock method and contingent issuances of common shares related to convertible preferred shares, if dilutive. Under the treasury stock method, potential common shares outstanding are not included in the computation of diluted net income per share if their effect is anti-dilutive.

The following table presents the calculation of basic and diluted net income per share attributable to common shareholders:

	Year Ended June 30,		
	2019	2018	2017
(in thousands, except per share data)			
Numerator:			
Net income attributable to Alpha and Omega Semiconductor Limited	\$ 1,861	\$ 14,263	\$ 13,829
Denominator:			
Basic:			
Weighted average number of common shares used to compute basic net income per share	24,063	23,901	23,526
Diluted:			
Weighted average number of common shares used to compute basic net income per share	24,063	23,901	23,526
Effect of potentially dilutive securities:			
Stock options, RSUs and ESPP shares	635	943	1,300
Weighted average number of common shares used to compute diluted net income per share	24,698	24,844	24,826
Net income per share attributable to Alpha and Omega Semiconductor Limited:			
Basic	\$ 0.08	\$ 0.60	\$ 0.59
Diluted	\$ 0.08	\$ 0.57	\$ 0.56

The following potential dilutive securities were excluded from the computation of diluted net income per share as their effect would have been anti-dilutive:

	Year Ended June 30,		
	2019	2018	2017
(in thousands)			
Employee stock options and RSUs	593	186	105
ESPP	512	182	19
Total potential dilutive securities	1,105	368	124

4. Concentration of Credit Risk and Significant Customers

The Company manages its credit risk associated with exposure to distributors and direct customers on outstanding accounts receivable through the application of credit approvals, credit ratings and other monitoring procedures. In some instances, the Company also obtains letters of credit from certain customers.

Credit sales, which are mainly on credit terms of 30 to 60 days, are only made to customers who meet the Company's credit standards, while sales to new customers or customers with low credit ratings are usually made on an advance payment basis. The Company considers its financial assets to be of good credit quality because its key distributors and direct customers have long-standing business relationships with the Company and the Company has not experienced any significant bad debt write-offs of accounts receivable in the past. The Company closely monitors the aging of accounts receivable from its distributors and direct customers, and regularly reviews their financial positions, where available.

Summarized below are individual customers whose revenue or accounts receivable balances were 10% or higher than the respective total consolidated amounts:

Percentage of revenue	Year Ended June 30,		
	2019	2018	2017
Customer A	28.8%	28.3%	26.9%
Customer B	36.4%	35.2%	35.8%
Customer C	*	*	10.6%

Percentage of accounts receivable	June 30,	
	2019	2018
Customer A	12.1%	17.1%
Customer B	19.7%	35.5%
Customer C	18.1%	10.6%
Customer D	13.3%	*

* Less than 10%

5. Balance Sheet Components

Accounts receivable

	June 30,	
	2019	2018
	(in thousands)	
Accounts receivable	\$ 48,401	\$ 52,687
Less: Allowance for price adjustments	(24,075)	(18,902)
Less: Allowance for doubtful accounts	(30)	(30)
Accounts receivable, net	<u>\$ 24,296</u>	<u>\$ 33,755</u>

Inventories

	June 30,	
	2019	2018
	(in thousands)	
Raw materials	\$ 59,076	\$ 47,097
Work in-process	38,214	35,243
Finished goods	14,353	7,842
	<u>\$ 111,643</u>	<u>\$ 90,182</u>

Other current assets:

	June 30,	
	2019	2018
	(in thousands)	
VAT receivable	\$ 30,769	\$ 17,601
Other prepaid expenses	2,745	2,121
Prepaid insurance	939	906
Prepaid maintenance	481	556
Prepayments to supplier	583	227
Prepaid income tax	267	761
Customs deposit	114	5,749
Lease financing cost	825	960
Other receivables	379	670
	<u>\$ 37,102</u>	<u>\$ 29,551</u>

Property, plant and equipment, net

	June 30,	
	2019	2018
	(in thousands)	
Land	\$ 4,877	\$ 4,877
Building	36,205	4,325
Manufacturing machinery and equipment	303,750	265,192
Equipment and tooling	20,739	16,605
Computer equipment and software	34,048	25,686
Office furniture and equipment	3,243	2,314
Leasehold improvements	53,597	29,900
Land use rights	8,760	9,089
	<u>465,219</u>	<u>357,988</u>
Less: accumulated depreciation	(252,982)	(225,184)
	<u>212,237</u>	<u>132,804</u>
Equipment and construction in progress	197,500	198,852
Property, plant and equipment, net	<u>\$ 409,737</u>	<u>\$ 331,656</u>

Total depreciation expense was \$31.9 million, \$29.2 million and \$27.2 million for fiscal year 2019, 2018 and 2017, respectively.

The gross amount of computer software recorded under capital leases was \$13.7 million and \$8.2 million and the related accumulated depreciation was \$8.2 million and \$7.3 million, respectively, at June 30, 2019 and 2018.

The Company capitalized \$0.8 million, \$0.3 million and 0.2 million of software development costs during the fiscal year 2019, 2018 and 2017, respectively. Amortization of capitalized software development costs was \$0.5 million in fiscal year 2019, and \$0.6 million in each of the fiscal year 2018 and 2017, respectively. Unamortized capitalized software development costs in each of the periods presented at June 30, 2019 and 2018 were \$0.9 million and \$0.7 million, respectively.

There is no private land ownership in China. Individuals and companies are permitted to acquire land use rights for specific purpose. In March 2017, the JV Company received the necessary land use right certificate from the PRC government. The land use rights will expire on November 30, 2066.

Other long-term assets

	June 30,	
	2019	2018
	(in thousands)	
Prepayments for property and equipment	\$ 4,846	\$ 17,599
Investments in privately held companies	700	700
Lease financing costs	1,758	1,922
VAT long-term receivable	—	3,396
Customs deposit	980	1,589
Other long-term deposits	889	2,252
Office leases deposits	1,031	853
Other	413	387
	<u>\$ 10,617</u>	<u>\$ 28,698</u>

Intangible assets, net

	June 30,	
	2019	2018
	(in thousands)	
Patents and technology rights	\$ 18,037	\$ 17,633
Trade name	268	268
Customer relationships	1,150	1,150
	19,455	19,051
Less: accumulated amortization	(2,842)	(2,729)
	16,613	16,322
Goodwill	269	269
Intangible assets, net	\$ 16,882	\$ 16,591

The carrying value of goodwill was \$0.3 million for fiscal years 2019, 2018 and 2017.

Intangible assets of patents and technology rights are primarily related to a license agreement that the Company entered into with STMicroelectronics International N.V. (“STMicro”) on September 5, 2017, pursuant to which STMicro granted the Company a world-wide, royalty-free and fully-paid license to use its technologies to develop, market and distribute certain digital multi-phase controller products, which have been offered by STMicro. This agreement allows the Company to develop and market products in a new market, primarily in the computer server segment. Under the license agreement, the Company agreed to pay a total price in cash of \$17.0 million based on the payment schedule of approximately \$10.1 million, \$6.7 million, and \$0.2 million in calendar year 2017, 2018 and 2019, respectively. As of June 30, 2019, the Company recorded \$16.2 million of intangible assets related to STMicro. The Company begins amortizing such license fees when the technology has met the Company’s qualification.

Amortization expense for intangible assets was \$113,000, \$76,000 and \$2,000 for the years ended June 30, 2019, 2018 and 2017, respectively.

Estimated future minimum amortization expense of intangible assets is as follows (in thousands):

Year ending June 30,	
2020	\$ 925
2021	3,360
2022	3,360
2023	3,286
2024	3,249
Thereafter	2,433
	\$ 16,613

Accrued liabilities

	June 30,	
	2019	2018
	(in thousands)	
Accrued compensation and benefits	\$ 16,385	\$ 18,484
Warranty accrual	623	535
Stock rotation accrual	1,921	1,750
Accrued professional fees	1,721	1,922
Accrued inventory	857	667
Accrued facilities related expenses	4,233	2,163
Accrued financing lease costs	728	1,510
Accrued property, plant and equipment	11,527	18,145
Other accrued expenses	6,080	4,665
	<u>\$ 44,075</u>	<u>\$ 49,841</u>

The activity in the warranty accrual, included in accrued liabilities is as follows:

	Year Ended June 30,		
	2019	2018	2017
	(in thousands)		
Beginning balance	\$ 535	\$ 1,866	\$ 1,495
Addition	236	(147)	1,476
Released	—	(1,000)	(580)
Utilization	(148)	(184)	(525)
Ending balance	<u>\$ 623</u>	<u>\$ 535</u>	<u>\$ 1,866</u>

The activity in the stock rotation accrual, included in accrued liabilities is as follows:

	Year Ended June 30,		
	2019	2018	2017
	(in thousands)		
Beginning balance	\$ 1,750	\$ 1,871	\$ 1,988
Addition	5,267	2,714	4,819
Utilization	(5,096)	(2,835)	(4,936)
Ending balance	<u>\$ 1,921</u>	<u>\$ 1,750</u>	<u>\$ 1,871</u>

Deferred margin

Deferred margin consists of the following:

	June 30,	
	2019	2018
	(in thousands)	
Deferred revenue	\$ —	\$ 2,555
Deferred costs	—	(890)
Deferred margin	<u>\$ —</u>	<u>\$ 1,665</u>

Other long-term liabilities:

	June 30, 2019	June 30, 2018
	(in thousands)	
Deferred rent	\$ 65	\$ 238
Customer deposits	10,000 *	—
Computer software liabilities	3,701	—
Other	155	755
Other long-term liabilities	<u>\$ 13,921</u>	<u>\$ 993</u>

* Customer deposit from our customer A and customer B for securing future shipment from the Company

6. Bank borrowings

Short-term borrowing

On March 21, 2019, the JV Company entered into a one-year loan agreement with China Everbright Bank in China to provide a loan for Chinese Renminbi (RMB) 20 million, or \$3.0 million based on currency exchange rate between RMB and U.S. Dollar on March 31, 2019 at fixed interest rate of 5.44% per annum. Interest payments are due monthly with the entire principal due on March 21, 2020. As of June 30, 2019, the outstanding balance under the loan was 20 million RMB (equivalent of \$2.9 million based on the currency exchange rate as of June 30, 2019).

On November 29 and December 4, 2018, the JV Company entered into two one-year loan agreements with China Merchant Bank in China to provide loans for RMB 80 million and 20 million, respectively, or \$14.5 million in total based on currency exchange rate between RMB and U.S. Dollar on December 31, 2018 at varying interest rates. Interest payments are due monthly and quarterly with the entire principal due not later than December 18 and December 5, 2019, respectively. As of June 30, 2019, the outstanding balances under the loans were 80 million RMB and 20 million (equivalent of \$14.6 million in total based on the currency exchange rate as of June 30, 2019).

On November 16, 2018, the Company's subsidiary in China entered into a line of credit facility with Industrial and Commercial Bank of China, which expires on September 30, 2019. The purpose the credit facility is to provide short-term borrowings. The Company can borrow up to approximately RMB 72.0 million or \$10.3 million based on currency exchange rate between RMB and U.S. Dollar on November 16, 2018. In November 2018 and April, 2019, the Company borrowed \$5.0 million and \$10.5 million, respectively under this line with an interest rate of 3.64% and 4.57%, per annum, respectively. The amount of \$5.0 million and \$10.5 million were repaid in December 2018 and June 2019. As of June 30, 2019, there was no outstanding balance under the line of credit.

Credit Facilities

On May 9, 2018 (the "Effective Date"), the JV Company entered into a lease finance agreement and a security agreement (the "Agreements") with YinHai Leasing Company and China Import/Export Bank (the "Lenders"). Pursuant to the Agreements, the Lenders agree to provide an aggregate of Chinese Renminbi (RMB) 400.0 million, or \$62.8 million based on the currency exchange rate between RMB and U.S. Dollar on the Effective Date, of financing to the JV Company (the "Lease Financing"). In exchange for the Lease Financing, the JV Company agrees to transfer title of its assembly and testing equipment to the Lenders, and the Lenders lease such equipment to the JV Company under a five-year lease arrangement, pursuant to which the JV Company makes quarterly lease payments to the Lenders consisting of principal and interest based on a repayment schedule mutually agreed by the parties. The interest under the Lease Financing is accrued based on the China Base Rate multiplied by 1.15, or 5.4625% on the Effective Date. Under the Agreements, at the end of the five-year lease term, the Lenders agree to sell such equipment back to the JV Company for a nominal amount (RMB 1). The JV Company's obligations under the Lease Financing are secured by the land and building owned by the JV Company (the "Collateral"). The proceeds from the Lease Financing will be used primarily for the acquisition and installation of the 12-inch fabrication equipment and other expenses of the JV Company relating to the completion of the fabrication facility located in Chongqing. The Agreements contain customary representation, warranties and covenants, including restrictions on the transfer of the Collateral. The Agreements also contain customary events of default, including but are not limited to, failure to make payments and breach of material terms under the Agreements. The Agreements include certain customary closing conditions, including

the payment of deposit by the JV Company. As of June 30, 2019, the outstanding balance of the Lease Financing of 376.0 million RMB (equivalent of \$54.7 million based on the currency exchange rate as of June 30, 2019) was recorded under short-term and long-term capital lease liabilities.

Capital leases

Capital lease liabilities include the following:

	June 30,	
	2019	2018
	(in thousands)	
Financing lease	\$ 54,736	\$ 60,416
Computer software	—	843
Exclusive technology rights	—	23
	54,736	61,282
Less: current portion	(11,355)	(4,491)
Capital leases - long-term portion	<u>\$ 43,381</u>	<u>\$ 56,791</u>

The computer software and exclusive technology rights under capital leases were included in property, plant and equipment and intangible assets, respectively.

Future minimum lease payments at June 30, 2019 are as follows (in thousands):

Year ending June 30,	
2020	\$ 14,219
2021	17,799
2022	16,928
2023	12,269
Total minimum lease payments	61,215
Less amount representing interest	(6,479)
Total capital lease liabilities	<u>\$ 54,736</u>

Long-term debt

On March 12, 2019, the JV Company entered into a loan agreement with The Export-Import Bank of China in the aggregate principal amount of 200 million RMB (approximately \$29.8 million based on currency exchange rate between RMB and U.S. Dollar on March 31, 2019). The loan will mature on February 20, 2025. The JV Company drew down 190 million RMB (approximately \$28.3 million based on the currency exchange rate between RMB and U.S. Dollar on March 31, 2019) in March 2019. The loan withdraw window will expire on February 28, 2020. The interest is accrued based on the China Base Rate multiplied by 1.1, or 5.39% on March 12, 2019. The loan requires quarterly interest payments. The principal payments are required to pay every 6 months over the term of loan commencing in October 2019. The obligation under this loan agreement is secured by the buildings and certain equipment owned by the JV Company. As a condition of the loan arrangements, 14 million RMB (approximately \$2.0 million) of cash is held as restricted cash by the JV Company as a compensating balance at the JV Company's bank until the principal is paid off. As of June 30, 2019, the outstanding balance of the loan was 190 million RMB (equivalent of \$27.7 million based on the currency exchange rate as of June 30, 2019).

On May 1, 2018, our Oregon subsidiary, Jireh Semiconductor Incorporated (“Jireh”) entered into a loan agreement with the Bank that provided a term loan in an amount of \$17.8 million. The obligation under the loan agreement is secured by certain real estate assets of Jireh and guaranteed by the Company. The loan has a five-year term and matures on June 1, 2023. Beginning June 1, 2018, Jireh shall make consecutive monthly payments of principal and interest to the Bank. The outstanding principal shall accrue interest at a fixed rate of 5.04% per annum on the basis of a 360-day year. The loan agreement contains

customary restrictive covenants and includes certain financial covenants that require the Company to maintain, on a consolidated basis, specified financial ratios. The Company was in compliance with these covenants. As of June 30, 2019, the outstanding balance of the term loan was \$16.8 million.

On August 15, 2017, Jireh entered into a credit agreement with a financial institution (the “Bank”) that provided a term loan in an amount up to \$30.0 million for the purpose of purchasing certain equipment for our fabrication facility located in Oregon. The obligation under the credit agreement is secured by substantially all assets of Jireh and guaranteed by the Company. The credit agreement has a five-year term and matures on August 15, 2022. In January 2018 and July 2018, Jireh drew down on the loan in the amount of \$13.2 million and \$16.7 million, respectively. Beginning in October 2018, Jireh is required to pay to the Bank on each payment date, the outstanding principal amount of the loan in monthly installments. The monthly loan interest is based on an adjusted London Interbank Offered Rate (“LIBOR”) as defined in the credit agreement, plus specified applicable margin in the range of 1.75% to 2.25%, based on the outstanding balance of the loan. The credit agreement contains customary restrictive covenants and includes certain financial covenants that require the Company to maintain, on a consolidated basis, specified financial ratios and fixed charge coverage ratio. The Company was in compliance with these covenants. As of June 30, 2019, the outstanding balance of the term loan was \$24.2 million.

At June 30, 2019, maturities of short-term debt and long-term debt were as follows (in thousands):

Year ending June 30,	
2020	\$ 26,682
2021	9,796
2022	15,036
2023	22,725
2024	6,696
Thereafter	5,242
Total principal of debt	<u>86,177</u>
Less: debt issuance costs	(188)
Total principal of debt, less debt issuance costs	<u>\$ 85,989</u>

	Short-term Debt	Long-term Debt
Principal amount	\$ 26,682	\$ 59,495
Less: debt issuance costs	(73)	(115)
Total debt, less debt issuance costs	<u>\$ 26,609</u>	<u>\$ 59,380</u>

7. Shareholders' Equity

Common Shares

On November 8, 2017, the shareholders of the Company approved the Company to increase the authorized number of common shares from 50,000,000 shares to 100,000,000 shares with par value of \$0.002. Each common share is entitled to one vote. The holders of common shares are also entitled to receive dividends whenever funds are legally available and when and if declared by the board of directors in accordance with the Company's Bye-laws. No dividends had been declared as of June 30, 2019.

In September 2017, the Board of Directors approved a repurchase program (the “Repurchase Program”) that allowed the Company to repurchase its common shares from the open market pursuant to a pre-established Rule 10b5-1 trading plan or through privately negotiated transactions up to an aggregate of \$30.0 million. The amount and timing of any repurchases under the Repurchase Program depend on a number of factors, including but not limited to, the trading price, volume and availability of the Company's common shares. Shares repurchased under this program are accounted for as treasury shares and the total cost of shares repurchased is recorded as a reduction of shareholders' equity. From time to time, treasury shares may be reissued as part of the Company's stock-based compensation programs. Gains on re-issuance of treasury stock are credited to

additional paid-in capital; losses are charged to additional paid-in capital to offset the net gains, if any, from previous sales or re-issuance of treasury stock. Any remaining balance of the losses is charged to retained earnings.

During fiscal years 2019 and 2018, the Company repurchased an aggregate of 111,509 shares and 950,046 shares, respectively, from the open market for a total cost of approximately \$1.5 million and \$15.1 million, excluding fees and related expenses, at an average price of \$13.43 and \$15.86 per share, respectively. During fiscal year 2017, the Company did not repurchase any shares pursuant to the repurchase program.

As of June 30, 2019, the Company had repurchased an aggregate of 6,784,648 shares for a total cost of \$67.3 million, at an average price of \$9.92 per share, excluding fees and related expenses, since inception of the program. No repurchased shares have been retired. Of the 6,784,648 repurchased shares, 138,828 shares with a weighted average repurchase price of \$10.41 per share, were reissued at an average price of \$5.55 per share for option exercises and vested restricted stock units ("RSU"). As of June 30, 2019, \$13.4 million remain available under the share repurchase program.

8. Share-based Compensation

2018 Omnibus Incentive Plan

The 2009 Share Option/Share Issuance Plan (the "2009 Plan") was approved in September 2009 at the annual general meeting of shareholders in connection with the Company's IPO. At the annual general meeting of shareholders in November 2018, the 2009 Plan was approved to be terminated and the 2018 Omnibus Incentive Plan (the "2018 Plan") was effective. No further awards will be made under the 2009 Plan. The 2018 Plan authorized the board of directors to grant incentive share options, non-statutory share options and restricted shares to employees, directors, non-employee directors and consultants of the Company and its subsidiaries for up to 1,265,000 common shares. The 2018 Plan does not include an evergreen authorization, therefore the Company is not permitted to increase the number of shares reserved in the share pool without obtaining further shareholder approval. Outstanding shares under the 2018 Plan and awards granted under the 2009 Plan that expire, are forfeited or cancelled or terminate prior to the issuance of the shares subject to those awards or are settled in cash will be available for subsequent issuance under the 2018 Plan. As of June 30, 2019, 733,821 shares were available for grant under the 2018 Plan.

Beginning with the 2014 Annual Shareholders Meeting, on the date of each annual shareholders meeting, each individual who commences service as a non-employee Board member by reason of his or her election to the Board at such annual meeting and each individual who is to continue to serve as a non-employee Board member, whether or not that individual is standing for re-election to the Board at that particular annual meeting, will automatically be granted an award in the form of restricted share units ("RSU") covering that number of common shares determined by dividing ninety-five thousand dollars (\$95,000) by the average fair market value per share for the ninety (90)-day period preceding the grant date.

Under the 2018 Plan, incentive share options and RSU are to be granted at a price that is not less than 100% and nonstatutory share options are to be granted at not less than 85% of the fair value of the common shares, at the date of grant for employees and consultants. Options and RSUs generally vest over a four-year to five-year period, and are exercisable for a maximum period of ten years after the date of grant.

The fair value of RSU, including time-based restricted stock units and performance-based restricted stock units is based on the market price of the Company's share on the date of grant.

Time-based Restricted Stock Units ("TRSU")

The following table summarizes the Company's TRSU activities:

	Number of Restricted Stock Units	Weighted Average Grant Date Fair Value Per Share	Weighted Average Remaining Recognition Period (Years)	Aggregate Intrinsic Value
Nonvested at June 30, 2016	933,063	\$ 9.18	1.73	\$ 12,997,568
Granted	446,719	\$ 18.26		
Vested	(364,567)	\$ 8.34		
Forfeited	(40,850)	\$ 12.74		
Nonvested at June 30, 2017	974,365	\$ 13.51	1.68	\$ 16,244,748
Granted	482,397	\$ 16.46		
Vested	(468,051)	\$ 13.24		
Forfeited	(69,688)	\$ 14.25		
Nonvested at June 30, 2018	919,023	\$ 15.14	1.62	\$ 13,086,888
Granted	527,022	\$ 11.28		
Vested	(499,954)	\$ 13.09		
Forfeited	(39,750)	\$ 13.82		
Nonvested at June 30, 2019	906,341	\$ 14.09	1.62	\$ 8,465,225

Performance-based Restricted Stock Units ("PRSU")

In March 2019, 2018 and 2017, the Company granted 291,750, 298,050 and 170,000 PRSUs to its certain personnel. The number of shares to be ultimately earned under the PRSU is determined based on the level of attainment of predetermined financial goals. The PRSU vests in four equal annual installments from the first anniversary date after the grant date if certain predetermined financial goals were met. During fiscal year 2019, 295,300 shares related to PRSUs granted in fiscal year 2018 were earned. During fiscal year 2018, 153,000 shares related to PRSUs granted in fiscal year 2017 were earned. The Company recorded approximately \$2.8 million, \$1.9 million and \$0.5 million of expenses for these PRSUs during the years ended June 30, 2019, 2018 and 2017, respectively.

The following table summarizes the Company's PRSU activities:

	Number of Performance-based Restricted Stock Units	Weighted Average Grant Date Fair Value Per Share	Weighted Average Remaining Recognition Period (Years)	Aggregate Intrinsic Value
Nonvested at June 30, 2016	—	\$ —	—	\$ —
Granted	170,000	\$ 17.58		
Vested	—	\$ —		
Forfeited	—	\$ —		
Nonvested at June 30, 2017	170,000	\$ 17.58	2.21	\$ 2,833,900
Granted	298,050	\$ 16.22		
Vested	(38,247)	\$ 17.58		
Forfeited	(7,503)	\$ 17.26		
Nonvested at June 30, 2018	422,300	\$ 16.63	2.06	\$ 6,013,552
Granted	291,750	\$ 11.18		
Vested	(111,623)	\$ 16.68		
Forfeited	(5,703)	\$ 16.78		
Nonvested at June 30, 2019	596,724	\$ 13.95	1.88	\$ 5,573,402

Market-based Restricted Stock Units ("MSUs")

During the quarter ended September 30, 2018, the Company granted 1.3 million market-based restricted stock units ("MSUs") to certain personnel. The number of shares to be earned at the end of performance period is determined based on the Company's achievement of specified stock prices and revenue thresholds during the performance period from January 1, 2019 to December 31, 2021 as well as the recipients remaining in continuous service with the Company through such period. The MSUs vest in four equal annual installments after the end of performance period. The Company estimated the grant date fair values of its MSUs with derived service periods of 4.5 to 7.5 years using a Monte-Carlo simulation model with the following assumptions: Risk-free interest rate of 2.7%, expected term of 3.5 years, expected volatility of 38.8% and dividend yield of 0%. The Company recorded approximately \$0.4 million of expense for these MSUs during the year ended June 30, 2019.

The following table summarizes the Company's MSUs activities:

	Number of Performance-based Restricted Stock Units	Weighted Average Grant Date Fair Value Per Share	Weighted Average Remaining Recognition Period (Years)
Nonvested at June 30, 2018	—	\$ —	—
Granted	1,310,000	\$ 5.17	
Vested	—	\$ —	
Forfeited	(20,000)	\$ 5.17	
Nonvested at June 30, 2019	1,290,000	\$ 5.17	4.97
MSUs vested and expected to vest	948,998		4.97

Stock Option

The following table summarizes the Company's stock option activities:

	<u>Number of Shares</u>	<u>Weighted Average Exercise Price Per Share</u>	<u>Weighted Average Remaining Contractual Term (in years)</u>	<u>Aggregate Intrinsic Value</u>
Outstanding at June 30, 2016	1,859,260	\$ 11.37	4.71	
Granted	—	\$ —		
Exercised	(693,393)	\$ 11.76		\$ 5,681,783
Canceled or forfeited	(112,500)	\$ 12.72		
Outstanding at June 30, 2017	1,053,367	\$ 10.98	4.43	
Granted	—	\$ —		
Exercised	(166,389)	\$ 11.00		\$ 959,257
Canceled or forfeited	—	\$ —		
Outstanding at June 30, 2018	886,978	\$ 10.97	4.03	
Granted	—	\$ —		
Exercised	(10,500)	\$ 10.50		\$ 43,415
Canceled or forfeited	—	\$ —		
Outstanding at June 30, 2019	876,478	\$ 10.98	3.06	\$ 758,871
Options vested and expected to vest	876,478	\$ 10.98	3.06	\$ 758,871
Exercisable at June 30, 2019	876,478	\$ 10.98	3.06	\$ 758,871

The aggregate intrinsic value for options outstanding at June 30, 2019 in the table above is based on the Company's common stock closing price on June 30, 2019.

Information with respect to stock options outstanding and exercisable as of June 30, 2019 is as follows:

<u>Range of Exercise Prices</u>	<u>Options Outstanding</u>			<u>Options Exercisable</u>		
	<u>Number Outstanding</u>	<u>Weighted-Average Remaining Contractual Life (Years)</u>	<u>Weighted-Average Exercise Price</u>	<u>Number Exercisable</u>	<u>Weighted-Average Exercise Price</u>	
\$7.21 - \$7.21	6,875	4.58	\$ 7.21	6,875	\$ 7.21	
\$7.44 - \$7.44	331,139	4.71	\$ 7.44	331,139	\$ 7.44	
\$7.56 - \$9.90	195,150	3.71	\$ 8.93	195,150	\$ 8.93	
\$10.50 - \$15.00	178,314	1.30	\$ 13.45	178,314	\$ 13.45	
\$17.90 - \$18.00	165,000	0.83	\$ 17.99	165,000	\$ 17.99	
\$7.21 - \$18.00	876,478	3.06	\$ 10.98	876,478	\$ 10.98	

The 2018 Employee Share Purchase Plan

At the annual general meeting of shareholders in November 2018, the 2018 Employee Share Purchase Plan ("Purchase Plan" or "ESPP") Plan was approved, under which 1,430,000 common shares are available for issuance. The ESPP Plan does not include an evergreen authorization, therefore the Company is not permitted to increase the number of shares reserved in the share pool without obtaining further shareholder approval. The Purchase Plan provided for a series of overlapping offering periods with a duration of 24 months, generally beginning on May 15 and November 15 of each year. The Purchase Plan allows employees to purchase common shares through payroll deductions of up to 15% of their eligible compensation. Such deductions will accumulate over a six-month accumulation period without interest. After such accumulation period, common

shares will be purchased at a price equal to 85% of the fair market value per share on either the first day of the offering period or the last date of the accumulation period, whichever is less. The maximum number of shares that may be purchased by a participant on any purchase date may not exceed 875 shares for a total of 3,500 shares per a 24-month offering period. In addition, no participant may purchase more than \$25,000 worth of common stock in any one calendar year period. No more than 200,000 common shares may be purchased by all participants on any purchase date.

The ESPP is compensatory and results in compensation expense. The fair values of common shares to be issued under the ESPP were determined using the Black-Scholes option pricing model with the following assumptions:

	Year Ended June 30,		
	2019	2018	2017
Volatility rate	40.1% - 40.7%	42.1% - 45.3%	39.1% - 44.7%
Risk-free interest rate	2.1% - 2.9%	1.4% - 2.6%	0.6% - 1.3%
Expected term	1.3 years	1.3 years	1.3 years
Dividend yield	—%	—%	—%

The weighted-average estimated fair value of employee stock purchase rights granted pursuant to the ESPP during the years ended June 30, 2019, 2018 and 2017 was \$3.84, \$5.81 and \$6.11 per share, respectively.

Share-based Compensation Expenses

The total share-based compensation expense related to TRSU, PSUs, MSUs, stock options and ESPP described above, recognized in the consolidated statements of operations for the years presented was as follows:

	Year Ended June 30,		
	2019	2018	2017
	(in thousands)		
Cost of goods sold	\$ 1,963	\$ 1,641	\$ 1,041
Research and development	2,453	1,855	1,361
Selling, general and administrative	8,761	7,916	4,232
	<u>\$ 13,177</u>	<u>\$ 11,412</u>	<u>\$ 6,634</u>

Total unrecognized share-based compensation expense as of June 30, 2019 was \$13.7 million including estimated forfeitures, which is expected to be recognized over a weighted-average period of 2.0 years.

9. Employee Benefit Plans

The Company maintains a 401(k) retirement plan for the benefit of qualified employees in the U.S. Employees who participate may elect to make salary deferral contributions to the plan up to 100% of the employees' eligible salary subject to annual Internal Revenue Code maximum limitations. The employer's contribution is discretionary. The Company had not made any contributions for eligible employees as of June 30, 2019.

The Company makes mandatory contributions for its employees to the respective local governments in terms of retirement, medical insurance and unemployment insurance, where applicable, according to labor and social security laws and regulations of the countries and areas in which the Company operates. The retirement contribution rate is 7.7% in the U.S., 12.0% to 20.0% in China, and 6.0% in Taiwan. The Company has no obligations for the payment of such social benefits beyond the required contributions as set out above.

10. Income Taxes

The provision for income taxes is comprised of:

	Year Ended June 30,		
	2019	2018	2017
	(in thousands)		
U.S. federal taxes:			
Current	\$ (57)	\$ 55	\$ 1,043
Deferred	(510)	(1,943)	(325)
Non-U.S. taxes:			
Current	1,765	2,898	(4,615)
Deferred	55	(298)	7,548
State taxes, net of federal benefit:			
Current	3	(4)	1
Total provision for income taxes	<u>\$ 1,256</u>	<u>\$ 708</u>	<u>\$ 3,652</u>

The reconciliation of the federal statutory income tax rate to our effective income tax rate is as follows (in percentage):

	Year Ended June 30,		
	2019	2018	2017
United States statutory rate	21.0 %	28.1%	34.0%
Stock-based compensation	0.1	(1.4)	(0.4)
Foreign taxes, net	(40.9)	39.5	(0.7)
Research and development credit	11.7	(17.1)	(4.9)
Non-deductible expenses	(2.7)	7.0	0.2
U.S. Tax Act deferred tax re-measurement	—	(44)	—
Other	1.4	0.4	0.1
	<u>(9.4)%</u>	<u>12.5%</u>	<u>28.3%</u>

The domestic and foreign components of income before taxes are:

	Year Ended June 30,		
	2019	2018	2017
	(in thousands)		
U.S. operations	\$ 4,100	\$ 4,219	\$ 4,016
Non-U.S. operations	(17,482)	1,437	8,896
Income before income taxes	<u>\$ (13,382)</u>	<u>\$ 5,656</u>	<u>\$ 12,912</u>

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of our deferred tax assets and liabilities are as follows:

	June 30,	
	2019	2018
	(in thousands)	
Deferred tax assets:		
Accrued compensation	\$ 1,428	\$ 2,121
Net operating loss carryforwards	16,782	7,213
Depreciation	10,036	10,968
Tax credits	10,882	8,380
Capitalized intangible assets	11,981	12,942
Capitalized Costs	—	2,292
Accruals and reserves	1,000	1,197
Total deferred tax assets	52,109	45,113
Valuation allowance	(35,420)	(30,105)
Total deferred tax assets, net of valuation allowance	16,689	15,008
Deferred tax liabilities:		
Depreciation and amortization	(12,243)	(10,819)
Accruals and reserves	(90)	(10)
Total deferred tax liabilities	(12,333)	(10,829)
Net deferred tax assets	\$ 4,356	\$ 4,179

The breakdown between deferred tax assets and liabilities is as follows:

	June 30,	
	2019	2018
	(in thousands)	
Long-term deferred tax assets	\$ 4,822	\$ 4,892
Long-term deferred tax liabilities	(466)	(713)
Net deferred tax assets	\$ 4,356	\$ 4,179

The Company's valuation allowance related to deferred income taxes as reflected in the consolidated balance sheets was \$35.4 million and \$30.1 million as of June 30, 2019 and 2018, respectively. The change in valuation allowance for June 30, 2019 and 2018 was an increase of \$5.3 million and \$23.9 million, as revised for the correction of the immaterial items described below, respectively.

In fiscal 2019, the Company corrected the prior year balance of deferred tax assets relating to capitalized intangible assets as well as the valuation allowance related to those assets by an equal and offsetting amount. The capitalized intangible assets and valuation allowance as of June 30, 2018 have both been increased in the table above by \$12.9 million relating to certain patent rights and related intellectual property ("IP") (see below). The Company carries a full valuation allowance against the JV Company deferred tax assets, therefore these immaterial adjustments to the disclosure had no effect on the consolidated balance sheet as of June 30, 2018 and consolidated statements of operations and cash flows for the year then ended.

During the quarter ended September 30, 2016, the Company fulfilled its obligations to contribute certain packaging equipment as required by the JV Agreement by transferring the legal titles of such equipment to the JV Company. As a result of the transfer, the Company reduced its deferred tax assets by \$6.6 million and recorded a \$6.6 million in prepaid tax asset, which is amortized to tax expense over the useful life of the assets. On July 1, 2017, we adopted ASU 2016-16, *Intra-Entity Transfers of Assets other than Inventory*, which resulted in a de-recognition of a prepaid tax asset of \$5.5 million related to the prior period intra-entity asset transfer with the JV Company, with an offsetting reduction to retained earnings. In July 2017, the Company contributed to the JV Company certain China patent rights and certain manufacturing related IP, which per ASU 2016-16, resulted in a deferred tax asset of \$12.9 million on the difference between the tax basis and the consolidated U.S. GAAP book value of \$0. Because the JV Company provided a full valuation allowance, there was no change to our net deferred tax assets for the initial adoption of ASU 2016-16.

At June 30, 2019 and 2018, the Company provided a valuation allowance for its state research and development credit carryforward deferred tax assets of \$5.1 million and \$4.4 million, respectively, as it generated more state tax credits each year than it can utilize. The Company intends to maintain a partial valuation allowance equal to the state research and development credit carryforwards in excess of the state net deferred tax liabilities on all other state book/tax differences and net operating loss carryforward. Furthermore, the Company provided a valuation allowance mainly for the net operating loss, fixed asset and intangible asset related to deferred tax assets of the JV Company totaling \$30.3 million and \$25.7 million as of June 30, 2019 and 2018, respectively. The Company intends to maintain a valuation allowance equal to the JV Company's net deferred tax assets until sufficient positive evidence exists to support reversal of the valuation allowance.

At June 30, 2019, the Company had federal net operating loss and research and development tax credit carryforwards of approximately \$24.3 million and \$5.6 million, respectively. The federal net operating losses begin to expire in 2038 and the tax credits begin to expire in 2032, if not utilized. At June 30, 2019, the Company had \$0.6 million of state net operating loss carryforwards and had tax credit carryforwards of approximately \$6.7 million. Approximately \$0.8 million of the state tax credits begin to expire in 2020, if not utilized. The remaining \$5.9 million of the state tax credits carryforward indefinitely. At June 30, 2019, the JV Company had \$77.5 million of net operating loss carryforwards which begin to expire in 2021, if not utilized.

The Company has not provided for withholding taxes on the undistributed earnings of its foreign subsidiaries because it intends to reinvest such earnings indefinitely. As of June 30, 2019, the cumulative amount of undistributed earnings of its foreign entities considered permanently reinvested is \$140.6 million. The determination of the unrecognized deferred tax liability on these earnings is not practicable. Should the Company decide to remit this income to its Bermuda parent company in a future period, its provision for income taxes may increase materially in that period.

A reconciliation of the beginning and ending amount of unrecognized tax benefits from July 1, 2016 to June 30, 2019 is as follows:

	Year Ended June 30,		
	2019	2018	2017
	(in thousands)		
Balance at beginning of year	\$ 7,143	\$ 6,589	\$ 6,743
Additions based on tax positions related to the current year	417	721	401
Reductions based on tax positions related to prior years	(271)	(11)	(4)
Reductions due to lapse of applicable statute of limitations	(139)	(156)	(551)
Balance at end of year	<u>\$ 7,150</u>	<u>\$ 7,143</u>	<u>\$ 6,589</u>

At June 30, 2019, the total unrecognized tax benefits of \$7.2 million included \$6.3 million of unrecognized tax benefits that have been netted against the related deferred tax assets. The remaining \$0.9 million of unrecognized tax benefits was recorded within long-term income tax payable on the Company's consolidated balance sheet as of June 30, 2019. The Company cannot reasonably estimate the timing and amount of potential cash settlements on the unrecognized tax benefits.

The total unrecognized tax benefits of \$7.2 million at June 30, 2019 included \$4.2 million that, if recognized, would reduce the effective income tax rate in future periods. It is reasonably possible that the Company will recognize approximately \$0.2 million reduction to its uncertain tax positions during the next twelve months, related to potential expiration of the relevant statute of limitations.

The Company recognizes interest and penalties related to uncertain tax positions in income tax expense. To the extent accrued interest and penalties do not ultimately become payable, amounts accrued will be reduced and reflected as a reduction of the overall income tax provision in the period that such determination is made. The amount of interest and penalties accrued at June 30, 2019 was \$0.2 million, of which \$0.03 million was recognized in the year ended June 30, 2019. The amount of interest and penalties accrued at June 30, 2018 was \$0.1 million, of which \$(0.01) million was recognized in the year ended June 30, 2018.

The Company files its income tax returns in the United States and in various foreign jurisdictions. The tax years 2001 to 2019 remain open to examination by U.S. federal and state tax authorities. The tax years 2012 to 2019 remain open to examination by foreign tax authorities.

The Company's income tax returns are subject to examinations by the Internal Revenue Service and other tax authorities in various jurisdictions. In accordance with the guidance on the accounting for uncertainty in income taxes, the Company regularly assesses the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of its provision for income taxes. These assessments can require considerable estimates and judgments. If the Company's estimate of income tax liabilities proves to be less than the ultimate assessment, then a further charge to expense would be required. If events occur and the payment of these amounts ultimately proves to be unnecessary, the reversal of the liabilities would result in tax benefits being recognized in the period when the Company determines the liabilities are no longer necessary.

On July 27, 2015, in *Altera Corp. v. Commissioner*, the U.S. Tax Court issued an opinion related to the treatment of stock-based compensation expense in an intercompany cost-sharing arrangement. In the July 2015 ruling, the Tax Court concluded that the sharing of the cost of employee stock compensation in a company's cost-sharing arrangement was invalid under the U.S. Administrative Procedures Act. In June 2019, a panel of the Ninth Circuit of the U.S. Court of Appeals reversed this decision. In July 2019, Altera petitioned U.S. Court of Appeals for the Ninth Circuit to hold an en banc rehearing of the case. Due to the uncertainty surrounding the status of the current regulations and questions related to the scope of potential benefits, the Company has not recorded any benefit as of June 30, 2019. The Company will continue to monitor ongoing developments and potential impacts to its financial statements.

11. Segment and Geographic Information

The Company is organized as, and operates in, one operating segment: the design, development and supply of power semiconductor products for computing, consumer electronics, communication and industrial applications. The chief operating decision-maker is the Chief Executive Officer. The financial information presented to the Company's Chief Executive Officer is on a consolidated basis, accompanied by information about revenue by customer and geographic region, for purposes of evaluating financial performance and allocating resources. The Company has one business segment, and there are no segment managers who are held accountable for operations, operating results and plans for products or components below the consolidated unit level. Accordingly, the Company reports as a single operating segment.

Long-lived assets, net consisting of property, plant and equipment and land use rights, net by geographical area are as follows:

	June 30,	
	2019	2018
	(in thousands)	
China	\$ 321,145	\$ 248,003
United States	87,817	83,040
Other countries	775	613
	<u>\$ 409,737</u>	<u>\$ 331,656</u>

For our revenues by geography, please refer to Note 2.

12. Restricted Net Assets

Laws and regulations in China permit payments of dividends by the Company's subsidiaries in China only out of their retained earnings, if any, as determined in accordance with China accounting standards and regulations. Each China subsidiary is also required to set aside at least 10% of its after-tax profit, if any, based on China accounting standards each year to its statutory reserves until the cumulative amount of such reserves reaches 50% of its registered capital. As a result of these China laws and regulations, the Company's China subsidiaries are restricted in their abilities to transfer a portion of their net assets to the Company. As of June 30, 2019 and 2018, such restricted portion amounted to approximately \$209.5 million and \$184.3 million, or 64.4% and 62.8%, of our total consolidated net assets attributable to the Company, respectively. As the Company's China subsidiaries are not revenue generating operating units, the Company does not expect to repatriate funds in the form of dividends, loans or advances from its China subsidiaries for working capital and other funding purposes.

13. Commitments and Contingencies

Operating lease obligations

The Company leases its office facilities and certain office equipment under non-cancelable operating leases that expire through 2026. Rent expense related to the Company's operating leases was \$4.7 million, \$3.8 million and \$3.4 million for the fiscal years ended June 30, 2019, 2018 and 2017, respectively. Certain leases contain escalation clauses calling for increased rents.

Future minimum lease payments of these leases at June 30, 2019 are as follows:

<u>Year ending June 30,</u>	<u>Operating Leases</u>
	<u>(in thousands)</u>
2020	\$ 4,357
2021	1,741
2022	1,164
2023	894
2024	1,002
Thereafter	149
	<u>\$ 9,307</u>

Purchase commitments

As of June 30, 2019 and 2018, the Company had approximately \$59.5 million and \$38.0 million, respectively, of outstanding purchase commitments primarily for purchases of semiconductor raw materials, wafers, spare parts, packaging and testing services and others.

As of June 30, 2019 and 2018, the Company had approximately \$33.8 million, primarily for the JV Company, and \$58.3 million, respectively, of capital commitments for the purchase of property and equipment.

Other commitments

See Note 1 and Note 6 of the Notes to the Consolidated Financial Statements contained in this annual Report on Form 10-K for descriptions of commitments including Joint Venture and bank borrowings.

Contingencies and indemnities

The Company is currently not a party to any material legal proceedings. The Company has in the past, and may from time to time in the future, become involved in legal proceedings arising from the normal course of business activities. The semiconductor industry is characterized by frequent claims and litigation, including claims regarding patent and other intellectual property rights as well as improper hiring practices. Irrespective of the validity of such claims, the Company could incur significant costs in the defense thereof or could suffer adverse effects on its operations.

The Company is a party to a variety of agreements that it contracted with various parties. Pursuant to these agreements, the Company may be obligated to indemnify another party to such an agreement with respect to certain matters. Typically,

these obligations arise in the context of contracts entered into by the Company, under which the Company customarily agrees to hold the other party harmless against losses arising from a breach of representations and covenants related to such matters as title to assets sold, certain intellectual property rights, specified environmental matters and certain income taxes. In these circumstances, payment by the Company is customarily conditioned on the other party making a claim pursuant to the procedures specified in the particular contract, which procedures typically allow the Company to challenge the other party's claim. Further, the Company's obligations under these agreements maybe limited in time and/or amount, and in some instances, the Company may have recourse against third parties for certain payments made by it under these agreements. The Company has not historically paid or recorded any material indemnifications and no accrual was made at June 30, 2019 and 2018.

The Company has agreed to indemnify its directors and certain employees as permitted by law and pursuant to its by-laws, and has entered into indemnification agreements with its directors and executive officers. The Company has not recorded a liability associated with these indemnification arrangements, as it historically has not incurred any material costs associated with such indemnification obligations. Costs associated with such indemnification obligations may be mitigated by insurance coverage that the Company maintains, however, such insurance may not cover any, or may cover only a portion of, the amounts the Company may be required to pay. In addition, the Company may not be able to maintain such insurance coverage in the future.

Environmental matters

The Company is subject to various federal, state, local, and foreign laws and regulations governing environmental matters, including the use, handling, discharge, and disposal of hazardous materials. The Company believes that it has been in material compliance with applicable environmental regulations and standards. Complying with current laws and regulations has not had a material adverse effect on the Company's financial condition and results of operations. However, it is possible that additional environmental issues may arise in the future, which the Company cannot currently predict.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED (PARENT COMPANY BASIS)
CONDENSED UNCONSOLIDATED BALANCE SHEETS
(in thousands, except par value per share)

	June 30,	
	2019	2018
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 5,284	\$ 4,738
Accounts receivable - Intercompany	—	3,937
Other current assets	325	362
Total current assets	5,609	9,037
Property, plant and equipment, net	119	343
Other long-term assets	242	339
Investment in subsidiaries	459,696	417,185
Total assets	<u>\$ 465,666</u>	<u>\$ 426,904</u>
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable and accrued liabilities	\$ 863	\$ 742
Accounts payable - Intercompany	21,514	—
Total liabilities	22,377	742
Equity:		
Preferred shares, par value \$0.002 per share:		
Authorized: 10,000 shares; Issued and outstanding: none at June 30, 2019 and 2018	—	—
Common shares, par value \$0.002 per share:		
Authorized: 100,000 shares; issued and outstanding: 31,163 shares and 24,517 shares, respectively at June 30, 2019 and 30,400 shares and 23,860 shares, respectively at June 30, 2018	62	61
Treasury shares at cost; 6,646 shares at June 30, 2019 and 6,540 shares at June 30, 2018	(66,240)	(64,790)
Additional paid-in capital	234,410	220,244
Accumulated other comprehensive income	(2,693)	440
Retained earnings	125,485	122,639
Total Alpha and Omega Semiconductor Limited shareholder's equity	291,024	278,594
Noncontrolling interest	152,265	147,568
Total equity	443,289	426,162
Total liabilities and equity	<u>\$ 465,666</u>	<u>\$ 426,904</u>

The accompanying notes to Schedule I are an integral part of these financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED (PARENT COMPANY BASIS)
CONDENSED UNCONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands)

	Year Ended June 30,		
	2019	2018	2017
Revenue	\$ 4,292	\$ 4,096	\$ 3,772
Cost of revenue	—	—	—
Gross profit	4,292	4,096	3,772
Operating expenses:			
General and administrative	4,599	4,479	3,938
Total operating expenses	4,599	4,479	3,938
Operating loss	(307)	(383)	(166)
Interest income	3	7	20
Income (loss) on equity investment in subsidiaries	(14,334)	5,324	9,406
Net income (loss) including noncontrolling interest	(14,638)	4,948	9,260
Net loss attributable to noncontrolling interest	(16,499)	(9,315)	(4,569)
Net income attributable to Alpha and Omega Semiconductor Limited	\$ 1,861	\$ 14,263	\$ 13,829

The accompanying notes to Schedule I are an integral part of these financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED (PARENT COMPANY BASIS)
CONDENSED UNCONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(in thousands)

	Year ended June 30,		
	2019	2018	2017
Net income (loss) including noncontrolling interest	\$ (14,638)	\$ 4,948	\$ 9,260
Other comprehensive income (loss), net of tax			
Foreign currency translation adjustment	(5,937)	244	(1,012)
Comprehensive income (loss)	(20,575)	5,192	8,248
Noncontrolling interest	(19,303)	(9,205)	(5,118)
Comprehensive income (loss) attributable to Alpha and Omega Semiconductor Limited	<u>\$ (1,272)</u>	<u>\$ 14,397</u>	<u>\$ 13,366</u>

The accompanying notes to Schedule I are an integral part of these financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED (PARENT COMPANY BASIS)
CONDENSED UNCONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended June 30,		
	2019	2018	2017
Cash flows from operating activities			
Net income (loss) including noncontrolling interest	\$ (14,638)	\$ 4,948	\$ 9,260
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation	274	464	469
Share-based compensation expense	432	503	428
Equity in net (income) loss of subsidiaries	14,334	(5,324)	(9,406)
Other	—	—	33
Changes in assets and liabilities:			
Accounts receivable - intercompany	3,937	14,316	(4,868)
Other current assets	134	(199)	(134)
Accounts payable and accrued liabilities	121	(182)	256
Accounts payable - intercompany	21,514	—	—
Net cash provided by (used in) operating activities	<u>26,108</u>	<u>14,526</u>	<u>(3,962)</u>
Cash flows from investing activities			
Purchases of property and equipment	(51)	—	—
Investment in subsidiaries	(25,000)	(10,000)	—
Net cash used in investing activities	<u>(25,051)</u>	<u>(10,000)</u>	<u>—</u>
Cash flows from financing activities			
Withholding tax on restricted stock units	(2,028)	(2,363)	(2,071)
Proceeds from exercise of stock options and ESPP	3,018	4,956	10,699
Payments for repurchases of common shares	(1,501)	(15,098)	—
Net cash provided by (used in) financing activities	<u>(511)</u>	<u>(12,505)</u>	<u>8,628</u>
Net increase (decrease) in cash and cash equivalents	<u>546</u>	<u>(7,979)</u>	<u>4,666</u>
Cash and cash equivalents at beginning of year	4,738	12,717	8,051
Cash and cash equivalents at end of year	<u>\$ 5,284</u>	<u>\$ 4,738</u>	<u>\$ 12,717</u>

The accompanying notes to Schedule I are an integral part of these financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED (PARENT COMPANY BASIS)
NOTES TO THE CONDENSED UNCONSOLIDATED FINANCIAL STATEMENTS

1. Basis of Presentation

Alpha and Omega Semiconductor Limited is the parent company of all Alpha and Omega Semiconductor subsidiaries. It was incorporated in Bermuda on September 27, 2000 as an exempted limited liability company. The address of its registered office is Clarendon House, 2 Church Street, Hamilton HM 11, Bermuda.

The accompanying condensed parent company financial statements have been prepared in accordance with Rule 12-04, Schedule I of Regulation S-X, as the restricted net assets of its subsidiaries exceed 25% of the consolidated net assets of Alpha and Omega Semiconductor Limited and its subsidiaries (the "Company").

The parent company records its investment in subsidiaries under the equity method of accounting. Such investment is presented on the balance sheet as "Investment in subsidiaries" and the subsidiaries' net income (loss) are recognized based on the effective shareholding percentage as income on equity investment in subsidiaries on the statement of operations. Intercompany balances and transactions have not been eliminated. The revenue recorded represents intercompany administrative service fees charged by the parent company starting in fiscal year 2013.

Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted. The footnote disclosures contain supplemental information relating to the operations of the Company and, as such, these statements should be read in conjunction with the notes to the consolidated financial statements of the Company.

2. Restricted net assets of subsidiaries

For a discussion of the Company's restricted net assets of subsidiaries, see Note 12 of the Company's consolidated financial statements.

3. Commitments and contingencies

In March 2016, the Company executed the JV Agreement with the Chongqing Funds to form a joint venture for the construction of a new state-of-the-art power semiconductor packaging, testing and wafer fabrication facility in Liangjiang New Area of Chongqing. The Company expects to commence initial packaging production as soon as the required milestones, including certain construction and funding milestones, have been met, and there is no assurance that we can meet these milestones in a timely manner.

In January 2017, the JV Company entered into an Engineering, Procurement and Construction Contract (the "EPC Contract") with The IT Electronics Eleventh Design & Research Institute Scientific and Technological Engineering Corporation Limited. The total price payable by the JV Company under the EPC Contract is approximately \$78.0 million, which consists of \$2.8 million of design fees and \$75.2 million of construction and procurement fees. As of June 30, 2019, we had paid approximately \$69.9 million, and expects to pay the remaining of \$8.7 million in the near term.

For a discussion of the Company's commitments and contingencies, see Note 13 to the Company's consolidated financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
VALUATION AND QUALIFYING ACCOUNTS
(in thousands)

	Allowance for Doubtful Accounts	Allowance for Price Adjustments	Allowance for Deferred Tax Assets
June 30, 2016	\$ 30	\$ 16,700	\$ 2,894
Additions	—	113,970	3,284
Reductions	—	(111,071)	—
June 30, 2017	30	19,599	6,178
Additions	—	124,694	23,927
Reductions	—	(125,391)	—
June 30, 2018	30	18,902	30,105
Additions	—	115,842	5,315
Reductions	—	(110,669)	—
June 30, 2019	<u>\$ 30</u>	<u>\$ 24,075</u>	<u>\$ 35,420</u>

(b) Index to Exhibits:

Number	Description
3.1	<u>Memorandum of Association of Registrant (incorporated by reference to Exhibit 3.1 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)</u>
3.2	<u>Amended and Restated Bye-laws of Registrant (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed with the Commission on November 12, 2015)</u>
3.3	<u>Amendment No. 1 to Amended and Restated Bye-Laws of Registrant (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed with the Commission on November 14, 2017)</u>
4.1	<u>Form of Common Share Certificate (incorporated by reference to Exhibit 4.2 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)</u>
10.1	<u>2000 Share Plan (incorporated by reference to Exhibit 10.1 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)</u>
10.2	<u>Form of Option Agreement under 2000 Share Plan (incorporated by reference to Exhibit 10.2 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)</u>
10.3(+)	<u>2009 Share Option/Share Issuance Plan (incorporated by reference to Exhibit 10.3 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)</u>
10.4(+)	<u>Form of Option Agreement under 2009 Share Plan (incorporated by reference to Exhibit 4.4 from Annual Report on Form 20-F (File No. 001-34717) filed with the Commission on September 2, 2010)</u>
10.5(+)	<u>Form of Restricted Share Unit Issuance Agreement under 2009 Share Plan (incorporated by reference to Exhibit 4.5 from Annual Report on Form 20-F (File No. 001-34717) filed with the Commission on September 2, 2010)</u>
10.6(+)	<u>Employee Share Purchase Plan (incorporated by reference to Exhibit 10.15 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)</u>
10.7††	<u>Foundry Agreement dated as of January 10, 2002 between the Registrant and Shanghai Hua Hong NEC Electronics Company, Limited (incorporated by reference to Exhibit 10.16 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)</u>
10.8††	<u>First Addendum to Foundry Agreement dated as of July 28, 2005 between the Registrant and Shanghai Hua Hong NEC Electronics Company, Limited (incorporated by reference to Exhibit 10.17 from Registration Statement on Form F-1 (File No. 333-165823) initially filed with the Commission on March 31, 2010)</u>
10.9††	<u>Second Addendum to Foundry Agreement dated as of April 11, 2007 between the Registrant and Shanghai Hua Hong NEC Electronics Company, Limited (incorporated by reference to Exhibit 10.18 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)</u>
10.10††	<u>Foundry Service Agreement dated as of November 2, 2009 between Alpha & Omega Semiconductor (Macau), Ltd. and Shanghai Hua Hong NEC Electronics Company, Limited (incorporated by reference to Exhibit 10.6 from Registration Statement on Form F-1 (File No. 333-165823) filed with the Commission on March 31, 2010)</u>
10.11	<u>Non-Exclusive Distributor Agreement dated as of July 27, 2010 between Alpha & Omega Semiconductor (Hong Kong) Limited and Frontek Technology Corporation (incorporated by reference to Exhibit 4.17 from Annual Report on Form 20-F (File No. 001-34717) filed with the Commission on September 2, 2010)</u>
10.12††	<u>Supplement to Non-Exclusive Distributor Agreement dated as of July 27, 2010 between Alpha & Omega Semiconductor (Hong Kong) Limited and Frontek Technology Corporation (incorporated by reference to Exhibit 4.18 from Annual Report on Form 20-F (File No. 001-34717) filed with the Commission on September 2, 2010)</u>
10.13††	<u>First Amendment of Supplement to Distribution Agreement dated as of April 21, 2011 between Alpha & Omega Semiconductor (Hong Kong) Limited and Frontek Technology Corporation (incorporated by reference to Exhibit 10.15 from Annual Report Form 10-K (File No. 001-34717) filed with the Commission on September 9, 2011)</u>

- 10.14 [Supplement to Distribution Agreement dated as of July 27, 2010 between the Registrant and Frontek Technology Corporation \(incorporated by reference to Exhibit 10.1 from Quarterly Report on Form 10-Q \(File No. 001-34717\) filed with the Commission on February 6, 2015\)](#)
- 10.15 [Non-Exclusive Distributor Agreement dated as of July 27, 2010 between Alpha & Omega Semiconductor \(Hong Kong\) Limited and Promate Electronic Co., Ltd. \(incorporated by reference to Exhibit 4.19 from Annual Report on Form 20-F \(File No. 001-34717\) filed with the Commission on September 2, 2010\)](#)
- 10.16†† [Supplement to Non-Exclusive Distributor Agreement dated as of July 27, 2010 between Alpha & Omega Semiconductor \(Hong Kong\) Limited and Promate Electronic Co., Ltd. \(incorporated by reference to Exhibit 4.20 from Annual Report on Form 20-F \(File No. 001-34717\) filed with the Commission on September 2, 2010\)](#)
- 10.17†† [First Amendment of Supplement to Distribution Agreement dated as of April 21, 2011 between Alpha & Omega Semiconductor \(Hong Kong\) Limited and Promate Electronic Co., Ltd. \(incorporated by reference to Exhibit 10.18 from Annual Report Form 10-K \(File No. 001-34717\) filed with the Commission on September 9, 2011\)](#)
- 10.18 [Supplement to Distribution Agreement dated as of July 27, 2010 between the Registrant and Promate Electronic Co., Ltd \(incorporated by reference to Exhibit 10.2 from Quarterly Report on Form 10-Q \(File No. 001-34717\) filed with the Commission on February 6, 2015\)](#)
- 10.19 [Lease dated as of December 23, 2009 between Alpha and Omega Semiconductor Incorporated and OA Oakmead II, LLC \(incorporated by reference to Exhibit 10.19 from Registration Statement on Form F-1 \(File No. 333-165823\) filed with the Commission on March 31, 2010\)](#)
- 10.20 [Guarantee dated as of January 5, 2010 between the Registrant and OA Oakmead II, LLC \(incorporated by reference to Exhibit 10.20 from Registration Statement on Form F-1 \(File No. 333-165823\) filed with the Commission on March 31, 2010\)](#)
- 10.21(+) [Form of Employment Agreement between the Registrant and Mike F. Chang \(incorporated by reference to Exhibit 10.13 from Registration Statement on Form F-1 \(File No. 333-165823\) filed with the Commission on March 31, 2010\)](#)
- 10.22(+) [Form of Retention Agreement \(incorporated by reference to Exhibit 10.14 from Registration Statement on Form F-1 \(File No. 333-165823\) filed with the Commission on March 31, 2010\)](#)
- 10.23(+) [Form of Restricted Shares Purchase Agreement \(incorporated by reference to Exhibit 10.21 from Registration Statement on Form F-1 \(File No. 333-165823\) filed with the Commission on March 31, 2010\)](#)
- 10.24 [Third Addendum to Foundry Agreement dated as of March 6, 2012 by and among the Registrant and Shanghai Hua Hong NEC Electronics Company, Limited \(incorporated by reference to Exhibit 10.34 from Annual Report on Form 10-K \(File No.: 001-34717\) filed with the Commission on August 31, 2012\)](#)
- 10.25(+) [Amended Form of Restricted Share Unit Issuance Agreement \(incorporated by reference to Exhibit 10.35 from Annual Report on Form 10-K \(File No.: 001-34717\) filed with the Commission on August 31, 2012\)](#)
- 10.26(+) [Summary of Fiscal Year 2014 Executive Incentive Plan \(incorporated by reference to Exhibit 10.34 from Annual Report on Form 10-K \(File No: 001-34717\) filed with the Commission on August 30, 2013\)](#)
- 10.27(+) [Form of Director's Share Option Agreement under the Automatic Grant Program \(incorporated by reference to Exhibit 10.1 from Quarterly Report on Form 10-Q \(File No: 001-34717\) filed with the Commission on November 6, 2013\)](#)
- 10.28(+) [Amendment to Automatic Grant Program for Non-Employee Directors under the 2009 Share Option/Share Issuance Plan \(incorporated by reference to Exhibit 10.2 from Quarterly Report on Form 10-Q \(File No: 001-34717\) filed with the Commission on May 9, 2014\)](#)
- 10.29(+) [Form of Restricted Share Unit Agreement \(incorporated by reference to Exhibit 10.3 from Quarterly Report on Form 10-Q \(File No: 001-34717\) filed with the Commission on May 9, 2014\)](#)
- 10.30(+) [Summary of Fiscal Year 2015 Executive Incentive Plan \(incorporated by reference to Exhibit 10.39 from Annual Report on Form 10-K \(File No. 001-34717\) filed with the Commission on August 29, 2014\)](#)

10.31††	<u>Joint Venture Contract on Incorporation of Chongqing Alpha and Omega Semiconductor Limited, dated as of March 29, 2016, among the Registrant, certain subsidiaries of the Registrant, Chongqing Strategic Emerging Industry Equity Investment Fund Partnership (LP), and Chongqing Liangjiang New Area Strategic Emerging Industry Equity Investment Fund Partnership (LP) (English Translation) (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on May 10, 2016)</u>
10.32 (+)	<u>Alpha and Omega Semiconductor Limited Calendar Year 2016 Executive Incentive Plan (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on May 10, 2016)</u>
10.33 (+)	<u>Form of Indemnification Agreement (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on February 9, 2017)</u>
10.34 (+)	<u>Alpha and Omega Semiconductor Limited 2017 Executive Incentive Cash Bonus Plan (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on May 4, 2017)</u>
10.35††	<u>Engineering, Procurement and Construction Contract dated January 10, 2017 between Chongqing Alpha and Omega Semiconductor Limited and The IT Electronics Eleventh Design & Research Institute Scientific and Technological Engineering Corporation Limited (the “EPC Contract”) (English Translation) (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on May 4, 2017)</u>
10.36††	<u>Amendment No. 1 to EPC Contract effective as of January 10, 2017 (English Translation) (incorporated by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q (File No. 001-34717) filed with the Commission on May 4, 2017)</u>
10.37(+)	<u>Alpha and Omega Semiconductor Limited Amended and Restated 2017 Executive Incentive Plan (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the Commission on November 21, 2017)</u>
10.38*††	<u>Financing Lease Contract, dated May 9, 2018, by and between Chongqing Alpha and Omega Semiconductor Limited and Chongqing YinHai Financing Lease Co., Ltd. (English Translation) (incorporated by reference to Exhibit 10.38 from Annual Report on Form 10-K (File No. 001-34717) filed with the Commission on August 23, 2018)</u>
10.39*††	<u>Real Estate Mortgage Contract, dated May 14, 2018, by and between Chongqing Alpha and Omega Semiconductor Limited and the Export-Import Bank of China (English Translation) (incorporated by reference to Exhibit 10.39 from Annual Report on Form 10-K (File No. 001-34717) filed with the Commission on August 23, 2018)</u>
16.1	<u>Letter from Grant Thornton LLP to the Commission dated September 17, 2018 (incorporated by reference to Exhibit 16.1 to the Current Report on Form 8-K filed with the Commission on September 17, 2018)</u>
21.1*	<u>List of Subsidiaries of the Registrant</u>
23.1*	<u>Consent of BDO USA, LLP, independent registered public accounting firm</u>
23.2*	<u>Consent of Grant Thornton LLP, independent registered public accounting firm</u>
31.1*	<u>Certification of Chief Executive Officer required by Rule 13(a)-14(a) under the Exchange Act</u>
31.2*	<u>Certification of Chief Financial Officer required by Rule 13(a)-14(a) under the Exchange Act</u>
32.1*	<u>Certification of Chief Executive Officer required by Rule 13a-14(b) under the Exchange Act and Section 1350 of Chapter 63 of Title 18 of the United States Code</u>
32.2*	<u>Certification of Chief Financial Officer required by Rule 13a-14(b) under the Exchange Act and Section 1350 of Chapter 63 of Title 18 of the United States Code</u>
101.INS	XBRL Instance
101.SCH	XBRL Taxonomy Extension Schema
101.CAL	XBRL Taxonomy Extension Calculation

101.DEF	XBRL Taxonomy Extension Definition
101.LAB	XBRL Taxonomy Extension Labels
101.PRE	XBRL Taxonomy Extension Presentation

* Filed with this Annual Report on Form 10-K.

†† Confidential treatment has been granted for certain information contained in this document pursuant to an order of the Securities and Exchange Commission. Such information has been omitted and filed separately with the Securities and Exchange Commission.

(+) Indicates management contract or compensatory plan or arrangement.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

August 23, 2019

ALPHA AND OMEGA SEMICONDUCTOR LIMITED

By: _____ /s/ MIKE F. CHANG

Mike F. Chang
Chief Executive Officer
(Principal Executive Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Mike F. Chang and Yifan Liang, and each or any one of them, his or her true and lawful attorney-in-fact and agent, with full power of substitution and re-substitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this report, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his or her substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
/s/ <u>MIKE F. CHANG</u> Mike F. Chang, Ph.D.	Chairman of the Board and Chief Executive Officer (Principal Executive Officer)	August 23, 2019
/s/ <u>YIFAN LIANG</u> Yifan Liang	Chief Financial Officer and Corporate Secretary (Principal Financial Officer and Principal Accounting Officer)	August 23, 2019
/s/ <u>YUEH-SE HO</u> Yueh-Se Ho, Ph.D.	Director and Chief Operating Officer	August 23, 2019
/s/ <u>LUCAS S. CHANG</u> Lucas S. Chang	Director	August 23, 2019
/s/ <u>ROBERT I. CHEN</u> Robert I. Chen	Director	August 23, 2019
/s/ <u>KING OWYANG</u> King Owyang	Director	August 23, 2019
/s/ <u>MICHAEL L. PFEIFFER</u> Michael L. Pfeiffer	Director	August 23, 2019
/s/ <u>MICHAEL J. SALAMEH</u> Michael J. Salameh	Director	August 23, 2019

SUBSIDIARIES OF THE REGISTRANT

Subsidiary Name	Incorporated Location	Percentage Owned
Alpha and Omega Semiconductor Incorporated	California, United States	100% owned by AOS
Alpha and Omega Semiconductor (Cayman) Ltd.	Cayman	100% owned by AOS
Alpha and Omega Semiconductor (Shanghai) Co., Ltd.	China	100% owned by AOS
Alpha & Omega Semiconductor (Shenzhen) Limited	China	100% owned by AOS
Alpha & Omega Semiconductor (Hong Kong) Limited	Hong Kong	100% owned by AOS
Alpha & Omega Semiconductor (Macau), Ltd.	Macau	100% owned by AOS
Alpha & Omega Semiconductor (Taiwan) Limited	Taiwan	100% owned by AOS
Alpha & Omega Semiconductor (Germany) GmbH	Germany	100% owned by AOS
Agape Package Manufacturing Ltd.	Cayman	100% owned by AOS
Agape Package Manufacturing (Shanghai) Ltd.	China	100% owned by AOS
Agape Limited	Hong Kong	100% owned by AOS
Jireh Semiconductor Incorporated	Oregon, United States	100% owned by AOS
Chongqing Alpha and Omega Semiconductor Limited	Chongqing, China	51% owned by AOS

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Alpha and Omega Semiconductor Limited
Sunnyvale, California

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3/A(No. 333-214666) and Form S-8 (No.333-166403,333-172173, 333-180126, 333-186480, 333-190935, 333-207987, and 333-228297) of Alpha and Omega Semiconductor Limited of our reports dated August 23, 2019, relating to the consolidated financial statements and financial statement schedules as of and for the year ended June 30, 2019, and the effectiveness of Alpha and Omega Semiconductor Limited's internal control over financial reporting as of June 30, 2019, which appear in this Form10-K.

/s/ BDO USA, LLP
San Jose, California
August 23, 2019

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our reports dated August 23, 2018, with respect to the consolidated financial statements, schedules, and internal control over financial reporting in the Annual Report of Alpha and Omega Semiconductor Limited on Form 10-K for the year ended June 30, 2018. We consent to the incorporation by reference of said reports in the Registration Statements of Alpha Omega Semiconductor Limited and on Forms S-8 (File Nos. 333-207987, 333-190935, 333-186480, 333-180126, 333-172173, and 333-166403); Form S-3 and Form S-3/A (File No. 333-214666).

/s/ GRANT THORNTON LLP

San Francisco, California
August 23, 2019

CERTIFICATION OF CHIEF EXECUTIVE OFFICER**CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Mike F. Chang, certify that:

1. I have reviewed this report on Form 10-K of Alpha and Omega Semiconductor Limited;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 23, 2019

/s/ MIKE F. CHANG

Mike F. Chang
Chief Executive Officer

CERTIFICATION OF CHIEF FINANCIAL OFFICER**CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Yifan Liang, certify that:

1. I have reviewed this report on Form 10-K of Alpha and Omega Semiconductor Limited;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 23, 2019

/s/ YIFAN LIANG

Yifan Liang
Chief Financial Officer
and Corporate Secretary

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. § 1350, AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002**

I, Mike F. Chang, the chief executive officer of Alpha and Omega Semiconductor Limited (the “Company”), certify for the purposes of 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge,

- a. the Annual Report of the Company on Form 10-K for the fiscal year ended June 30, 2019 (the “Report”), fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- b. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 23, 2019

/s/ MIKE F. CHANG

Mike F. Chang
Chief Executive Officer

**CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. § 1350, AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002**

I, Yifan Liang, the chief financial officer of Alpha and Omega Semiconductor Limited (the “Company”), certify for the purposes of 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge,

- a. the Annual Report of the Company on Form 10-K for the fiscal year ended June 30, 2019 (the “Report”), fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- b. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 23, 2019

/s/ YIFAN LIANG

Yifan Liang
Chief Financial Officer
and Corporate Secretary