DIODES
INCORPORATED

2019
Annual Report

DIODES INCORPORATED
2019 LETTER TO STOCKHOLDERS

RECORD FINANCIAL RESULTS

2019 was another record year for Diodes across all financial metrics, generating solid revenue growth as well as increasing profitability and cash flow. Revenue increased 2.9% over 2018 to $1.25 billion, and gross profit increased 7.0% to $465.8 million, or 37.3% of revenue. Revenue growth once again outperformed our served market, which was down 6.6% in 2019, as a result of our design win momentum and product expansion initiatives. Also during the year, we generated record cash flow from operations of approximately $230 million, which enabled us to strengthen our balance sheet and significantly reduce long-term debt to below $100 million. We ended the year with $263 million in cash, cash equivalents and short-term investments, and $525 million of working capital.

TOTAL SOLUTIONS APPROACH ENHANCING GROWTH

Over the past few years, Diodes has been strategically focused on serving as a total solutions provider to our customers. By leveraging our expanded product portfolio and broadened customer relationships, this approach has resulted in our achievement of consistent, above-market performance. It has also resulted in increased market share and content gains across key end equipment, while also enabling us to address new application areas to enhance current and future growth.

FOCUS ON AUTOMOTIVE AND INDUSTRIAL

The automotive and industrial markets have been key focus areas for Diodes over the past several years and have contributed to our market share and content gains across an expanding list of customers. Revenue in the automotive market grew more than 14% in 2019, representing a 29.4% CAGR since 2013. In the industrial end market, revenue grew 10.8% for the full year with a 13.9% CAGR. Together, these two end markets represented 38% of total revenue in 2019, approaching our target of 40% of revenue. We remain well positioned in these end markets to drive further growth and margin expansion.

STRATEGIC ACQUISITIONS SUPPORTING EXPANSION

In April 2019, we acquired Texas Instruments' wafer fabrication facility and operation located in Greenock, Scotland (GFAB), which has provided Diodes additional wafer fab capacity and technical capability to support our growth initiatives, in particular our automotive expansion efforts. Then in August, we announced the proposed acquisition of Lite-On Semiconductor, which represents the next significant step in executing Diodes' strategic growth plan and continued execution toward achieving our goal of $2.5 billion in revenue by 2025. We expect to close this acquisition in the second half of 2020.

INCREASING PROFITABLE GROWTH

Looking forward to 2020, we expect to maintain our strong performance and continued achievement of record results, as we take further steps toward our long-term financial goals of $2.5 billion in revenue, 40% gross margin and 20% operating margin. We have significant operating leverage in our model to deliver increased earnings power on continued revenue growth.

In conclusion, we would like to take this opportunity to thank our employees, customers and partners for once again contributing to Diodes' record results. We would also like to thank our fellow stockholders for your continued support and confidence in Diodes.

Sincerely,

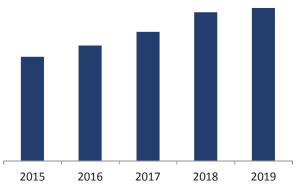
Keh Shew Lu

Dr. Keh-Shew Lu
President & Chief Executive Officer

Raymond Soong

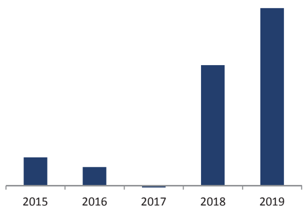
Raymond Soong
Chairman of the Board

FINANCIAL HIGHLIGHTS



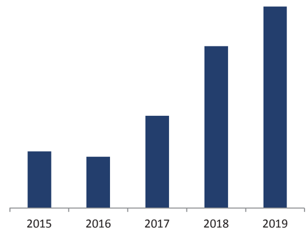
2015 2016 2017 2018 2019
$849 $942 $1,054 $1,214 $1,249

NET SALES
in millions



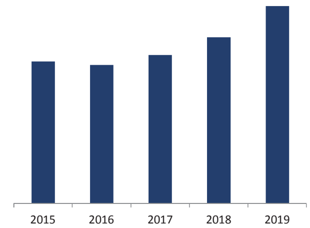
2015 2016 2017 2018 2019
$24 $16 $(2) $104 $153

NET INCOME
COMMON STOCKHOLDERS
in millions



2015 2016 2017 2018 2019
$42 $38 $69 $121 $151

NET INCOME
COMMON STOCKHOLDERS
[NON-GAAP ADJUSTED[1]]
in millions



2015 2016 2017 2018 2019
$795 $776 $832 $931 $1,106

STOCKHOLDERS' EQUITY
in millions

(in thousands, except per share data)	**2019**	2018	2017	2016	2015
NET SALES	**1,249,130**	$ 1,213,989	$ 1,054,204	$ 942,162	$ 848,904
YOY growth	**2.9%**	15.2%	11.9%	11.0%	-4.7%
GROSS PROFIT	**465,807**	435,276	356,776	286,923	248,583
Gross margin	**37.3%**	35.9%	33.8%	30.5%	29.3%
Selling, general and administrative expenses	**181,343**	176,197	168,590	158,321	139,245
Research and development expenses	**88,517**	86,286	77,877	69,937	57,027
Amortization of acquisition-related intangible assets	**18,041**	18,351	18,798	20,478	8,596
Impairment of fixed assets	**-**	390	2,211	114	1,672
Restructuring	**-**	206	10,137	12	-
(Gain) on disposal of fixed assets	**(24,429)**	(636)	(245)	-	-
Other	**1,727**	-	(1)	70	(59)
TOTAL OPERATING EXPENSES	**265,199**	280,794	277,367	248,932	206,481
Income from operations	**200,608**	154,482	79,409	37,991	42,102
Interest (expense), net	**(5,704)**	(7,923)	(11,973)	(11,900)	(3,226)
Gain (loss) on securities carried at fair value	**-**	-	-	-	400
Foreign currency (loss) gain, net	**(3,737)**	(3,701)	(7,995)	2,171	1,257
Impairment of cost-basis investment	**-**	-	-	(3,218)	-
Other income (expense)	**7,079**	7,104	3,150	(9)	62
INCOME before income taxes and noncontrolling interest	**198,246**	149,962	62,591	25,035	40,595
Income tax provision	**44,131**	44,556	62,325	6,558	14,082
Net income	**154,115**	105,406	266	18,477	26,513
Less: net income - noncontrolling interest	**(865)**	(1,385)	(2,071)	(2,542)	(2,239)
NET (LOSS) INCOME - COMMON STOCKHOLDERS (GAAP)	**$ 153,250**	$ 104,021	$ (1,805)	$ 15,935	$ 24,274
NET INCOME - COMMON STOCKHOLDERS (non-GAAP adjusted)1	**$ 151,089**	$ 121,261	$ 69,121	$ 38,381	$ 42,345
EARNINGS (LOSS) PER SHARE, diluted (GAAP)	**$ 2.96**	$ 2.04	$ (0.04)	$ 0.32	$ 0.49
EARNINGS PER SHARE, diluted (non-GAAP adjusted)1	**$ 2.91**	$ 2.38	$ 1.37	$ 0.77	$ 0.86
Number of diluted shares	**51,860**	50,935	50,340	49,789	49,500
Total assets	**$ 1,639,384**	$ 1,526,371	$ 1,488,673	$ 1,528,552	$ 1,598,827
Working capital	**524,637**	480,814	415,162	547,409	570,888
Long-term debt, net of current portion	**64,401**	186,143	247,492	413,126	453,738
Total Diodes Incorporated stockholders' equity	**1,106,424**	931,463	831,504	776,019	795,345

1 - For a reconciliation of GAAP net income to non-GAAP adjusted net income, see "Additional Information" located near the end of this report.

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

FORM 10-K

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 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: 002-25577

DIODES INCORPORATED
(Exact name of registrant as specified in its charter)

Delaware	**95-2039518**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
4949 Hedgcoxe Road, Suite 200 Plano, Texas	**75024**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (972) 987-3900

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, Par Value $0.66 2/3	**DIOD**	**The NASDAQ Stock Market LLC**

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 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 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 the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act:

Large accelerated filer	☑	Accelerated filer	☐
Non-accelerated filer	☐	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 Act). Yes ☐ No ☑

The aggregate market value of the 40,839,470 shares of Common Stock held by non-affiliates of the registrant, based on the closing price of $36.37 per share of the Common Stock on the Nasdaq Global Select Market on June 28, 2019, the last business day of the registrant's most recently completed second fiscal quarter, was approximately $1.5 billion.

The number of shares of the registrant's Common Stock outstanding as of February 4, 2020 was 51,206,969.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement to be filed with the United States Securities and Exchange Commission ("SEC") pursuant to Regulation 14A in connection with the 2020 annual meeting of stockholders are incorporated by reference into Part III of this Annual Report. The proxy statement will be filed with the SEC not later than 120 days after the registrant's fiscal year ended December 31, 2019.

TABLE OF CONTENTS

PART I

Item 1. Business.

GENERAL

Diodes Incorporated and its subsidiaries (collectively, the "Company" or "we" or "our") is a leading global manufacturer and supplier of high-quality, application-specific standard products within the broad discrete, logic, analog and mixed-signal semiconductor markets. We were incorporated in 1959 in California and reincorporated in Delaware in 1968. We serve the consumer electronics, computing, communications, industrial, and automotive markets. Our products include diodes, rectifiers, transistors, MOSFETs, protection devices, function-specific arrays, single gate logic, amplifiers and comparators, Hall-effect and temperature sensors, power management devices, including LED drivers, AC-DC converters and controllers, DC-DC switching and linear voltage regulators, and voltage references along with special function devices, such as USB power switches, load switches, voltage supervisors, and motor controllers. Diodes also has timing, connectivity, switching, and signal integrity solutions for high-speed signals. Our corporate headquarters and Americas' sales offices are located in Plano, Texas and Milpitas, California. Design, marketing, and engineering centers are located in Plano; Milpitas; Taipei, Taoyuan City, and Zhubei City, Taiwan; Oldham, England; and Neuhaus, Germany. Our wafer fabrication facilities are located in Oldham; Shanghai, China; and Greenock, Scotland. We have assembly and test facilities located in Shanghai, Jinan, and Chengdu, China; as well as in Hong Kong; Neuhaus; and Taipei. Additional engineering, research and development, sales, warehouse, and logistics offices are located in Taipei; Hong Kong; Oldham; Shanghai; Shenzhen and Yangzhou, China; Seongnam-si, South Korea; Munich, Germany; and Tokyo, Japan, with support offices throughout the world.

We design, manufacture and market these semiconductors for diverse end-use applications. Semiconductors, which provide electronic signal amplification and switching functions, are basic building-blocks that are incorporated into almost every electronic device. We believe that our focus on application-specific standard products utilizing innovative, highly efficient packaging and cost-effective process technologies, coupled with our collaborative, customer-focused product development, gives us a meaningful competitive advantage relative to other semiconductor companies.

Our product portfolio addresses the design needs of advanced electronic equipment, including high-volume consumer electronic devices such as digital media players, smartphones, tablets, notebook computers, flat-panel displays, mobile handsets, digital cameras and set-top boxes. We believe that we have particular strength in designing innovative, highly power-efficient semiconductors in miniature packaging for applications with a critical need to minimize product size while maximizing power density and overall performance, and at a lower cost than alternative solutions. Our product line includes over 25,000 products, and we shipped approximately 43 billion units in 2019 and 46 billion units in each of 2018 and 2017. From 2015 to 2019, our annual net sales grew from $848.9 million to $1.2 billion, representing a compound annual growth rate of approximately 7%.

BUSINESS OUTLOOK

During 2019, our annual revenue grew $35.1 million or 2.9% from the previous record revenue achieved in 2018. This increase in revenue for 2019 compared to 2018 exhibits progress toward our previously stated goals for 2025 of $2.5 billion in revenue with gross margin of 40%, representing gross profit of $1.0 billion. Acquisitions remain a key part of our growth strategy to reach our revenue goal and in the third quarter of 2019 we entered into a Share Swap Agreement that provides for the acquisition of Lite-On Semiconductor Corporation ("LSC") and its subsidiaries by the Company. At the effective date of the transaction, each share of LSC will be converted into the right to receive TWD $42.50 per share in cash, or approximately US $1.42 per share based on December 31, 2019 exchange rates. The aggregate consideration payable by the Company, based on the December 31, 2019 exchange rate, is approximately $437 million. This amount is subject to change, based on the Taiwan dollar to United States dollar exchange rate at closing. The acquisition received LSC shareholder approval on October 25, 2019, and we anticipate completing the acquisition in the second half of 2020, subject to customary closing conditions and regulatory approvals. We expect to fund the purchase price of the transaction primarily with proceeds from a new bank financing arrangement.

We have a solid pipeline of designs and expanded customer relationships across all regions and product lines. The success of our business depends on, among other factors, the strength of the global economy and the stability of the financial markets, our customers' demand for our products, the ability of our customers to meet their payment obligations, the likelihood of customers not canceling or deferring existing orders, and the strength of consumers' demand for items containing our products in the end-markets we serve. We believe the long-term outlook for our business remains generally favorable, despite the uncertainties in the global economy, as we continue to execute on the strategy that has proven successful for us over the years. See "Management's Discussion and Analysis of Financial Condition and Results of Operations – Business Outlook" in Part II, Item 7 and "Risk Factors – *The success of our business depends on the strength of the global economy and the stability of the financial markets, and any weaknesses in these areas may have a material adverse effect on our net sales, operating results and financial condition."* in Part I, Item 1A of this Annual Report for additional information.

SEGMENT INFORMATION AND ENTERPRISE-WIDE DISCLOSURES

For financial reporting purposes, we operate in a single segment, standard semiconductor products, through our various design, manufacturing and distribution facilities. We sell product primarily through our operations in Asia, North America and Europe. See Note 16 of "Notes to Consolidated Financial Statements" of this Annual Report for addition information.

OUR INDUSTRY

Semiconductors are critical components used in the manufacture of a broad range of electronic products and systems. Since the invention of the transistor in 1948, continuous improvements in semiconductor processes and design technologies have led to smaller, more complex and more reliable devices at a lower cost per function. The availability of low-cost semiconductors, together with increased customer demand for sophisticated electronic systems, has led to the proliferation of semiconductors in diverse end-use applications.

OUR COMPETITIVE STRENGTHS

We believe our competitive strengths include the following:

Flexible, scalable and cost-effective manufacturing – Our manufacturing operations are a core element of our success, and we have designed our manufacturing base to allow us to respond quickly to changes in demand trends in the end-markets we serve. For example, we have structured our assembly and test facilities to enable us to rapidly and efficiently add capacity and adjust product mix to meet shifts in customer demand and overall market trends. Our manufacturing facilities located in Shanghai and Chengdu provide us with access to a workforce at a relatively low overall cost base while enabling us to better serve our leading customers, many of which are located in Asia. See "Risk Factors – *During times of difficult market conditions, our fixed costs combined with lower net sales and lower profit margins may have a negative impact on our business, operating results and financial condition."* in Part I, Item 1A of this Annual Report for additional information.

Integrated packaging expertise – Our expertise in designing and manufacturing innovative and proprietary packaging solutions enables us to package a variety of different device functions into an assortment of packages ranging from miniature chip-scale packaging to packages that integrate multiple separate discrete and/or analog chips into a single semiconductor product called an array. Our ability to design and manufacture multi-chip semiconductor solutions as well as advanced integrated devices provides our customers with products of equivalent functionality with fewer individual parts, and at lower overall cost, than alternative products. This combination of integration, functionality and miniaturization makes our products well suited for high-volume consumer electronic devices such as appliances, chargers, digital cameras, DVD and Blu-Ray players, global positioning devices, lighting, LED televisions, LCD panels, set-top boxes and consumer portables such as smartphones, tablets and notebooks.

Broad customer base and diverse end-markets – Our customers are comprised of leading direct sales customers as well as major electronic manufacturing services ("EMS") providers. Overall, we serve over 230 direct sales customers worldwide and tens of thousands of additional customers through our 83 distributors. Our products are ultimately used in end-products in a number of markets served by our broad customer base, which we believe makes us less susceptible to market fluctuations driven by either specific customers or specific end-user applications.

Customer-focused product development – Effective collaboration with our customers and a commitment to customer service are essential elements of our business. We believe focusing on dependable delivery and support tailored to specific end-user applications has fostered deep customer relationships and created a key competitive advantage for us in the highly fragmented discrete, logic and analog and mixed-signal semiconductor marketplace. We believe our close relationships with our customers have provided us with keener insight into our customers' product needs. This results in a stronger demand for our product designs and often provides us with insight into additional opportunities for new design wins in our customers' products. See "Risk Factors – *We are and will continue to be under continuous pressure from our customers and competitors to reduce the price of our products, which could adversely affect our growth and profit margins"* in Part I, Item 1A of this Annual Report for additional information.

Management experience – The members of our executive team average over 30 years of industry experience, and the length of their service has created significant institutional insight into our markets, our customers and our operations. See "Risk Factors – *We may fail to attract or retain the qualified technical, sales, marketing, finance and management/executive personnel required to operate our business successfully, which could adversely affect our business, operating results and financial condition."* in Part I, Item 1A of this Annual Report for additional information.

OUR STRATEGY

Our strategy is to continue to enhance our position as a leading global designer, manufacturer and supplier of high-quality application-specific standard semiconductor products, utilizing our innovative and cost-effective assembly and test (packaging) technology and leveraging our process expertise and design excellence to achieve above-market growth in profitability.

The principal elements of our strategy include the following:

Continue to rapidly introduce innovative discrete, logic and analog and mixed-signal semiconductor products – We intend to maintain our rapid pace of new product introductions, especially for high-volume, high-growth applications with short design cycles, such as LCD and LED televisions and panels, set-top boxes, portables such as smartphones, tablets and notebooks along with other consumer electronics and computing devices, as well as added emphasis on products for the LED lighting market and the industrial and automotive markets. During 2019 and 2018, we continued to achieve many significant new design wins with our direct sales customers. Although a design win from a customer does not necessarily guarantee future sales to that customer, we believe that continued introduction of new and well-defined product solutions is critically important in maintaining and extending our market share in the highly competitive semiconductor marketplace. See "Risk Factors – *Obsolete inventories as a result of changes in demand for our products and change in life cycles of our products could adversely affect our business, operating results and financial condition."* in Part I, Item 1A of this Annual Report for additional information.

Expand our available market opportunities – We believe we have many paths to increasing our addressable market opportunity. From a product perspective, we intend to continue expanding our product portfolio by developing derivative and enhanced performance devices that target adjacent markets and end-equipment. We will continue to cultivate new and emerging customers within our targeted markets, further increasing our already broad customer base. As we focus on new customers, we try to expand our product portfolio penetration within these new, as well as existing, customers. As we expand our extensive range of high power efficiency and small form factor packages, we plan to introduce new and existing product functions in these new packages to allow an even greater market range.

Maintain intense customer focus – We intend to continue to strengthen and deepen our customer relationships. We believe that continued focus on customer service is important and will help to increase our net sales, operating performance and market share. To accomplish this, we intend to continue to closely collaborate with our customers to design products that meet their specific needs. A critical element of this strategy is to further reduce our design cycle time in order to quickly provide our customers with innovative products. Additionally, to support our customer-focused strategy, we continue to expand our sales force and field application engineers, particularly in Asia and Europe, during periods of growth. See "Risk Factors – *We are and will continue to be under continuous pressure from our customers and competitors to reduce the price of our products, which could adversely affect our growth and profit margins."* in Part I, Item 1A of this Annual Report for additional information.

Enhance cost competitiveness – A key element of our success is our overall low-cost manufacturing base. While we believe our manufacturing facilities are among the most efficient in the industry, we will continue to refine our proprietary manufacturing processes and technology to achieve additional cost efficiencies. We have continued to make capital expenditures to enhance our existing manufacturing capabilities.

Pursue selective strategic acquisitions – As part of our strategy to expand our semiconductor product offerings and to maximize our market opportunities, we may acquire technologies, product lines or companies in order to enhance our product portfolio and accelerate our new product offerings. Since 2006 we have acquired five companies that enhanced our product portfolio, including Pericom Semiconductor Corporation ("Pericom") in 2015 and in 2019, we acquired from Texas Instruments a 200mm wafer fabrication facility and operations located in Greenock, Scotland ("GFAB"). The acquisition of GFAB not only adds to our existing global footprint, but also provides expanded wafer capacity to support our product growth, in particular for the automotive market. Acquisitions remain a key part of our growth strategy to reach our revenue goal, and in the third quarter of 2019 we entered into a Share Swap Agreement that provides for the acquisition of LSC and its subsidiaries by the Company. At the effective date of the transaction, each share of LSC will be converted into the right to receive TWD $42.50 per share in cash, or approximately US $1.42 per share based on December 31, 2019 exchange rates. The aggregate consideration payable by the Company, based on the December 31, 2019 exchange rate, is approximately $437 million. This amount is subject to change, based on the Taiwan dollar to United States dollar exchange rate at closing. The acquisition received LSC shareholder approval on October 25, 2019, and we anticipate completing the acquisition in the second half of 2020, subject to customary closing conditions and regulatory approvals. We expect to fund the purchase price of the transaction primarily with proceeds from a new bank financing arrangement.

See "Risk Factors – *Part of our growth strategy involves identifying and acquiring companies. We may be unable to identify suitable acquisition candidates or consummate desired acquisitions and, if we do make any acquisitions, we may be unable to successfully integrate any acquired companies with our operations, which could adversely affect our business, operating results and financial condition"* in Part I, Item 1A and Note 20 Note 22 of "Notes to Consolidated Financial Statements" of this Annual Report for additional information.

OUR PRODUCTS

Our product portfolio includes over 25,000 products that are designed for use in high-volume consumer electronic devices such as LCD and LED televisions and LCD panels, set-top boxes and consumer portables such as smartphones, tablets and notebooks. Our focus is on low pin count semiconductor devices with one or more active and/or passive components. We target and serve end-equipment markets that we believe have larger volumes than other end-market segments served by the overall semiconductor industry.

Our broad product line includes:

- Discrete semiconductor products, including: performance Schottky rectifiers; performance Schottky diodes; Zener diodes and performance Zener diodes, including tight tolerance and low operating current types; standard, fast, super-fast and ultra-fast recovery rectifiers; bridge rectifiers; switching diodes; small signal bipolar transistors; prebiased transistors; MOSFETs; thyristor surge protection devices; and transient voltage suppressors;
- Analog products, including: power management devices such as AC-DC and DC-DC converters, USB power switches, low dropout and linear voltage regulators; standard linear devices such as operational amplifiers and comparators, current monitors, voltage references, and reset generators; LED lighting drivers; audio amplifiers; and sensor products including Hall-effect sensors and motor drivers;
- Standard logic products including low-voltage complementary metal-oxide-semiconductor ("CMOS") and advanced high-speed CMOS devices; ultra-low power CMOS logic; and analog switches;
- Multichip products and co-packaged discrete, analog and mixed-signal silicon in miniature packages;
- Silicon and silicon epitaxial wafers used in manufacturing these products; and
- Frequency Control Products ("FCP") used in many of today's advanced electronic systems. FCPs are electronic components that provide frequency references such as crystals and oscillators for computer, communication and consumer electronic products.

The following table lists the end-markets, some of the applications in which our products are used, and the percentage of net sales for each end-market for the last three years:

End-Markets *	2019	2018	2017	End product applications
Industrial	28%	26%	23%	Lighting, power supplies, DC-DC conversion, security systems, motor controls, DC fans, proximity sensors, solenoid and relay driving, solar panel, HAVC/LED lighting, retrofit bulb
Consumer Electronics	23%	25%	26%	Digital audio players and cameras, set-top boxes, LCD and LED TV's, game consoles, portable GPS, fitness and health monitors, action cameras, smart watches
Communications	23%	24%	25%	Mobile handsets, smartphones, IP in gateways, routers, switches, hubs, fiber optics
Computing	16%	17%	18%	Notebooks, tablets, LCD monitors, printers, solid state and hard disk drive, servers, mass storage, cloud
Automotive	10%	9%	8%	Comfort controls, lighting, audio/video, GPS navigation, satellite radios, electronics

** Amounts in the table may not total 100% due to rounding*

PRODUCT PACKAGING

Our device packaging technology includes a wide variety of innovative surface-mounted packages. Our focus on the development of smaller, more thermally efficient, and increasingly-integrated packaging, is a critical component of our product development. We provide a comprehensive offering of miniature high power density packaging, enabling us to fit our components into smaller and more efficient packages, while maintaining the same device functionality and power handling capabilities. Smaller packaging provides a reduction in the height, weight and board space required for our components. Our products are well suited for battery-powered, hand-held and wireless consumer electronic applications and high-volume consumer electronic devices such as LCD and LED televisions and LCD panels, set-top boxes and consumer portables such as smartphones, tablets and notebooks.

CUSTOMERS

We serve over 230 direct customers worldwide, including major direct sales customers and EMS providers. Additionally, we have 83 distribution customers worldwide, through which we indirectly serve tens of thousands of customers. Our customers represent: (i) leading direct sales customers including a broad range of industries, such as Continental AG, Delta Electronics, Honeywell, Osram, Philips, Arris, Hella, LG Electronics, Quanta Computer, Seagate, Sagem Communication, and Samsung Electronics; (ii) leading EMS providers, such as Celestica, Flextronics, Hon Hai Precision Industry, Inventec, Jabil Circuit, and Sanmina-SCI, who build end-market products incorporating our semiconductors for companies such as Google, GoPro, Cisco, Dell, EMC, Intel, Microsoft, Thompson, and Roche Diagnostics; and (iii) leading distributors such as Arrow, Avnet, Future Electronics, Rutronik, Yosun Industrial, DigiKey, and Zenitron.

For the years 2019, 2018 and 2017, our direct sales and EMS customers together accounted for 33%, 29% and 32%, respectively, of our net sales. One customer, a broad-based distributor serving thousands of customers, accounted for 10% or more of our net sales in 2019, 2018 and 2017, but not 10% of our outstanding accounts receivable at December 31, 2019 or 2018. In addition, for information concerning our business with related parties, see "Business – Certain Relationships and Related Party Transactions."

We believe that our close relationships with our customers have provided us with deeper insight into our customers' product needs. In addition to seeking to expand relationships with our existing customers, our strategy is to pursue new customers and diversify our customer base by focusing on leading global consumer electronics companies and their EMS providers and distributors. See "Risk Factors – *Our customers require our products to undergo a lengthy and expensive qualification process without any assurance of product sales and may demand to audit our operations from time to time. A failure to qualify a product or a negative audit finding could adversely affect our net sales, operating results and financial condition."* in Part I, Item 1A of this Annual Report for additional information.

We generally warrant that products sold to our customers will, at the time of shipment, be free from defects in workmanship and materials and conform to our approved specifications. Subject to certain exceptions, our standard warranty extends for a period of one year from the date of shipment. Warranty expense has not been significant. Generally, our customers may cancel orders on short notice without incurring a penalty. See "Risk Factors – *Our customer orders are subject to cancellation or modification usually with no penalty. High volumes of order cancellation or reduction in quantities ordered could adversely affect our net sales, operating results and financial condition."* in Part I, Item 1A of this Annual Report for additional information.

Many of our customers are based in Asia or have manufacturing facilities in Asia. Net sales by country consist of sales to customers in that country based on the country to which products are shipped. We report net sales based on "shipped to" customer locations as we believe this best represents where our customers' business activities occur. The table below sets forth net sales by country. "All others" represents countries with less than 3% of total net sales each.

	Percentage of Net Sales		
	2019	**2018**	**2017**
China	51%	55%	56%
U.S.	8%	10%	8%
Korea	5%	5%	6%
Germany	6%	8%	7%
Singapore	5%	6%	6%
Taiwan	7%	6%	6%
All others	18%	10%	11%
Total	100%	100%	100%

SALES AND MARKETING

We market and sell our products worldwide through a combination of direct sales and marketing personnel, independent sales representatives and distributors. We have direct sales personnel in the U.S., the U.K., France, Germany, Korea, Hong Kong, Taiwan and China. We also have independent sales representatives in the U.S., Asia, and Europe. In addition, we have distributors in the U.S., Asia, and Europe. As of December 31, 2019, our direct global sales and marketing organization consisted of approximately 391 employees operating out of 18 offices. We have sales and marketing offices or representatives in Taipei, Taiwan; Shanghai, Shenzhen, Wuhan, Guangzhou, Jinan, Qingdao, China; Gyeonggi, South Korea; Munich, Frankfurt, Germany; Oldham, U.K.; Tokyo, Japan; and Plano, Texas, USA. As of December 31, 2019, we also had approximately 18 independent sales representative firms marketing our products.

Our marketing group focuses on our product strategy, product development roadmap, new product introduction process, demand assessment and competitive analysis. Our marketing programs include participation in industry tradeshows, technical conferences and technology seminars, sales training and public relations. Our marketing group works closely with our sales and research and development teams to align our product development roadmap. Our marketing group coordinates its efforts with our product development, operations and sales groups, as well as with our customers, sales representatives and distributors. We support our customers through our global field application engineering and customer support organizations.

Our website, www.diodes.com, features an extensive online product catalog with advanced search capabilities. This, coupled with a comprehensive competitor cross-reference search, facilitates quick and thorough product selection. Our website also provides easy access to our worldwide sales contacts and customer support and incorporates a distributor-inventory check to provide component inventory availability.

MANUFACTURING OPERATIONS AND FACILITIES

We operate two assembly and test facilities located in Shanghai, China, two in Chengdu, China and one in Neuhaus, Germany. We have two 150mm wafer fabrication facilities located in Shanghai, a 150mm wafer fabrication facility located in Oldham, U.K. and GFAB, a 150mm and 200mm capable wafer fabrication facility located in Greenock, Scotland that we acquired in 2019. The acquisition of GFAB not only adds to Diodes' existing global footprint, but also provides expanded wafer capacity to support our product growth, in particular for the automotive market. One of our Shanghai facilities has completed qualification on the production of 200mm wafers.

In 2010, we entered into an agreement with the Management Committee of the Chengdu Hi-Tech Industrial Development Zone (the "CDHT"). In connection with the agreement with CDHT, we formed a joint venture entity with a Chinese company, Chengdu Ya Guang Electronic Company Limited ("Ya Guang"), to establish a semiconductor assembly and test manufacturing facility in Chengdu, China. We currently own approximately 98% of the equity of the joint venture entity. The CDHT granted the joint venture entity a 50-year land lease, provides corporate and employee tax incentives, tax refunds, subsidies and other financial support. We believe this arrangement will be a long-term, multi-year project that will provide us additional capacity as needed. As of December 31, 2019, we have invested in this joint venture approximately $178.3 million, primarily for infrastructure, buildings and equipment-related capital expenditures.

In the third quarter of 2019 we entered into a Share Swap Agreement that provides for the acquisition of LSC by the Company. At the effective date of the transaction, each share of LSC will be converted into the right to receive TWD $42.50 per share in cash, or approximately US $1.42 per share based on December 31, 2019 exchange rates. The aggregate consideration to be paid by the Company, based on the December 31, 2019 exchange rate, is approximately $437 million. This amount is subject to change, based on the Taiwan dollar to United States dollar exchange rate at closing. The acquisition received LSC shareholder approval on October 25, 2019, and we anticipate completing the acquisition in the second half of 2020, subject to customary closing conditions and regulatory approvals. We expect to fund the purchase price of the transaction primarily with proceeds from a new bank financing arrangement.

For the years ending December 31, 2019 and 2018, our total capital expenditures were approximately $96.2 million and $79.7 million, respectively. The majority of our capital expenditures are in China.

Our manufacturing processes use many raw materials, including silicon wafers, aluminum and copper lead frames, gold and copper wire and other metals, molding compounds and various chemicals and gases. We also rely on equipment and finished product suppliers. We are continuously evaluating our raw material costs in order to reduce our consumption while protecting and maintaining product performance. We have no material agreements with any of our suppliers that impose minimum or continuing supply obligations. From time to time, suppliers may extend lead-times, limit supplies or increase prices due to capacity constraints or other factors. Although we believe that supplies of the raw materials we use are currently and will continue to be available, shortages could occur in various essential materials due to interruption of supply or increased demand in the industry. See "Risk Factors – *We depend on third-party suppliers for timely deliveries of raw materials, manufacturing services, product and process development, parts and equipment, as well as finished products from other manufacturers, and our reputation with customers, operating results and financial condition could be adversely affected if we are unable to obtain adequate supplies in a timely manner."* in Part I, Item 1A of this Annual Report for additional information.

Our corporate headquarters is located in a facility we own in Plano, Texas. We also lease or own properties around the world for use as sales and administrative offices, research and development centers, manufacturing facilities, warehouses and logistics centers. The size or location of these properties can change from time to time based on our business requirements. See "Properties" in Part I, Item 2 of this Annual Report for additional information.

BACKLOG

The amount of backlog to be shipped during any period is dependent upon various factors, and orders are subject to cancellation or modification, usually with no penalty to the customer. Orders are generally booked from one month to greater than twelve months in advance of delivery. The rate of booking of new orders can vary significantly from month to month. We, and the industry as a whole, continue to experience a trend towards shorter customer-requested lead-times, and we expect this trend to continue. The amount of backlog at any date depends upon various factors, including the timing of the receipt of orders, fluctuations in orders of existing product lines, and the introduction of new product lines. Accordingly, we believe that the amount of our backlog at any date is not an accurate measure of our future sales. We strive to maintain proper inventory levels to support our customers' just-in-time order expectations. Our backlog of orders, based on expected ship date, was $278.7 million at December 31, 2019 and $394.2 million at December 31, 2018.

PATENTS, TRADEMARKS AND LICENSES

Historically, patents and trademarks have not been material to our operations, but we expect them to become more important, particularly as they relate to our miniature and power-efficient packaging technologies.

Our initial product patent portfolio was primarily composed of discrete technologies. In the late 1990s, our engineers began to research and develop innovative packaging technologies, which produced several important breakthroughs and patents, such as the PowerDI® series of packaging technology to foster our growth in the semiconductor industry.

Our 2006 acquisition of Anachip Corp., a fabless semiconductor company, initiated our presence in the analog product market with a portfolio of standard linear and low dropout regulator products, among others.

Through our acquisition of the assets of APD Semiconductor, Inc. in 2006, we acquired the SBR® patents and trademark. SBR® is a state-of-the-art integrated circuit wafer processing technology, which is able to integrate and improve the benefits of the two existing rectifier technologies into a single device. The creation of a finite conduction cellular IC, combined with inherent design uniformity, has allowed manufacturing costs to be kept competitive with the existing power device technology, and thus has produced a breakthrough in rectifier technology.

In 2008, we acquired Zetex Semiconductor ("Zetex"), which subsequently increased our available discrete and analog technologies with patents and trademarks for bipolar transistors and power management products such as LED drivers. LED drivers support a wide range of applications for automotive, safety and security, architecture, and portable lighting and are highly efficient and cost effective.

In 2012, we acquired Power Analog Microelectronics, Inc. ("PAM"), a provider of advanced analog and high-voltage power ICs. PAM's product portfolio includes Class D audio amplifiers, DC-DC converters and LED backlighting drivers, which strengthened our position as a global provider of high-quality and high-efficiency, space-saving analog products by expanding our product portfolio with innovative "filter-less" digital audio amplifiers, application-specific power management ICs, as well as high-performance LED drivers and DC-DC converters.

We acquired BCD Semiconductor Manufacturing Limited ("BCD"), a leading supplier of standard linear and power management devices in 2013. BCD has a product portfolio that includes AC-DC and DC-DC solutions for chargers and power adapters. BCD's established presence in Asia, with a particularly strong local market position in China, offers us even greater participation in the consumer electronics, computing and communications end-markets.

Pericom, acquired by us in 2015, designs, develops and markets high-performance ICs and FCPs used in many of today's advanced electronic systems. ICs include functions that support the connectivity, timing and signal conditioning of high-speed parallel and serial protocols that transfer data among a system's microprocessor, memory and various peripherals, such as displays and monitors, and between interconnected systems. FCPs are electronic components that provide frequency references such as crystals and oscillators for computer, communication and consumer electronic products. Pericom's analog, digital and mixed-signal ICs, together with legacy FCPs enable higher system bandwidth and signal quality, resulting in better operating reliability and signal integrity, and lower overall system cost in applications such as notebook computers, servers, network switches and routers, storage area networks, digital TVs, cell phones, GPS devices and digital media players.

Currently, our licensing of patents to other companies is not material. We do, however, license certain product technology from other companies, but we do not consider licensed technology royalties paid by us to be material. We believe the duration and other terms of the licenses are appropriate for our current needs. See "Risk Factors – *We may be subject to claims of infringement of third-party intellectual property rights or demands that we license third-party technology, which could result in significant expense, reduction in our intellectual property rights and a negative impact on our business, operating results and financial condition."* in Part I, Item 1A of this Annual Report for additional information.

Our foreign operations expose us to unique intellectual property technology risks compared to a company with fewer or no international operations. For example, we are exposed to potential cyber security breaches that may target our employees or infrastructure outside the United States. See "Risk Factors – Risks Related to Our International Operations" in Part I, Item 1A of this Annual Report for a more detailed summary of the intellectual property technology risks associated with our international business operations.

This Annual Report may include trade names and trademarks of other companies. Our use or display of other parties' trade names, trademarks or products is not intended to, and does not imply a relationship with, or endorsement or sponsorship of us by, the trade names or trademark owners. All trademarks appearing in this Annual Report not owned by us are the property of their holders.

COMPETITION

Numerous semiconductor manufacturers and distributors serve the discrete, logic and analog semiconductor components market, making competition intense. Some of our larger competitors include Infineon Technologies A.G., Nexperia, formerly the Standard Products business of NXP Semiconductors N.V., ON Semiconductor Corporation, Rohm Electronics USA, LLC, Toshiba Corporation and Vishay Intertechnology, Inc., many of which have greater financial, marketing, distribution, brand name recognition, research and development, manufacturing and other resources than we do. Accordingly, we, from time to time, may reposition product lines or decrease prices, which may affect our sales of, and profit margins on, such product lines. The price, features, availability and quality of our products, and our ability to design products and deliver customer service in keeping with our customers' needs, determine the competitiveness of our products. We believe that our product focus, packaging expertise and our flexibility and ability to quickly adapt to customer needs affords us competitive advantages. See "Risk Factors – *The semiconductor business is highly competitive, and increased competition may harm our business, operating results and financial condition."* in Part I, Item 1A of this Annual Report for additional information.

ENGINEERING AND RESEARCH AND DEVELOPMENT

Our engineering and research and development groups consist of applications, circuit design, and product development engineers who assist in determining the direction of our future product lines. One of their key functions is to work closely with market-leading customers to further refine, expand and improve our product portfolio within our target product types and packages. In addition, customer requirements and acceptance of new package types are assessed and new, higher-density and more energy-efficient packages are developed to satisfy customers' needs.

Product development engineers work directly with our semiconductor circuit design and layout engineers to develop and design products that match our customers' requirements. We have the capability to capture the customers' electrical and packaging requirements and translate those requirements into product specifications which can then be designed and manufactured to support customers' end-system applications.

EMPLOYEES

As of December 31, 2019, we employed 7,271 employees (including approximately 666 temporary labor or independent contractors). 6,164 of our employees were in Asia, 244 were in the U.S. and 863 were in Europe. The growth in the number of employees is primarily attributable to our acquisition, earlier in 2019, of GFAB. None of our employees in Asia or the U.S. are subject to a collective bargaining agreement, but a majority of our employees in Europe are covered by local labor agreements. The decrease from 7,710 total employees in 2018 is due to productivity and operational improvements in our China facilities. We consider our relations with our employees to be satisfactory. See "Risk Factors – *We may fail to attract or retain the qualified technical, sales, marketing, finance and management/executive personnel required to operate our business successfully, which could adversely affect our business, operating results and financial condition."* in Part I, Item 1A of this Annual Report for additional information.

ENVIRONMENTAL MATTERS

We are subject to a variety of U.S. federal, state, local and foreign governmental laws, rules and regulations related to the use, storage, handling, discharge or disposal of certain toxic, volatile or otherwise hazardous chemicals used in our manufacturing process in China and the U.K. where our wafer fabrication facilities are located, and in China, Taiwan and Germany where our assembly and test facilities are located. Any of these regulations could require us to acquire equipment or to incur substantial other costs to comply with environmental regulations or remediate problems. For the years ended December 31, 2019, 2018 and 2017, our capital expenditures for environmental controls have not been material.

See "Risk Factors – *We are subject to many environmental laws and regulations that could result in significant expenses and could adversely affect our business, operating results and financial condition."* in Part I, Item 1A of this Annual Report for additional information.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

We conduct business with two related companies: LSC and its subsidiaries and affiliates, and Nuvoton Technology Corporation and its subsidiaries and affiliates (collectively, "Nuvoton"). LSC owned approximately 15.2% of our outstanding Common Stock as of December 31, 2019. In the third quarter of 2019 we entered into a Share Swap Agreement that provides for the acquisition of LSC and is subsidiaries by the Company. At the effective date of the transaction, each share of LSC will be converted into the right to receive TWD $42.50 per share in cash, or approximately US $1.42 per share based on December 31, 2019 exchange rates. The aggregate consideration to be paid by the Company, based on the December 31, 2019 exchange rate, is approximately $437 million. This amount is subject to change, based on the Taiwan dollar to United States dollar exchange rate at closing. The acquisition received LSC shareholder approval on October 25, 2019, and we anticipate completing the acquisition in the second half of 2020, subject to customary closing conditions and regulatory approvals. We expect to fund the purchase price of the transaction primarily with proceeds from a new bank financing arrangement. We conduct business with Keylink International (B.V.I.) Inc. and its subsidiaries and affiliates (collectively, "Keylink"). Keylink is our 5% joint venture partner in our two Shanghai assembly and test facilities. In addition, Ya Guang is our 2% joint venture partner in one of our Chengdu assembly and test facilities and our 5% joint venture partner in our other Chengdu assembly and test facility; however, we have no material transactions with Ya Guang, other than the joint venture.

Raymond Soong, the Chairman of the Board of Directors, is also the Chairman of LSC and the Chairman of Lite-On Technology Corporation ("LTC"), a significant shareholder of LSC. C.H. Chen, our former President and Chief Executive Officer and currently the Vice Chairman of the Board of Directors, is also Vice Chairman of LSC and a board member of LTC. Dr. Keh-Shew Lu, a member of our Board of Directors and our President and Chief Executive Officer, is also a board member of Nuvoton.

The Audit Committee of our Board of Directors reviews all related party transactions for potential conflict of interest situations on an ongoing basis. We believe that all related party transactions are on terms no less favorable to us than would be obtained from unaffiliated third parties. For more information concerning our relationships with LSC, Keylink and Nuvoton, see "Risk Factors – *One of our external suppliers is also a related party. The loss of this supplier could harm our business, operating results and financial condition."* in Part I, Item 1A and Note 15 of "Notes to Consolidated Financial Statements" of this Annual Report for additional information.

SEASONALITY

Historically, our net sales have been affected by the cyclical nature of the semiconductor industry, whereby typically the fourth quarter is the quarter of the calendar year with the smallest revenue. In addition, our net sales have been subject to some seasonal variation with weaker net sales in the first and fourth calendar quarters. See Note 21 (unaudited) of "Notes to Consolidated Financial Statements" of this Annual Report for additional information on our quarterly results.

AVAILABLE INFORMATION

Our website address is http://www.diodes.com. We make available, free of charge through our website, our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, proxy statements, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission (the "SEC").

The SEC maintains an Internet site (http://www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file with the SEC.

Our website also provides investors access to financial and corporate governance information including our corporate governance guidelines, Code of Business Conduct, whistleblower hotline, and press releases. The contents of our website and any other information accessible through our website are not incorporated by reference into this Annual Report on Form 10-K.

Cautionary Statement for Purposes of the "Safe Harbor" Provision of the Private Securities Litigation Reform Act of 1995

Many of the statements, included in this Annual Report on Form 10-K, contain forward-looking statements and forward-looking information relating to our company. We generally identify forward-looking statements by the use of terminology such as "may," "will," "could," "should," "potential," "continue," "expect," "intend," "plan," "estimate," "anticipate," "believe," "project," or similar phrases or the negatives of such terms. We base these statements on our management's beliefs as well as assumptions we made using information currently available to us. Such statements are subject to risks, uncertainties and assumptions, including those identified in the "Risk Factors" section of this Annual Report and the "Risk Factors" section of other documents we file with the SEC, as well as other matters not yet known to us or not currently considered material by us. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those anticipated, estimated or projected. Given these risks and uncertainties, prospective investors are cautioned not to place undue reliance on such forward-looking statements. Forward-looking statements do not guarantee future performance and should not be considered as statements of fact.

You should not unduly rely on these forward-looking statements, which speak only as of the date of this Annual Report on Form 10-K. Unless required by law, we undertake no obligation to publicly update or revise any forward-looking statements to reflect new information or future events or otherwise. The Private Securities Litigation Reform Act of 1995 (the “Act”) provides certain “safe harbor” provisions for forward-looking statements. All forward-looking statements, made on this Annual Report on Form 10-K, are made pursuant to the Act.

Item 1A. Risk Factors.

Investing in our Common Stock involves a high degree of risk. You should carefully consider the following risks and other information in this Annual Report before you make any trading decisions regarding our Common Stock. Our business, financial condition or operating results may suffer if any of the following risks are realized. Additional risks and uncertainties not currently known to us may also adversely affect our business, financial condition or operating results. If any of these risks or uncertainties occurs, the trading price of our Common Stock could decline and you could lose part or all of your investment.

RISKS RELATED TO OUR BUSINESS

The success of our business depends on the strength of the global economy and the stability of the financial markets, and any weaknesses in these areas may have a material adverse effect on our net sales, operating results and financial condition.

Weaknesses in the global economy and financial markets can lead to lower consumer discretionary spending and demand for items that incorporate our products in the consumer electronics, computing, industrial, communications and the automotive sectors. A decline in end-user demand can affect our customers’ demand for our products, the ability of our customers to meet their payment obligations and the likelihood of customers canceling or deferring existing orders. Our net sales, operating results and financial condition could be negatively affected by such actions.

During times of difficult market conditions, our fixed costs combined with lower net sales and lower profit margins may have a negative impact on our business, operating results and financial condition.

The semiconductor industry is characterized by high fixed costs. Notwithstanding our utilization of third-party manufacturing capacity, most of our production requirements are met by our own manufacturing facilities. In difficult economic environments, we could be faced with a decline in the utilization rates of our manufacturing facilities due to decreases in product demand. During such periods, our manufacturing facilities do not operate at full capacity and the costs associated with this excess capacity are expensed immediately and not capitalized into inventory. When our utilization rates decline to abnormally low production levels, we generally experience lower gross margins. The market conditions in the future may adversely affect our utilization rates and consequently our future gross margins, and this, in turn, could have a material negative impact on our business, operating results and financial condition.

Downturns in the highly cyclical semiconductor industry or changes in end-market demand could adversely affect our operating results and financial condition.

The semiconductor industry is highly cyclical, and periodically experiences significant economic downturns characterized by diminished product demand, production overcapacity and excess inventory, which can result in rapid erosion in average selling prices. From time to time, the semiconductor industry experiences order cancellations and reduced demand for products, resulting in significant net sales declines, due to excess inventories at end-equipment manufacturers and general economic conditions, especially in the technology sector. The market for semiconductors may experience renewed, and possibly more severe and prolonged downturns, which may harm our operating results and financial condition.

In addition, we operate in a few narrow markets of the broader semiconductor market and, as a result, cyclical fluctuations may affect these segments to a greater extent than they affect the broader semiconductor market. This may cause us to experience greater fluctuations in our operating results and financial condition than compared to some of our broad line semiconductor competitors. In addition, we may experience significant changes in our profitability as a result of variations in sales, changes in product mix, changes in end-user markets and the costs associated with the introduction of new products. The markets for our products depend on continued demand in the consumer electronics, computing, communications, industrial and automotive sectors. These end-user markets also tend to be cyclical and may also experience changes in demand that could adversely affect our operating results and financial condition.

The semiconductor business is highly competitive, and increased competition may harm our business, operating results and financial condition.

The semiconductor industry in which we operate is highly competitive. We expect intensified competition from existing competitors and new entrants. Competition is based on price, product performance, product availability, quality, reliability, technological innovation and customer service. We compete in various markets with companies of various sizes, many of which are larger and have greater resources or capabilities as it relates to financial, marketing, distribution, brand name recognition, research and development, manufacturing and other resources than we have. As a result, they may be better able to develop new products, market their products, pursue acquisition candidates and withstand adverse economic or market conditions. Most of our current major competitors are broad line semiconductor manufacturers who often have a wider range of product types and technologies than we do. In addition, companies not currently in direct competition with us may introduce competing products in the future. Some of our current major competitors are Infineon Technologies A.G., Nexperia, formerly the Standard Products business of NXP Semiconductors N.V., ON Semiconductor Corporation, Rohm Electronics USA, LLC, Toshiba Corporation and Vishay Intertechnology, Inc. We may not be able to compete successfully in the future, and competitive pressures may harm our business, operating results and financial condition.

One of our external suppliers is also a related party. The loss of this supplier could harm our business, operating results and financial condition.

In 2019, 2018 and 2017, LSC, our largest stockholder, accounted for less than 3% of our silicon wafer supply and our finished goods supply. The loss of LSC as a supplier could materially harm our business, operating results and financial condition. In the third quarter of 2019 we entered into a Share Swap Agreement that provides for the acquisition of LSC by the Company. At the effective date of the transaction, each share of LSC will be converted into the right to receive TWD $42.50 per share in cash, or approximately US $1.42 per share based on December 31, 2019 exchange rates. The aggregate consideration to be paid by the Company, based on the December 31, 2019 exchange rate, is approximately $437 million. This amount is subject to change, based on the Taiwan dollar to United States dollar exchange rate at closing. The acquisition received LSC shareholder approval on October 25, 2019, and we anticipate completing the acquisition in the second half of 2020, subject to customary closing conditions and regulatory approvals. We expect to fund the purchase price of the transaction primarily with proceeds from a new bank financing arrangement.

Delays in initiation of production at facilities due to implementing new production techniques or resolving problems associated with technical equipment malfunctions could adversely affect our manufacturing efficiencies, operating results and financial condition.

Our manufacturing efficiency has been and will be an important factor in our future profitability, and we may not be able to maintain or increase our manufacturing efficiency. Our manufacturing and testing processes are complex, require advanced and costly equipment and are continually being modified in our efforts to improve product performance and cost. Difficulties in the manufacturing process can lower yields. Technical or other problems could lead to production delays, order cancellations and lost net sales. In addition, any problems in achieving acceptable yields, construction delays, or other problems in upgrading or expanding existing facilities, building new facilities, bringing new manufacturing capacity to full production or changing our process technologies, could also result in capacity constraints, production delays and a loss of future net sales and customers. Our operating results also could be adversely affected by any increase in fixed costs and operating expenses related to increases in production capacity if net sales do not increase proportionately, or in the event of a decline in demand for our products. Any disruption at any of our wafer fabrication facilities or assembly and test facilities could have a material adverse effect on our manufacturing efficiencies, operating results and financial condition.

We are and will continue to be under continuous pressure from our customers and competitors to reduce the price of our products, which could adversely affect our growth and profit margins.

Prices for our products tend to decrease over their life cycle. There is substantial and continuing pressure from customers to reduce the total cost of purchasing our products. To remain competitive and retain our customers and gain new ones, we must continue to reduce our costs through design, product and manufacturing improvements. We must also strive to minimize our customers' shipping and inventory financing costs and to meet their other goals for rationalization of supply and production. Our net sales growth and profit margins will suffer if we cannot effectively continue to reduce our costs and keep our product prices competitive.

Our customers require our products to undergo a lengthy and expensive qualification process without any assurance of product sales and may demand to audit our operations from time to time. A failure to qualify a product or a negative audit finding could adversely affect our net sales, operating results and financial condition.

Prior to purchasing our products, our customers may require our products to undergo an extensive qualification process, which involves rigorous reliability testing. This qualification process may continue for six months or longer. However, qualification of a product by a customer does not ensure any sales of the product to that customer. In addition, we are focusing more on the automotive and industrial markets. These markets, automotive in particular, require higher quality standards. Although we are working to ensure our organization and products meet the more rigorous quality standards, there can be no assurances we will succeed. Even after successful qualification and sales of a product to a customer, a subsequent revision to the product, changes in the product's manufacturing process or the selection of a new supplier by us may require a requalification process, which may result in delayed net sales, foregone sales and excess or obsolete inventory. After our products are qualified, it can take an additional six months or more before the customer commences volume production of components or devices that incorporate our products. Despite these uncertainties, we devote substantial resources, including design, engineering, sales, marketing and management efforts, toward qualifying our products with customers in anticipation of sales. If we are unsuccessful or delayed in qualifying any of our products with a customer, such failure or delay would preclude or delay sales of such product to the customer, which may adversely affect our net sales, operating results and financial condition.

In addition, from time to time, our customers may demand an audit of our records, product manufacturing, qualification, and packaging processes, business practices and other related items to verify that we have complied with our business obligations, standard processes and procedures, product specifications and certain governing laws and regulations related to our business practices, and in accordance with the agreed terms and conditions of mutual business agreements. If the audit shows any deficiency in any of these categories, our customers may require us to implement extensive protocols to remedy the deficiency, assess us significant penalties, refuse shipments of our products, return existing inventory, cancel orders, or terminate our business relationship, each of which will adversely affect our net sales, operating results and financial condition.

Our customer orders are subject to cancellation or modification usually with no penalty. High volumes of order cancellation or reduction in quantities ordered could adversely affect our net sales, operating results and financial condition.

All of our customer orders are subject to cancellation or modification, usually with no penalty to the customer. Orders are generally made on a purchase order basis, rather than pursuant to long-term supply contracts, and are booked from immediate delivery to twelve months or more in advance of delivery. The rate of booking new orders can vary significantly from month to month. We, and the semiconductor industry as a whole, are experiencing a trend towards shorter customer-requested lead times, which is the amount of time between the date a customer places an order and the date the customer requires shipment. Furthermore, our industry is subject to rapid changes in customer outlook and periods of excess inventory due to changes in demand in the end-markets our industry serves. As a result, many of our purchase orders are revised, and may be cancelled, with little or no penalty and with little or no notice. However, we must still commit production and other resources to fulfilling these purchase orders even though they may ultimately be cancelled. If a significant number of purchase orders are cancelled or product quantities ordered are reduced, and we are unable to timely generate replacement orders, we may build up excess inventory and our net sales, operating results and financial condition may suffer.

Production at our manufacturing facilities could be disrupted for a variety of reasons, including natural disasters and other extraordinary events, which could prevent us from producing enough of our products to maintain our sales and satisfy our customers' demands and could adversely affect our operating results and financial condition.

A disruption in production at our manufacturing facilities could have a material adverse effect on our business. Disruptions could occur for many reasons, including fire, floods, hurricanes, typhoons, droughts, tsunamis, volcanoes, earthquakes, disease or other similar natural disasters, unplanned maintenance or other manufacturing problems, labor shortages, power outages or shortages, telecommunications failures, strikes, transportation interruption, government regulation, terrorism or other extraordinary events, including epidemics and related travel restrictions, such as the recent outbreak of the Coronavirus originating in Wuhan, China. Such disruptions may cause direct injury or damage to our employees and property and related internal controls with significant indirect consequences. Alternative facilities with sufficient capacity or capabilities may not be available, may cost substantially more or may take a significant time to start production, each of which could negatively affect our business and financial performance. If one of our key manufacturing facilities is unable to produce our products for an extended period of time, our sales may be reduced by the shortfall caused by the disruption, and we may not be able to meet our customers' needs, which could cause our customers to seek other suppliers. Such disruptions could have an adverse effect on our operating results and financial condition.

New technologies could result in the development of new products by our competitors and a decrease in demand for our products, and we may not be able to develop new products to satisfy changes in demand, which would adversely affect our net sales, market share, operating results and financial condition.

Our product range and new product development program are focused on low pin count semiconductor devices with one or more active or passive components. Our failure to develop new technologies, or anticipate or react to changes in existing technologies, either within or outside of the semiconductor market, could materially delay development of new products, which could result in a decrease in our net sales and a loss of market share to our competitors. The semiconductor industry is characterized by rapidly changing technologies and industry standards, together with frequent new product introductions. This includes the development of new types of technology or the improvement of existing technologies, such as analog and digital technologies that compete with, or seek to replace, discrete semiconductor technology. Our financial performance depends on our ability to design, develop, manufacture, assemble, test, market and support new products and product enhancements on a timely and cost-effective basis. New products often command higher prices and, as a result, higher profit margins. We may not successfully identify new product opportunities or develop and bring new products to market or succeed in selling them into new customer applications in a timely and cost-effective manner.

Products or technologies developed by other companies may render our products or technologies obsolete or noncompetitive, and since we operate primarily in a narrower segment of the broader semiconductor industry, this may have a greater effect on us than it would if we were a broad-line semiconductor supplier with a wider range of product types and technologies. Many of our competitors are larger and more established international companies with greater engineering and research and development resources than us. Our failure to identify or capitalize on any fundamental shifts in technologies in our product markets, relative to our competitors, could harm our business, have a material adverse effect on our competitive position within our industry and harm our relationships with our customers. In addition, to remain competitive, we must continue to reduce package sizes, improve manufacturing costs and expand our sales. We may not be able to accomplish these goals, which would adversely affect our net sales, market share, operating results and financial condition.

We may be adversely affected by any disruption in our information technology systems, which could adversely affect our cash flows, operating results and financial condition.

Our operations are dependent upon our information technology systems, which encompass all of our major business functions. We rely upon such information technology systems to manage and replenish inventory, to fill and ship customer orders on a timely basis, to coordinate our sales activities across all of our products and services and to coordinate our administrative activities. A substantial disruption in our information technology systems for any prolonged 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 and similar disruptions affecting the Internet generally. There can be no assurance that such delays, problems, or costs will not have a material adverse effect on our cash flows, operating results and financial condition.

As our operations grow in both size and scope, we will continuously need to improve and upgrade our systems and infrastructure while maintaining the reliability and integrity of our systems and infrastructure. The expansion of our systems and infrastructure will require us to commit substantial financial, operational and technical resources before the volume of our business increases, with no assurance that the volume of business will increase. In particular, we have upgraded our financial reporting system and are currently seeking to upgrade other information technology systems. These and any other upgrades to our systems and information technology, or new technology, now and in the future, will require that our management and resources be diverted from our core business to assist in compliance with those requirements. There can be no assurance that the time and resources our management will need to devote to these upgrades, service outages or delays due to the installation of any new or upgraded technology (and related customer issues), or the impact on the reliability of our data from any new or upgraded technology will not have a material adverse effect on our cash flows, operating results and financial condition.

A significant portion of our operations operate on a single Enterprise Resource Planning (“ERP”) platform. To manage our international operations efficiently and effectively, we rely heavily on our ERP system, internal electronic information and communications systems and on systems or support services from third parties. Any of these systems are subject to electrical or telecommunications outages, computer hacking or other general system failure. It is also possible that future acquisitions will operate on different ERP systems and that we could face difficulties in integrating operational and accounting functions of new acquisitions. Difficulties in upgrading or expanding our ERP system or system-wide or local failures that affect our information processing could adversely affect our cash flows, operating results and financial condition and could result in material weaknesses or significant deficiencies in internal controls.

We may be subject to claims of infringement of third-party intellectual property rights or demands that we license third-party technology, which could result in significant expense, reduction in our intellectual property rights and a negative impact on our business, operating results and financial condition.

The semiconductor industry is characterized by vigorous protection and pursuit of intellectual property rights. From time to time, third parties have asserted, and may in the future assert, patent, copyright, trademark and other intellectual property rights to technology that is important to our business and have demanded, and may in the future demand, that we license their patents and technology. Any litigation to determine the validity of allegations that our products infringe or may infringe these rights, including claims arising through our contractual indemnification of our customers, or claims challenging the validity of our patents, regardless of its merit or resolution, could be costly and divert the efforts and attention of our management and technical personnel. We may not prevail in litigation given the complex technical issues and inherent uncertainties in intellectual property litigation. If litigation results in an adverse ruling, we could be required to:

- pay substantial damages for past, present and future use of the infringing technology;
- cease manufacture, use or sale of infringing products;
- discontinue the use of infringing technology;
- expend significant resources to develop non-infringing technology;
- pay substantial damages to our customers or end-users to discontinue use or replace infringing technology with non-infringing technology;
- license technology from the third party claiming infringement, which license may not be available on commercially reasonable terms, or at all; or
- relinquish intellectual property rights associated with one or more of our patent claims, if such claims are held invalid or otherwise unenforceable.

We depend on third-party suppliers for timely deliveries of raw materials, manufacturing services, product and process development, parts and equipment, as well as finished products from other manufacturers, and our reputation with customers, operating results and financial condition could be adversely affected if we are unable to obtain adequate supplies in a timely manner.

Our manufacturing operations depend upon obtaining adequate supplies of raw materials, manufacturing services, product and process development, parts and equipment on a timely basis from third parties. In some instances, a supplier may be our sole-source supplier. Our operating results could be adversely affected if we are unable to obtain adequate supplies of raw materials, manufacturing services, product and process development, parts and equipment in a timely manner or if the costs charged to us were to increase significantly. Our business could also be adversely affected if there is a significant degradation in the quality of raw materials used in our products, or if the raw materials give rise to compatibility or performance issues in our products, any of which could lead to an increase in customer returns or product warranty claims. Although we maintain rigorous quality control systems, errors or defects may arise from a supplied raw material and be beyond our detection or control. In addition, we may be subject to quality claims from customers who purchased goods from companies before we acquired those companies. Any interruption in, or change in quality of, the supply of raw materials, manufacturing services, product and process development, parts or equipment needed to manufacture our products could adversely affect our reputation with customers, operating results and financial condition.

In addition, we sell finished products from other manufacturers. Our business could also be adversely affected if there are quality problems with the finished products we sell. From time to time, various suppliers may extend lead-times, limit supplies or increase prices due to capacity constraints or other factors. We have no long-term purchase contracts with any of these manufacturers and, therefore, have no contractual assurances of continued supply, pricing or access to finished products that we sell, and any such manufacturer could discontinue supplying to us at any time. Additionally, some of our suppliers of finished products or wafers compete directly with us and may, in the future, choose not to supply products to us.

If we do not succeed in continuing to vertically integrate our business, we will not realize the cost and other efficiencies we anticipate, which could adversely affect our ability to compete, our operating results and financial condition.

We are continuing to vertically integrate our business. Key elements of this strategy include continuing to expand our sales organization, manufacturing capacity, wafer foundry and research and development capability and expand our marketing, product development, package development and assembly and test operations in company-owned facilities or through the acquisition of established contractors. There are certain risks associated with our vertical integration strategy, including:

- difficulties associated with owning a manufacturing business, including, but not limited to, the maintenance and management of manufacturing facilities, equipment, employees and inventories and limitations on the flexibility of controlling overhead;
- difficulties in continuing expansion of our operations in Asia and Europe, because of the distance from our U.S. headquarters and differing regulatory and cultural environments;
- the need for skills and techniques that are outside our traditional core expertise;
- less flexibility in shifting manufacturing or supply sources from one region to another;
- even when independent suppliers offer lower prices, we may continue to source wafers from our captive manufacturing facilities, which may result in us having higher costs than our competitors;
- difficulties developing and implementing a successful research and development team; and
- difficulties developing, protecting, and gaining market acceptance of, our proprietary technology.

The risks of becoming a fully integrated manufacturer are amplified in an industry-wide slowdown because of the fixed costs associated with manufacturing facilities. In addition, we may not realize the cost, operating and other efficiencies that we expect from continued vertical integration. If we fail to successfully vertically integrate our business, our ability to compete, profit margins, operating results and financial condition may suffer.

Part of our growth strategy involves identifying and acquiring companies. We may be unable to identify suitable acquisition candidates or consummate desired acquisitions and, if we do make any acquisitions, we may be unable to successfully integrate any acquired companies with our operations, which could adversely affect our business, operating results and financial condition.

A significant part of our growth strategy involves acquiring companies. For example, (i) in 2000, we acquired FabTech, Inc., a wafer fabrication company, in order to have our own wafer manufacturing capabilities, (ii) in 2006, we acquired Anachip Corp. as an entry into the analog market, (iii) in 2006, we acquired the net operating assets of APD Semiconductor, Inc., (iv) in 2008, we acquired Zetex plc., (v) in 2012, we acquired over 50% of the outstanding common stock of Eris Technology Corporation, (vi) also in 2012, we acquired Power Analog Microelectronics, Inc., (vii) in 2013, we acquired BCD Semiconductor Manufacturing Limited (viii) in 2015, we acquired Pericom Semiconductor Corporation and (vii) in 2019 we acquired Texas Instruments' 200mm wafer fabrication facility and operations located in Greenock, Scotland. In addition, in the third quarter of 2019 we entered into a Share Swap Agreement that provides for the acquisition of LSC and its subsidiaries by the Company. At the effective date of the transaction, each share of LSC will be converted into the right to receive TWD $42.50 per share in cash, or approximately US $1.42 per share based on December 31, 2019 exchange rates. The aggregate consideration to be paid by the Company, based on the December 31, 2019 exchange rate, is approximately $437 million. This amount is subject to change, based on the Taiwan dollar to United States dollar exchange rate at closing. The acquisition received LSC shareholder approval on October 25, 2019, and we anticipate completing the acquisition in the second half of 2020, subject to customary closing conditions and regulatory approvals. We expect to fund the purchase price of the transaction primarily with proceeds from a new bank financing arrangement. In addition, from time to time, we may be in various stages of discussions with potential acquisition targets as we intend to continue to expand and diversify our operations by making further acquisitions. However, we may be unsuccessful in identifying suitable acquisition candidates, or we may be unable to consummate a desired acquisition. To the extent we do make acquisitions, if we are unsuccessful in integrating these companies or their operations or product lines with our operations, or if integration is more difficult than anticipated, we may experience disruptions that could have a material adverse effect on our business, operating results and financial condition. In addition, we may not realize all of the benefits we anticipate from any such acquisitions. Some of the risks that may affect our ability to integrate or realize any anticipated benefits from acquisitions that we may make include those associated with:

- unexpected losses of key employees or customers of the acquired company;
- delays in obtaining customer qualification of acquired facilities;
- bringing the acquired company's standards, processes, procedures and controls into conformance with our operations;
- coordinating our new product and process development;
- hiring additional management and other critical personnel;

- increasing the scope, geographic diversity and complexity of our operations;
- difficulties in consolidating facilities and transferring processes and know-how;
- difficulties in reducing costs of the acquired entity's business;
- diversion of management's attention from the management of our business; and
- adverse effects on existing business relationships with customers.

We are subject to litigation risks, including securities class action litigation and intellectual property litigation, which may be costly to defend and the outcome of which is uncertain and could adversely affect our business and financial condition.

All industries, including the semiconductor industry, are subject to legal claims, with and without merit, including securities class action litigation that may be particularly costly and which may divert the attention of our management and our resources in general. We are involved in a variety of legal matters, most of which we consider either routine matters that arise in the normal course of business or immaterial for our aggregate business operations. These routine matters typically fall into broad categories such as those involving suppliers and customers, employment and labor, and intellectual property. We believe it is unlikely that the final outcome of these legal claims will have a material adverse effect on our financial position, operating results or cash flows. However, defense and settlement costs can be substantial, even with respect to claims that we believe have no merit. Due to the inherent uncertainty of the litigation process, the resolution of any particular legal claim or proceeding could adversely affect our business, operating results and financial condition.

From time to time, we have been, or may in the future be, involved in securities litigation or litigation arising from our acquisitions. We can provide no assurance as to the outcome of any such litigation matter in which we are a party. These types of matters are costly to defend and even if resolved in our favor, could have a material adverse effect on our business, financial condition, operating results and cash flow. Such litigation could also substantially divert the attention of our management and our resources in general. Uncertainties resulting from the initiation and continuation of securities or other litigation could harm our ability to obtain credit and financing for our operations and to compete in the marketplace. Because the price of our Common Stock has been, and may continue to be, volatile, we can provide no assurance that securities litigation will not be filed against us in the future. In addition, we can provide no assurance that our past or future acquisitions will not subject us to additional litigation. See Part I, Item 3 "Legal Proceedings" of this Annual Report for more information on our legal proceedings.

We are subject to many environmental laws and regulations that could result in significant expenses and could adversely affect our business, operating results and financial condition.

We are subject to a variety of U.S. federal, state, local and foreign governmental laws, rules and regulations related to the use, storage, handling, discharge or disposal of certain toxic, volatile or otherwise hazardous chemicals used in manufacturing our products throughout the world. Some of these regulations in the U.S. include the Federal Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability Act and similar state statutes and regulations. Any of these regulations could require us to acquire equipment or to incur substantial other expenses to comply with environmental regulations. If we were to incur additional expenses related to any potential or alleged violation or environmental regulations, our product costs could significantly increase, materially affecting our business, financial condition and operating results. Any failure to comply with present or future environmental laws, rules and regulations could result in fines, suspension of production or cessation of operations, any of which could have a material adverse effect on our business, operating results and financial condition. Our operations affected by such requirements include, among others: the disposal of wastewater containing residues from our manufacturing operations through publicly operated treatment works or sewer systems, and which may be subject to volume and chemical discharge limits and may also require discharge permits; and the use, storage and disposal of materials that may be classified as toxic or hazardous. Any of these may result in, or may have resulted in, environmental conditions for which we could be liable.

Some environmental laws impose liability, sometimes without fault, for investigating or cleaning up contamination on, or emanating from, our currently or formerly owned, leased or operated properties, as well as for damages to property or natural resources and for personal injury arising out of such contamination. Such liability may also be joint and several, meaning that we could be held responsible for more than our share of the liability involved, or even the entire liability. In addition, the presence of environmental contamination could also interfere with ongoing operations or adversely affect our ability to sell or lease our properties. Environmental requirements may also limit our ability to identify suitable sites for new or expanded plants. Discovery of contamination for which we are responsible, the enactment of new laws and regulations, or changes in how existing requirements are enforced, could require us to incur additional costs for compliance or subject us to unexpected financial liabilities.

Our products, or products we purchase from third parties for resale, may be found to be defective and, as a result, warranty claims and product liability claims may be asserted against us and we may not have recourse against our suppliers, which may harm our business, reputation with our customers, operating results and financial condition.

Our products, or products we purchase from third parties for resale, are typically sold at prices that are an insignificant portion of the overall value of the equipment or other goods in which they are incorporated. For example, our products that are incorporated into a television may be sold for several cents, whereas the television maker might sell the television for several hundred dollars. Although we maintain rigorous quality control systems, we receive warranty claims and product liability claims for some of these products that are defective, or that do not perform to published specifications. Since a defect or failure in our products could give rise to failures in the end-products that incorporate them (and consequential claims for damages against our customers from their customers), we may face claims for damages that are disproportionate to the net sales and profits we receive from the products involved and we may not have recourse against our suppliers. In addition, our ability to reduce such liabilities may be limited by the laws or the customary business practices of the countries where we do business. Even in cases where we do not believe we have legal liability for such claims, we may choose to pay for them to retain a customer's business or goodwill or to settle claims to avoid protracted litigation. Our operating results and business could be adversely affected as a result of a significant quality or performance issue in our products, if we are required or choose to pay for the damages that result. We may choose not to carry liability insurance, may not have sufficient insurance coverage, or may not have sufficient resources, to satisfy all possible warranty claims and product liability claims. In addition, any perception that our products are defective would likely result in reduced sales of our products, loss of customers and harm to our business, reputation, operating results and financial condition.

We may fail to attract or retain the qualified technical, sales, marketing, finance and management/executive personnel required to operate our business successfully, which could adversely affect our business, operating results and financial condition.

Our future success depends, in part, upon our ability to attract and retain highly qualified technical, sales, marketing, finance and managerial personnel. Personnel with the necessary expertise are scarce and competition for personnel with these skills is intense. We may not be able to retain existing key technical, sales, marketing, finance and managerial employees or be successful in attracting, assimilating or retaining other highly qualified technical, sales, marketing, finance and managerial/executive personnel in the future. For example, we have faced, and continue to face, intense competition for qualified technical and other personnel in China, where our assembly and test facilities are located. A number of U.S. and multi-national corporations, both in the semiconductor industry and in other industries, have recently established and are continuing to establish factories and plants in China, and the competition for qualified personnel has increased significantly as a result. If we are unable to retain existing key employees or are unsuccessful in attracting new highly qualified employees, our business, operating results and financial condition could be materially and adversely affected.

We may not be able to achieve future growth, and any such growth may place a strain on our management and on our systems and resources, which could adversely affect our business, operating results and financial condition.

Our ability to successfully grow our business requires effective planning and management. Our past growth, and our targeted future growth, may place a significant strain on our management and on our systems and resources, including our financial and managerial controls, reporting systems and procedures. In addition, we will need to continue to train and manage our workforce worldwide. If we are unable to effectively plan and manage our growth effectively, our business and prospects will be harmed and we will not be able to maintain our profitable growth, which could adversely affect our business, operating results and financial condition.

Obsolete inventories as a result of changes in demand for our products and change in life cycles of our products could adversely affect our business, operating results and financial condition.

The life cycles of some of our products depend heavily upon the life cycles of the end-products into which our products are designed. End-market products with short life cycles require us to manage closely our production and inventory levels. Inventory may also become obsolete because of adverse changes in end-market demand. We may in the future be adversely affected by obsolete or excess inventories, which may result from unanticipated changes in the estimated total demand for our products or the estimated life cycles of the end-products into which our products are designed. In addition, some customers restrict how far back the date of manufacture for our products can be and certain customers may stop ordering products from us and go out of business due to adverse economic conditions; therefore, some of our product inventory may become obsolete and, thus, adversely affect our business, operating results and financial condition.

If our direct sales customers do not design our products into their applications, our net sales may be adversely affected.

We expect an increasingly significant portion of net sales will come from products we design specifically for our customers. However, we may be unable to achieve these design wins. In addition, a design win from a customer does not guarantee future sales to that customer. Without design wins from direct sales customers, we would only be able to sell our products to these direct sales customers as a second source, which usually means we are only able to sell a limited amount of product to them. Once a direct sales customer designs another supplier's semiconductors into one of its product platforms, it is more difficult for us to achieve future design wins with that direct sales customer's product platform because changing suppliers involves significant cost, time, effort and risk to a direct sales customer. Achieving a design win with a customer does not ensure that we will receive significant net sales from that customer, and we may be unable to convert design wins into actual sales. Even after a design win, the customer is not obligated to purchase our products and can choose at any time to stop using our products, if, for example, its own products are not commercially successful or if the customer can obtain a superior product or the product at a lower cost from one of our competitors.

We are subject to interest rate risk that could have an adverse effect on our cost of working capital and interest expenses, which could adversely affect our business, operating results and financial condition.

We currently have a U.S. banking credit facility under which as of December 31, 2019, we had a remaining principal balance of $75.2 million under a term loan, and had nothing drawn on a $250.0 million revolver, ($250.0 million of which remained available as of December 31, 2019), with the possibility of an additional $200.0 million of borrowings. In connection with the LSC acquisition, we expect to incur additional debt through a new bank financing arrangement that could subject the Company to additional interest rate and other risks. In addition to our U.S. banking credit facility we have $13.3 million outstanding under short-term foreign credit facilities. In addition to U.S. banking credit facility and our short-term foreign credit facilities, our 51% owned subsidiary, ERIS Technology Corporation ("ERIS"), borrowed $23.5 million on a long-term basis from local Taiwan banks in order to make an investment. See "Liquidity and Capital Resources" below and Note 8 of "Notes to Consolidated Financial Statements" of this Annual Report for additional information. A rise in interest rates could have an adverse impact upon our cost of working capital and our interest expense. Based on our debt balances at December, 31, 2019, an increase or decrease in interest rates by 1.0% for the year on our credit facilities would increase or decrease our annual interest rate expense by less than $1.0 million, net of the amounts realized from our interest rate swaps.

Our hedging strategies may not be successful in mitigating our risks associated with interest rates or foreign exchange exposure or our counterparties might not perform as agreed.

We use interest rate swaps and foreign exchange forward contracts to provide a level of protection against interest rate risks and foreign exchange exposure, but no hedging strategy can protect us completely. The nature and timing of hedging transactions influence the effectiveness of these strategies. Poorly designed strategies, improperly executed and documented transactions or inaccurate assumptions could actually increase our risks and losses. In addition, hedging strategies involve transaction and other costs. The hedging strategies and the derivatives that we use may not be able to adequately offset the risks of interest rate volatility and our hedging transactions may result in or magnify losses. Furthermore, interest rate and foreign exchange derivatives may not be available on favorable terms or at all, particularly during economic downturns. Any of the foregoing risks could adversely affect our business, financial condition and results of operations. We are exposed to counterparty credit risk in the event of non-performance by counterparties to the interest rate swaps and foreign exchange contracts.

We may have a significant amount of debt with various financial institutions worldwide. Any indebtedness could adversely affect our business, operating results, financial condition and our ability to meet payment obligations under such debt.

We may have a significant amount of debt and substantial debt service requirements on our borrowings, including our credit facilities with various financial institutions worldwide. As of December 31, 2019, $75.2 million was outstanding under our U.S. banking credit facility. In addition, we have short-term foreign credit facilities with borrowing capacities of approximately $126.6 million with an unused amount of $111.8 million. In connection with the LSC acquisition, we expect to incur additional debt through a new bank financing arrangement that could subject the Company to additional interest rate and other risks.

A significant amount of debt could have significant consequences on our future operations, including:

- making it more difficult for us to meet our payment and other obligations under our outstanding debt;
- resulting in an event of default if we fail to comply with the financial and other restrictive covenants contained in our debt agreements, which event of default could result in all of our debt becoming immediately due and payable and, in the case of an event of default under our secured debt could permit the lenders to foreclose on our assets securing that debt;
- reducing the availability of our cash flow to fund working capital, capital expenditures, acquisitions and other general corporate purposes, and limiting our ability to obtain additional financing for these purposes;

- subjecting us to the risk of increased sensitivity to interest rate increases on our indebtedness with variable interest rates;
- limiting our flexibility in planning for, or reacting to, and increasing our vulnerability to, changes in our business, the industry in which we operate and the general economy; and
- placing us at a competitive disadvantage compared to our competitors that have less debt or are less leveraged.

Any of the above-listed factors could have an adverse effect on our business, operating results, financial condition and our ability to meet our payment obligations under our debt.

Our U.S. Credit Facility and our foreign credit lines bear interest at LIBOR or similar indices plus a specified margin. On July 27, 2017, the Financial Conduct Authority (the authority that regulates LIBOR) announced that it intends to stop compelling banks to submit rates for the calculation of LIBOR after 2021, and it is unclear whether new methods of calculating LIBOR will be established. If LIBOR ceases to exist after 2021, and if the U.S. Credit Facility is not amended to incorporate an alternate benchmark rate to replace LIBOR once such an alternate benchmark rate has been identified, the interest rates under the U.S. Credit Facility will be based on the Base Rate (as defined in the U.S. Credit Facility), which may result in higher interest rates. The U.S. Credit Facility provides a streamlined mechanism for amendment to its interest rate provisions in the event LIBOR becomes unavailable that would permit substitution of an alternate benchmark rate by agreement between the Company and the Administrative Agent, subject only to rejection by a majority of the lenders under the U.S. Credit Facility. However, such an amendment would depend upon the identification of an alternate benchmark rate, and agreement between the Company and the Administrative Agent on the alternate benchmark rate and on terms for incorporation of that alternate benchmark rate into the U.S. Credit Facility. If an alternate benchmark rate is not agreed under the U.S. Credit Facility and/or if an alternate benchmark rate is not available under our foreign credit lines, interest rates governing such indebtedness may increase. To the extent that these interest rates increase, our interest expense will increase, which could adversely affect our financial condition, operating results and cash flows.

Restrictions in our credit facilities may limit our business and financial activities, including our ability to obtain additional capital in the future.

Our U.S. banking credit facility contains covenants imposing various restrictions on our business and financial activities. These restrictions may affect our ability to operate our business and undertake certain financial activities and may limit our ability to take advantage of potential business or financial opportunities as they arise. The restrictions these covenants place on us include limitations on our ability to incur liens, incur indebtedness, make investments, dissolve or merge or consolidate with or into another entity, dispose of certain property, make restricted payments (including dividends and share repurchases), issue or sell equity interests, engage in other different material lines of business, conduct related party transactions, enter into certain burdensome contractual obligations and use proceeds from any credit facility to purchase or carry margin stock or to extend credit to others for the same purpose. Our U.S. banking credit facility also requires us to meet certain financial ratios, including a minimum consolidated fixed charge coverage ratio and a maximum consolidated leverage ratio.

Our ability to comply with the U.S. banking credit facility may be affected by events beyond our control, including prevailing economic, financial and industry conditions, and are subject to the risks stated in this section of the Annual Report. The breach of any of these covenants or restrictions could result in an event of default under the facility. An event of default under the facility would permit the lenders under the facility to declare all amounts owed under such facility to be immediately due and payable in full. Upon acceleration of our indebtedness, we may be unable to repay the accelerated amount of principal and interest on the credit facilities that would then be due. See "Management's Discussion and Analysis of Financial Condition and Results of Operations – Financial Condition-*Debt instruments"* in Part II, Item 7 of this Annual Report for additional information.

Our business benefits from certain Chinese government incentives. Expiration of, or changes to, these incentives could adversely affect our operating results and financial condition.

The Chinese government has provided various incentives to technology companies, including our manufacturing facilities located in Shanghai and Chengdu, China, in order to encourage development of the high-tech industry. These incentives include reduced tax rates and other measures. As a result, we are entitled to a preferential enterprise income tax rate of 15% so long as our manufacturing facilities continue to maintain their High and New Technology Enterprise ("HNTE") status. One of our manufacturing facilities and one of our wafer fabrication facilities located in Shanghai are approved for HNTE status for the tax years 2018-2020. In addition, one of our wafer fabrication facilities located in Shanghai was approved for HNTE status for the tax years 2017-2019. HNTE qualification requires, but is not limited to, metrics based on China research and development expenditures as well as research and development headcount and overall college-degreed headcount. Any prior years that have already been approved are subject to audit requirements. If we were to no longer meet the HNTE requirements, our statutory tax rate for our approved Shanghai facilities would increase to 25% for any period in which an audit shows we were not compliant, which could adversely affect our operating results and financial condition.

In connection with our joint venture in Chengdu, China, with Ya Guang, we have qualified for tax incentives offered in the Go West Initiative ("Go West"), where companies are entitled to a preferential income tax rate of 15% for doing business in western China. If we were to no longer meet the Go West requirements, our statutory tax rate for this joint venture would increase to 25%, which could adversely affect our operating results and financial condition since we own 98% of this joint venture entity.

The impact of our HNTE and Go West status, collectively called tax holidays, decreased our tax expense by approximately $3.1 million, $1.6 million and $3.7 million for the years ended December 31, 2019, 2018 and 2017, respectively. The benefit of the tax holidays on basic and diluted earnings per share for the twelve months ended December 31, 2019, 2018 and 2017 was approximately $0.06, $0.03 and $0.08, respectively.

We operate a global business through numerous foreign subsidiaries, and there is a risk that tax authorities will challenge our transfer pricing methodologies or legal entity structures, which could adversely affect our operating results and financial condition.

We conduct operations worldwide through our foreign subsidiaries and are, therefore, subject to complex transfer pricing regulations in the jurisdictions in which we operate. Transfer pricing regulations generally require that, for tax purposes, transactions between related parties be priced on a basis that would be comparable to an arm's length transaction between unrelated parties. There is uncertainty and inherent subjectivity in complying with these rules. To the extent that any foreign tax authorities disagree with our transfer pricing policies, we could become subject to significant tax liabilities and penalties. Based on our current knowledge and probability assessment of potential outcomes, we believe that we have provided for all tax exposures. However, the ultimate outcome of a tax examination could differ materially from our provisions and could have a material adverse effect on our business, financial condition, operating results and cash flows.

Our legal organizational structure could result in unanticipated unfavorable tax or other consequences which could have a material adverse effect on our financial condition and operational results. In some countries, we maintain multiple entities for tax or other purposes. Changes in tax laws, regulations, future jurisdictional profitability of us and our subsidiaries, and related regulatory interpretations in the countries in which we operate may impact the taxes we pay or tax provision we record, which could have a material adverse effect on our operating results. In addition, any challenges to how our entities are structured or realigned or their business purpose by taxing authorities could result in us becoming subject to significant tax liabilities and penalties which could have a material adverse effect on our business, financial condition, operating results and cash flows.

The value of our benefit plan assets and liabilities is based on estimates and assumptions, which may prove inaccurate and the actual amount of expenses recorded in the consolidated financial statements could differ materially from the assumptions used.

Certain of our employees in the U.K. participate in a company-sponsored defined benefit plan, which is closed to new entrants and is frozen with respect to future benefit accruals. The retirement benefit is based on the final average compensation and service of each eligible employee. In accounting for these plans, we are required to make actuarial assumptions that are used to calculate the earning value of the related assets, where applicable, and liabilities and the amount of expenses to be recorded in our consolidated financial statements. Assumptions include, but are not limited to, the expected return on plan assets, discount rates, and mortality rates. While we believe the underlying assumptions under the projected unit credit method are appropriate, the carrying value of the related assets and liabilities and the actual amount of expenses recorded in the consolidated financial statements could differ materially from the assumptions used.

Changes in actuarial assumptions for our defined benefit plan could increase the volatility of the plan's asset value, require us to increase cash contributions to the plan and have a negative impact on our cash flows, operating results and financial condition.

The assets of our defined benefit pension plan (the "plan") in the U.K. provide pensions to employees and former employees. The plan's assets are invested in a diverse range of listed and unlisted securities, including corporate bonds and mutual funds and are determined, from time to time, based on their fair market value. The plan's obligation to pay pensions is estimated by using actuarial assumptions. To the extent that the plan's assets are not sufficient to meet the estimated amount of the plan's obligations, further funding of the plan will be required by the plan's sponsoring employers, Diodes Zetex Limited and Diodes Zetex Semiconductors Limited, over an agreed upon deficit recovery period.

As of December 31, 2019, the benefit obligation of the plan was approximately $158.7 million and the total assets in such plan were approximately $132.6 million. Therefore, the plan was underfunded by approximately $26.1 million. The difference between plan obligations and assets, or the funded status of the plan, is a significant factor in determining the net periodic benefit costs of the plan and the ongoing funding requirements of the plan.

Any fluctuations in the U.K. equity markets and bond markets or changes in several key actuarial assumptions, including, but not limited to, changes in discount rate, estimated return on the plan and mortality rates, can (i) affect the level of plan funding, (ii) cause volatility in the net periodic pension cost, and (iii) increase our future funding requirements. In the event that actual results differ from the actuarial assumptions or actuarial assumptions are changed, the funding status of the plan may change. Any deficiency in the funding of the plan could result in additional charges to equity and an increase in future plan expense and cash contribution. A significant increase in our funding requirements could have a negative impact on our cash flows, operating results and financial condition.

During the first quarter of 2015, we agreed to a payment plan with the trustees of the defined benefit plan, under which we would make annual contributions each year through 2030, of approximately 2 million British Pounds ("GBP") (approximately $2.7 million based on a GBP:USD exchange rate of 1.33, effective at December 31, 2019). The annual contributions were expected to meet the deficit disclosed in the plan as of April 5, 2013, by December 31, 2030. The trustees are required to review the funding position every three years. Following the pension plan funding valuation as at March 31, 2019, the trustees and the Company have been in discussions regarding a recovery plan with a level of contributions that would result in a plan to recover the deficit by January 1, 2029. Moving the recovery plan from a 2030 deadline to a 2029 deadline could require us to increase our contributions. This plan has not been finalized. If we fail to reach an agreement with the trustees, as we are required to do every three years, the Pension Regulator in the U.K. could impose contributions on Diodes Zetex Limited or Diodes Zetex Semiconductors Limited, or in limited circumstances could require financial support to be provided to the plan from entities connected or associated with Diodes Zetex Limited or Diodes Zetex Semiconductors Limited. Furthermore, Diodes Zetex Limited and Diodes Zetex Semiconductors Limited remain ultimately liable to fully fund the plan regardless of any failure to agree upon future contributions in respect of a particular actuarial valuation, i.e., if either the plan or those companies were wound up, a debt equal to each company's share of the entire outstanding deficit at that time (calculated on a statutory conservative basis) would be owed by the relevant company. This could have a material adverse effect on our cash flows, operating results and financial condition.

Certain of our customers and suppliers require us to comply with their codes of conduct, which may include certain restrictions that may substantially increase our cost of doing business as well as have an adverse effect on our operating efficiencies, operating results and financial condition.

Certain of our customers and suppliers require us to agree to comply with the Electronic Industry Code of Conduct ("EICC") or their own codes of conduct, which may include detailed provisions on labor, human rights, health and safety, environment, corporate ethics and management systems. Certain of these provisions are not requirements under the laws of the countries in which we operate and may be burdensome to comply with on a regular basis. Moreover, new provisions may be added or material changes may be made to any these codes of conduct, and we may have to promptly implement such new provisions or changes, which may substantially further increase the cost of our business, be burdensome to implement and adversely affect our operational efficiencies and operating results. If we violate any such codes of conduct, we may lose further business with the customer or supplier and, in addition, we may be subject to fines from the customer or supplier. While we believe that we are currently in compliance with our customers and suppliers' codes of conduct, there can be no assurance that, from time to time, if any one of our customers and suppliers audits our compliance with such code of conduct, we would be found to be in full compliance. A loss of business from these customers or suppliers could have a material adverse effect on our business, operating results and financial condition.

Compliance with government regulations and customer demands regarding the use of "conflict minerals" may result in increased costs and may have a negative impact on our business, operating results and financial condition.

The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 imposes new disclosure requirements regarding the use of certain minerals, which are mined from the Democratic Republic of Congo and adjoining countries, known as conflict minerals. These requirements affect the pricing, sourcing and availability of minerals used in the manufacture of semiconductor devices (including our products). We are incurring additional costs associated with complying with the disclosure requirements, such as costs related to determining the source of any conflict minerals used in our products. Our supply chain is complex, and we may be unable to verify the origins for all metals used in our products. Customers may demand that the products they purchase be free of conflict minerals. Therefore, we may encounter challenges with our customers and stockholders if we are unable to certify that our products are conflict free. This requirement could affect the sourcing and availability of products we purchase from suppliers. This may reduce the number of suppliers that may be able to provide conflict-free products, and may affect our ability to obtain products in sufficient quantities to meet customer demand or at competitive prices.

There are risks associated with previous and future acquisitions. We may ultimately not be successful in overcoming these risks or any other problems encountered in connection with acquisitions.

The risks commonly encountered in acquisitions of companies include, among other things, higher than anticipated acquisition costs and expenses, the difficulty and expense in integrating the operations and personnel of the companies, the difficulty of bringing standards, procedures and controls, including disclosure controls and procedures and internal control over financial reporting, into conformance with our operations, the ability to coordinate our new products and process development, the ability to hire additional management and other critical personnel, the ability to increase the scope, geographic diversity and complexity of our operations, difficulties in consolidating facilities and transferring processes and know-how, difficulties in reducing costs, prolonged diversion of our management's attention from the management of our business, the ability to clearly define our present and future strategies, the loss of key employees and customers as a result of changes in management and any geographic distances may make integration slower and more challenging. We may ultimately not be successful in overcoming these risks or any other problems encountered in connection with acquisitions.

In addition, any acquisition may cause large one-time expenses as well as create goodwill and other intangible assets that may result in significant asset impairment charges in the future.

If we fail to maintain an effective system of internal controls or discover material weaknesses in our internal control over financial reporting, we may not be able to report our financial results accurately or detect fraud, which could harm our business and the trading price of our Common Stock.

Effective internal controls are necessary for us to produce reliable financial reports and are important in our effort to prevent financial fraud. We are required to periodically evaluate the effectiveness of the design and operation of our internal controls. These evaluations may result in the conclusion that enhancements, modifications or changes to our internal controls are necessary or desirable. While management evaluates the effectiveness of our internal controls on a regular basis, these controls may not always be effective. There are inherent limitations on the effectiveness of internal controls, including collusion, management override, and failure of human judgment. Because of this, control procedures are designed to reduce rather than eliminate business risks. If we fail to maintain an effective system of internal controls or if management or our independent registered public accounting firm were to discover material weaknesses in our internal controls, we may be unable to produce reliable financial reports or prevent fraud, which could harm our financial condition and operating results, and could result in a loss of investor confidence and a decline in our stock price.

Terrorist attacks, or threats or occurrences of other terrorist activities, whether in the U.S. or internationally, may affect the markets in which our Common Stock trades, the markets in which we operate and our operating results and financial condition.

Terrorist attacks, or threats or occurrences of other terrorist or related activities, whether in the U.S. or internationally, may affect the markets in which our Common Stock trades, the markets in which we operate and our profitability. Future terrorist or related activities could affect our domestic and international sales, disrupt our supply chains and impair our ability to produce and deliver our products. Such activities could affect our physical facilities or those of our suppliers or customers. Such terrorist attacks could cause seaports or airports, to or through which we ship, to be shut down, thereby preventing the delivery of raw materials and finished goods to or from our manufacturing facilities in China, Taiwan and Germany and our wafer fabrication facilities in China, the U.S. and the U.K., or to our regional sales offices. Due to the broad and uncertain effects that terrorist attacks have had on financial and economic markets generally, we cannot provide any estimate of how these activities might negatively affect our future operating results and financial condition.

System security risks, data protection breaches, cyber-attacks and other related cybersecurity issues could disrupt our internal operations, and any such disruption could reduce our expected net sales, increase our expenses, damage our reputation and adversely affect our stock price.

Experienced computer programmers and hackers may be able to penetrate our security controls and misappropriate or compromise our confidential information or those of third parties, create system disruptions, compromise physical assets or intellectual property, or misappropriate monetary assets or cause shutdowns. Computer programmers and hackers also may be able to develop and deploy viruses, worms and other malicious software programs that attack our websites or exploit any security vulnerabilities of our websites and information systems. Our international operations and business relationships could exacerbate these potential risks. In September 2019, our anti-virus defenses identified a malware infection and brute force password attack. Breach resolution was accomplished by our internal IT staff. We do not believe that any confidential or proprietary information was exposed or that there was any material impact on production. In response to this cyber-intrusion, we engaged an information technology security company to assess the timetable and scope of the intrusion, identify any weaknesses in our IT systems, and assist in designing security measures to strengthen our protection against, and preparation for identifying and responding to, such attacks. We are reviewing this assessment and have enhanced and continue to enhance our security measures. Specific measures we have taken include strengthening our global network access control to further prevent unauthorized or non-compliant devices from accessing our internal networks and developing policies and procedures to more timely respond to intrusions.

The costs to the Company to eliminate or alleviate cyber or other security problems, bugs, viruses, worms, malicious software programs and security vulnerabilities could be significant, and our ongoing efforts to prevent and address these problems may not be successful. Such problems could result in interruptions, delays, cessation of service, extortionate demands to decrypt files and loss of existing or potential customers that may impede our sales, manufacturing, distribution or other critical functions and materially adversely affect our operating results, stock price and reputation.

We manage and store various proprietary information and sensitive or confidential data relating to our business and third party business. Breaches of our security measures or the accidental loss, inadvertent disclosure or unapproved dissemination of proprietary information or sensitive or confidential data about us or our partners or customers, including the potential loss, encryption or disclosure of such information or data or the unauthorized transfer of monetary assets as a result of fraud, trickery or other forms of deception, could expose us, our partners and customers or the individuals affected to a risk of loss or misuse of this information, extortionate demands to decrypt files, result in litigation and potential liability for us, damage our brand and reputation or otherwise harm our business. In addition, the cost and operational consequences of implementing further data protection measures could be significant. Delayed sales, significant costs or lost customers resulting from these system security risks, data protection breaches, cyber-attacks and other related cyber-security issues could materially adversely affect our operating results, stock price and reputation.

Cyber and other security problems could originate from within the United States or in foreign countries. Our foreign operations expose us to additional cyber security risks compared to a company with a smaller international footprint.

RISKS RELATED TO OUR INTERNATIONAL OPERATIONS

Our international operations subject us to risks that could adversely affect our operations.

We expect net sales from foreign markets to continue to represent a significant portion of our total net sales. In addition, the majority of our manufacturing facilities are located in China. For the twelve months ended 2019 our Asian and European subsidiaries represented approximately 77% of our net sales, while in 2018 and 2017, our Asian and European subsidiaries represented over 85% of our net sales. The decline of net sales in our Asia and European based subsidiaries in 2019 represents a shift in business practices to fulfill more orders from our non-Asia based subsidiaries. There are risks inherent in doing business internationally, and any or all of the following factors could cause harm to our business:

- changes in, or impositions of, legislative or regulatory requirements, including income tax or value added tax laws in the U.S. and in the countries in which we manufacture or sell our products;
- compliance with trade or other laws in a variety of jurisdictions;
- trade restrictions, transportation delays, work stoppages, and economic and political instability;
- changes in import/export regulations, tariffs and freight rates;
- difficulties in collecting receivables and enforcing contracts;
- currency exchange rate fluctuations;
- restrictions on the transfer of funds from foreign subsidiaries to the U.S.;
- the possibility of international conflict, particularly between or among China, the U.K., Germany, Taiwan and the U.S.;
- legal, regulatory, political and cultural differences among the countries in which we do business;
- longer customer payment terms; and
- changes in U.S. or foreign tax regulations.

We have significant operations and assets in China, the U.K., Germany, Hong Kong and Taiwan and, as a result, will be subject to risks inherent in doing business in those jurisdictions, which may adversely affect our financial performance and operating results.

We have a significant portion of our assets in mainland China, U.K., Germany, Hong Kong and Taiwan. Our ability to operate in these countries may be adversely affected by changes in those jurisdictions' laws and regulations, including those relating to taxation, including, but not limited to income tax and value added tax, import and export tariffs, environmental regulations, land use rights, property and other matters. In addition, our operating results and financial performance are subject to the economic and political situations. We believe that our operations are in compliance with all applicable legal and regulatory requirements. However, the central or local governments of these jurisdictions may impose new, stricter regulations or interpretations of existing regulations that would require additional expenditures and efforts on our part to ensure our compliance with such regulations or interpretations.

Changes in the political environment or government policies in those jurisdictions could result in revisions to laws or regulations or their interpretation and enforcement, increased taxation, restrictions on imports, import duties or currency revaluations. In addition, a significant destabilization of relations between or among China, the U.K., Germany, Hong Kong, Taiwan and the U.S. could result in restrictions or prohibitions on our operations or the sale of our products or the forfeiture of our assets in these jurisdictions. There can be no certainty as to the application of the laws and regulations of these jurisdictions in particular instances. Enforcement of existing laws or agreements may be sporadic and implementation and interpretation of laws inconsistent. Moreover, there is a high degree of fragmentation among regulatory authorities, resulting in uncertainties as to which authorities have jurisdiction over particular parties or transactions. The possibility of political conflict between these countries or with the U.S. could have an adverse impact upon our ability to transact business in these jurisdictions and to generate profits.

Significant uncertainties related to changes in governmental policies and participation in international trading partnerships or economic unions currently exist, and, depending upon how such uncertainties are resolved, the changes could have a material adverse effect on us.

Changes to existing trade agreements, such as the North American Free Trade Agreement, greater restrictions on international trade generally and significant increases in tariffs on goods imported into the United States, particularly from China, could materially adversely affect our business and operations. Changes in U.S. social, political, regulatory and economic conditions or in laws and policies governing foreign trade, manufacturing, development and investment in the territories and countries where we currently develop, manufacture and sell products, and any negative reactions towards the United States as a result of such changes, could adversely affect our business and operations. In addition, negative sentiments towards the U.S. among non-U.S. customers and among non-U.S. employees or prospective employees could adversely affect our international sales or the hiring and retention of qualified employees, respectively.

The United Kingdom exit from the European Union has also created political and economic uncertainty, particularly in the U.K. and the European Union, and this uncertainty may last for years. Our business and operations in the U.K. the European Union, and worldwide could be materially adversely affected by the U.K. exit. Future events as a consequence of the U.K. exit, including stresses within the U.K. itself, may cause significant volatility in global financial markets, including global currency and debt markets, and result in a slowdown in economic activity in the U.K., Europe or globally, which could materially adversely affect our operating results and growth prospects. In addition, our business and operations could be materially adversely affected by new or revised trade agreements between countries in which we have operations or do business, including the U.S., the U.K., the European Union and China, as well as by the possible impositions of tariffs or trade or other regulatory barriers by any nation where we have operations or do business.

Tariffs or other restrictions imposed by the United States Trade Representative may affect our operations in the U.S., may disrupt our activities in the U.S., may have an adverse impact on our profitability and results of operations and may encourage the independent development in China of products and electronic components that will compete with ours or displace our products and components, resulting in an adverse impact on our Chinese business.

In May 2019, at the direction of the President of the United States, the United States increased the level of tariffs from 10% to 25% on approximately $200 billion worth of Chinese imports. The President also ordered the U.S. Trade Representative to begin the process of raising tariffs on essentially all remaining imports from China, which are valued at approximately $300 billion. These tariffs are in addition to the recently imposed new or higher tariffs on specified products imported from China in response to what the U.S. characterizes as unfair trade practices. China responded to the earlier increased tariffs by proposing new or higher tariffs on specified products imported from the United States. Negotiations between the U.S. and China to resolve the issues that precipitated the impositions of these tariffs are reported to be ongoing, but the situation is dynamic and the timing and nature of any ultimate resolution is currently uncertain. In June 2019, President Trump and Chinese President Xi Jinping agreed that they did not plan more tariffs against each other's countries, but on August 1, 2019, President Trump announced that on September 1, 2019, the U.S. would put an additional tariff of 10% on $300 billion of goods and products coming from China to the U.S.

On August 23, 2019, in response to China announcing additional tariffs on U.S. products, President Trump instructed the U.S. Trade Representative to increase by 5% the tariffs on approximately $550 billion worth of Chinese imports to the U.S. This would increase the tariff rate on $250 billion worth of Chinese imports, effective October 1, 2019 to 30% and raise the tariff rate to 15% on $300 billion worth of Chinese imports previously announced, but on September 11, 2019 President Trump announced that the effective date would be extended to October 15, 2019 as "a gesture of goodwill." On October 12, 2019, President Trump announced that the U.S. would halt the October 15, 2019 tariff increase after positive negotiations with the China representatives in Washington, D.C. On January 15, 2020, the U.S. and China signed a Phase One trade deal pursuant to which, among other things, the U.S. will modify its Section 301 tariff actions (described in this risk factor) in a significant way.

Most of our products are manufactured in China and then a portion of those products are imported into the U.S. The impacts on us of the recently imposed and proposed tariffs are uncertain because of the dynamic nature of governmental actions and responses, as well as possible exemptions for certain products. If the U.S. and China are able to negotiate the issues to restore a mutually advantageous and fair trading regime, the increased tariffs could be eliminated, but given the uncertainties, there can be no assurance of whether, or when, this will be accomplished. We have taken actions, and may take additional steps, to mitigate those impacts and protect our competitive position in the marketplace. If we determine to pass some or all of these new tariff burdens on to our customers, the result may be a degradation of our competitive position and a loss of customers that would adversely affect our operating performance. It is not clear at this time what the ultimate outcome of these tariff actions and our mitigation efforts will be, but given the importance of our Chinese operations and related sales, and the impacts of existing and possible future restrictions with regard to transactions with Chinese entities, it is very possible that our operating results and/or financial condition may be adversely affected.

On August 25, 2019, President Trump advised American companies to seek alternatives to China for the manufacture of their products, citing the U.S. "International Emergency Economic Powers Act of 1977" as a possible basis for applying a sanction of this sort. It is not clear at this time when, whether or in what form, this threat will be put into action, but if it does materialize our results of operations and financial condition likely will be materially adversely affected.

In addition, China is stepping up efforts to design and manufacture semiconductors itself rather than buy from the U.S., amid fears that sanctions might cripple its high-tech industry. U.S. restrictions on exports to Chinese telecoms equipment makers have sharpened Beijing's focus on semiconductor self-sufficiency. China's ministry of finance announced tax breaks "to support the development of integrated circuit design and the software industry," cancelling corporate taxes for some companies for two years. Although the outcome of these efforts is uncertain, the development of such capacity in China would likely have a material adverse effect on our profitability and results of operations.

The U.K.'s exit from the European Union ("E.U.") will continue to have uncertain effects and could adversely impact our business, results of operations and financial condition.

On June 23, 2016, the U.K. voted to exit from the E.U. (commonly referred to as "Brexit"). The U.K. exited the E.U. on January 31, 2020. The U.K.'s exit from the E.U. is to be followed by an 11-month transition period to allow the U.K. and the E.U. to finalize new trade, security, data, fishing and transport policies to shape their new relationship. The impacts of the implementation of Brexit and the resulting relationship between the U.K. and the E.U. are uncertain for companies doing business both in the U.K. and the overall global economy. The U.K. vote impacted global markets, including various currencies, and resulted in a sharp decline in the value of the British Pound as compared to the U.S. dollar and other major currencies. The fluctuation of currency exchange rates may expose us to gains and losses on non-U.S. currency transactions. Volatility in the securities markets and in currency exchange rates may continue as the U.K. and the E.U. finalize the new trade, security data, fishing and transport policies. While we have not experienced any material financial impact from Brexit on our business to date, we cannot predict its future implications. Any impact from Brexit on our business and operations over the long term will depend, in part, on the outcome of tariff, tax treaties, trade, regulatory, and other negotiations the U.K. conducts.

A slowdown in the Chinese economy could limit the growth in demand for electronic devices containing our products, which would have a material adverse effect on our business, operating results and prospects.

We believe that an increase in demand in China for electronic devices that include our products will be an important factor in our future growth. Continuing weakness in the Chinese economy could result in a decrease in demand for electronic devices containing our products and, thereby, materially and adversely affect our business, operating results and prospects.

Economic regulation in China could materially and adversely affect our business, operating results and prospects.

We have a significant portion of our manufacturing capacity in mainland China. In addition, in 2019 approximately 51% of our total sales were shipped to customers in China. In recent years, the Chinese economy has experienced periods of rapid expansion and wide fluctuations in the rate of inflation. In response to these factors, the Chinese government has, from time to time, adopted measures to regulate growth and contain inflation, including measures designed to restrict credit or control prices. Such actions in the future could increase the cost of doing business in China or decrease the demand for our products in China and, thereby, have a material adverse effect on our business, operating results and prospects.

We could be adversely affected by violations of the United States' Foreign Corrupt Practices Act, the U.K.'s Bribery Act 2010, China's anti-corruption campaign and similar worldwide anti-bribery laws.

The United States' Foreign Corrupt Practices Act ("FCPA"), the United Kingdom's Bribery Act 2010 (the "U.K. Bribery Act"), China's anti-corruption campaign and similar anti-bribery laws in other jurisdictions generally prohibit companies and their intermediaries from making improper payments to government officials for the purpose of obtaining or retaining business. Our policies mandate compliance with these anti-bribery laws. We operate in many parts of the world that may have experienced governmental corruption to some degree and, in certain circumstances, strict compliance with anti-bribery laws may conflict with local customs and practices. We train our staff concerning FCPA, the U.K. Bribery Act and related anti-bribery laws. We have established procedures and controls to monitor internal and external compliance. There can be no assurance that our internal controls and procedures always will protect us from reckless or criminal acts committed by our employees or agents, and we have no third party attestation to the effectiveness of our internal controls related to fraud and corruption. If we are found to be liable for FCPA, the U.K. Bribery Act and other anti-bribery law violations (either due to our own acts or inadvertence, or due to the acts or inadvertence of others), we could incur criminal or civil penalties or other sanctions, which could have a material adverse effect on our business and operating results.

We are subject to foreign currency risk as a result of our international operations.

We face exposure to adverse movements in foreign currency exchange rates, principally the Chinese Yuan, the Taiwanese dollar, the Euro and the British Pound Sterling and, to a lesser extent, the Japanese Yen and the Hong Kong dollar. Our income and expenses are based on a mix of currencies and a decline in one currency relative to the other currencies could adversely affect our operating results. Furthermore, our operating results are reported in U.S. dollars, which is our reporting currency. In the event the U.S. dollar weakens against a foreign currency, we will experience a currency transaction loss, which could adversely affect our operating results. Also, fluctuations in foreign currency exchange rates may have an adverse impact and be increasingly influential to our overall sales, profits and operating results as amounts that are measured in foreign currency are translated back to U.S. dollars for reporting purposes. Our foreign currency risk may change over time as the level of activity in foreign markets grows and could have an adverse impact upon our financial results, especially if the portion of our sales attributable to Europe increases. We have taken, and plan to continue to take, efforts to mitigate some of our foreign currency exposure by entering into foreign exchange hedging agreements with financial institutions to reduce exposures to some of the principal currencies in countries in which we conduct sales, acquire raw materials, build products and make capital investments, but these efforts may not be successful. In this regard, these hedging agreements do not cover all currencies in which we do business, do not eliminate foreign currency risk entirely for the currencies that they do cover, and involve costs and risks of their own in the form of transaction costs, credit requirements and counterparty risk.

China is experiencing rapid social, political and economic change, which has increased labor costs and other related costs that could make doing business in China less advantageous than in prior years. Increased labor costs in China could adversely affect our business, operating results and financial condition.

Historically, labor in China has been readily available at a lower cost compared to other countries. However, because China is experiencing rapid social, political and economic change, there can be no assurance that labor will continue to be available in China at costs consistent with historical levels. Any future increase in labor cost in China is likely to be higher than historical and projected amounts and may occur multiple times in any given year. As a result of experiencing such rapid social, political and economic change, China is also likely to enact new, and/or revise its existing, labor laws and regulations on employee compensation and benefits. These changes in Chinese labor laws and regulations will likely to have an adverse effect on product manufacturing costs in China. Furthermore, if China workers go on strike to demand higher wages, our operations could be disrupted. Many of our suppliers are currently dealing with labor shortages in China, which may result in future supply delays and disruptions and may drive a substantial increase in their labor costs that is likely to be shared by us in the form of price increases to us. New or revised government labor laws or regulations, strikes or labor shortages could cause our product costs to rise and/or could cause manufacturing partners on whom we rely to exit the business. These events could have a material adverse impact on our product availability and quality, which would affect our business, operating results and financial condition.

We may not continue to receive preferential tax treatment in Asia, thereby increasing our income tax expense and reducing our net income.

As an incentive for establishing our manufacturing subsidiaries in China, we receive preferential tax treatment. Governmental changes in foreign tax law may cause us not to be able to continue receiving these preferential tax treatments in the future, which may cause an increase in our income tax expense, thereby reducing our net income.

The distribution of any earnings of certain foreign subsidiaries may be subject to foreign income taxes, thus reducing our net income.

Our undistributed foreign earnings continue to be indefinitely reinvested in foreign operations, with limited exceptions related to earnings of European and Asian subsidiaries. Any future distributions of foreign earnings will not be subject to additional U.S. income tax, but may be subject to foreign withholding taxes. As of December 31, 2019, we had undistributed earnings from non-U.S. operations of approximately $913 million (including approximately $115 million of restricted earnings, which are not available for dividends). Undistributed earnings of our China subsidiaries comprise $425 million of this total. Additional Chinese withholding taxes of approximately $46 million would be required should the $425 million of such earnings be distributed out of China as dividends.

We could be adversely affected by the compromise or theft of our technology, know-how, data or intellectual property or a requirement that we yield rights in technology, know-how, data stored in foreign jurisdictions or intellectual property that we use in such foreign jurisdictions.

In general, we rely on the intellectual property and unfair competition laws and contractual restrictions to protect our technology, know-how, data and intellectual property in the foreign jurisdictions in which we operate. We believe our technology, know-how, data and other intellectual property rights are important to our success. Any unauthorized use of our technology, know-how, data and other intellectual property rights could harm our competitive advantages and business. For example, some jurisdictions have not protected intellectual property rights to the same extent as the United States, and infringement of intellectual property rights continues to pose a serious risk of doing business in such jurisdictions. The measures we take to protect our intellectual property rights may not be adequate. Furthermore, the application of laws governing intellectual property rights in certain foreign jurisdictions is uncertain and evolving, and could involve substantial risks to us. Infringement of our patents or required technology or know-how transfers to foreign entities could create competition for us, and such competition could have a material adverse effect on our longer-term profitability and success.

RISKS RELATED TO OUR COMMON STOCK

Variations in our quarterly operating results may cause our stock price to be volatile.

We have experienced substantial variations in net sales, gross profit margin and operating results from quarter to quarter. We believe that the factors that influence this variability of quarterly results include:

- strength of the global economy and the stability of the financial markets;
- general economic conditions in the countries where we sell our products;
- seasonality and variability in the computing and communications market and our other end-markets;
- the timing of our and our competitors' new product introductions;
- product obsolescence;
- the scheduling, rescheduling and cancellation of large orders by our customers;
- the cyclical nature of the demand for our customers' products;
- our ability to develop new process technologies and achieve volume production at our fabrication facilities;
- changes in manufacturing yields;
- adverse movements in exchange rates, interest rates or tax rates; and
- the availability of adequate supply commitments from our outside suppliers or subcontractors.

Accordingly, a comparison of our operating results from period to period is not necessarily meaningful to investors and our operating results for any period do not necessarily indicate future performance. Variations in our quarterly results may trigger volatile changes in our stock price.

General or industry-specific market conditions or stock market performance or domestic or international macroeconomic and geopolitical factors unrelated to our performance also may affect the price of our stock. For these reasons, investors should not rely on recent or historical trends to predict future stock prices, financial condition, operating results or cash flows. In addition, as discussed in Part I, Item 3 "Legal Proceedings" of this Annual Report, we are involved in various legal proceedings that arise in the normal course of business. Additional volatility in the price of our securities could result in litigation matters, which could result in substantial costs and the diversion of management time and resources.

We may enter into future acquisitions and take certain actions in connection with such acquisitions that could adversely affect the price of our Common Stock.

As part of our growth strategy, we expect to review acquisition prospects that would implement our vertical integration strategy or offer other growth opportunities. From time to time, we may be in various stages of discussions and we may acquire businesses, products or technologies in the future. In the event of future acquisitions, we could:

- use a significant portion of our available cash;
- issue equity securities, which would dilute current stockholders' percentage ownership;
- incur substantial debt;

- incur or assume contingent liabilities, known or unknown;
- incur amortization expenses related to intangibles;
- incur large, immediate accounting write-offs;
- incur substantial expense and diversion of management attention, regardless of the success of the acquisition; and
- create goodwill and other intangible assets that may require impairment charges in the future.

Such actions by us could harm our operating results and adversely affect the price of our Common Stock.

Our directors, executive officers and significant stockholders hold a substantial portion of our Common Stock, which may lead to conflicts with other stockholders over corporate transactions and other corporate matters.

Our directors, executive officers and our affiliate, LSC, beneficially own approximately 21% of our outstanding Common Stock, including options to purchase shares of our Common Stock that are exercisable within 60 days of December 31, 2019. These stockholders, acting together, will be able to influence significantly all matters requiring stockholder approval, including the election of directors and significant corporate transactions such as mergers or other business combinations. This control may delay, deter or prevent a third party from acquiring or merging with us, which could adversely affect the market price of our Common Stock.

LSC, our largest stockholder, owns approximately 15.2% (approximately 7.8 million shares) of our Common Stock. Some of our directors and executive officers may have potential conflicts of interest because of their positions with LSC or their ownership of LSC common stock. In the third quarter of 2019 we entered into a Share Swap Agreement that provides for the acquisition of LSC by the Company. At the effective date of the transaction, each share of LSC will be converted into the right to receive TWD $42.50 per share in cash, or approximately US $1.42 per share based on December 31, 2019 exchange rates. The aggregate consideration to be paid by the Company, based on the December 31, 2019 exchange rate, is approximately $437 million. This amount is subject to change, based on the Taiwan dollar to United States dollar exchange rate at closing. The acquisition received LSC shareholder approval on October 25, 2019, and we anticipate completing the acquisition in the second half of 2020, subject to customary closing conditions and regulatory approvals. We expect to fund the purchase price of the transaction primarily with proceeds from a new bank financing arrangement.

Raymond Soong, the Chairman of the Board of Directors, is the Chairman of LSC, and is the Chairman of Lite-On Technology Corporation (“LTC”), a significant shareholder of LSC. C.H. Chen, our former President and Chief Executive Officer and currently the Vice Chairman of the Board of Directors, is also Vice Chairman of LSC and a board member of LTC. Dr. Keh-Shew Lu, a member of our Board of Directors and our President and Chief Executive Officer, is a board member of LTC and a board member of Nuvoton. Several of our directors and executive officers may own LSC common stock or hold options to purchase LSC common stock. Service on our Board of Directors and as a director or officer of LSC, or ownership of LSC common stock by our directors and executive officers, could create, or appear to create, actual or potential conflicts of interest when directors and officers are faced with decisions that could have different implications for LSC and us. For example, potential conflicts could arise in connection with decisions involving the Common Stock owned by LSC, or under the other agreements we may enter into with LSC. In 2019, 2018 and 2017, LSC accounted for less than 3% of our silicon wafer supply and our finished good’s supply. Prior to the consummation of our acquisition of LSC, we may have difficulty resolving any potential conflicts of interest with LSC, and even if we do, the resolution may be less favorable than if we were dealing with an unrelated third party.

We were formed in 1959, and our early corporate records are incomplete. As a result, we may have difficulty in assessing and defending against claims relating to rights to our Common Stock purporting to arise during periods for which our records are incomplete.

We were formed in 1959 under the laws of California and reincorporated in Delaware in 1968. We have had several transfer agents since being formed. In addition, our early corporate records, including our stock ledger, are incomplete. As a result, we may have difficulty in assessing and defending against claims relating to rights to our Common Stock purporting to arise during periods for which our records are incomplete.

Non-cash tender offers, debt equity swaps or equity exchanges to consummate our business activities are likely to have the effect of diluting the ownership interest of existing stockholders, including qualified stockholders who receive shares of our Common Stock in such business activities.

We, from time to time, may utilize non-cash tender offers, debt equity swaps or equity exchanges in accordance with the guidance and rules promulgated by the SEC to consummate our business activities. Such means to consummate our business activities will likely involve issuance of our Common Stock in large quantities and will subsequently dilute the ownership interest of existing stockholders, including stockholders who previously received shares of our Common Stock in such transactions. Any sales in the public market of the newly issued Common Stock could adversely affect prevailing market prices of our Common Stock. In addition, utilizing non-cash tender offers, debt equity swaps or equity exchanges may encourage short selling because such utilization could depress the market price of our Common Stock.

***Anti-takeover effects of certain provisions of Delaware law and our Certificate of Incorporation and Bylaws, may hinder a take-over attempt*.**

Some provisions of Delaware law, our certificate of incorporation and bylaws may be deemed to have an anti-takeover effect and may delay or prevent a tender offer or takeover attempt, including those attempts that might result in a premium over the market price for the shares held by stockholders.

Section 203 of Delaware General Corporation Law may deter a take-over attempt.

Section 203 of the Delaware General Corporation Law prohibits transactions between a Delaware corporation and an "interested stockholder," which is defined as a person who, together with any affiliates or associates, beneficially owns, directly or indirectly, 15.0% or more of the outstanding voting shares of a Delaware corporation. This provision prohibits certain business combinations between an interested stockholder and a Delaware corporation for a period of three years after the date the stockholder becomes an interested stockholder, unless:

(i) either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder is approved by the corporation's board of directors prior to the date the interested stockholder becomes an interested stockholder;

(ii) the interested stockholder acquired at least 85.0% of the voting stock of the corporation (other than stock held by directors who are also officers or by certain employee stock plans) in the transaction in which the stockholder became an interested stockholder; or

(iii) the business combination is approved by a majority of the board of directors and by the affirmative vote of 66-2/3% of the outstanding voting stock that is not owned by the interested stockholder.

For this purpose, business combinations include mergers, consolidations, sales or other dispositions of assets having an aggregate value in excess of 10.0% of the aggregate market value of the consolidated assets or outstanding stock of the corporation, and certain transactions that would increase the interested stockholder's proportionate share ownership in the corporation.

Certificate of Incorporation and Bylaw Provisions may deter a take-over attempt.

Provisions of our certificate of incorporation and bylaws may have the effect of making it more difficult for a third party to acquire control of us. In particular, our certificate of incorporation authorizes our Board of Directors to issue, without further action by the stockholders, up to 1.0 million shares of preferred stock with rights and preferences, including voting rights, designated from time to time by the Board of Directors. The existence of authorized but unissued shares of preferred stock enables our Board of Directors to render it more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise.

Item 1B. Unresolved Staff Comments.

None

Item 2. Properties.

Our corporate headquarters are located in Plano, Texas. As of December 31, 2019, we own approximately 4.0 million square feet of property and lease approximately 3.1 million square feet of property, with leases expiring at various times between 2020 and 2028 and with land rights expiring in 2056. We also own and lease properties around the world for use as sales offices, design centers, research and development labs, warehouses, logistic centers, and manufacturing support. The size and/or location of these properties change from time to time based on business requirements. The table below sets forth the largest of the properties either owned or leased by the Company:

Primary use	Location	Sq. Ft.
Headquarters/R&D center	USA - Plano, TX	41,780
Regional sales office/Administrative office/R&D center/apartment	USA - Milpitas, California	86,321
Land use right/Manufacturing facilities/Administrative office/R&D center/Logistics	China - Chengdu	1,689,474
Regional sales office/R&D center/Warehouse	China - Hong Kong	360,395
Administrative office/Land use right/manufacturing facility/R&D center	China - Jinan, Shandong	1,059,907
Manufacturing facility/R&D center/Logistics/Dormitory/Manufacturing facility/Sales/Administrative office/Land use right	China - Shanghai	2,322,424
Regional sales office	China - Shenzhen	17,318
Administrative office/Logistics/Manufacturing/R&D center	England - Oldham	156,076
Manufacturing facility/R&D center	Germany - Neuhaus	52,508
Manufacturing facility/R&D center/Logistics/Administrative office	Scotland, Greenock	318,782
Manufacturing facility/R&D center/Logistics/Administrative office	Taiwan - Hsinbei	120,441
R&D center	Taiwan - Hsinchu	25,372
Regional sales office/Administrative office/Logistics/Regional Sales/Logistics	Taiwan - Taipei	52,348
Regional sales office/Administrative office/Logistics	Taiwan - Taoyuan	78,899

We believe our current facilities are adequate for the foreseeable future.

Item 3. Legal Proceedings.

From time to time, we are involved in various legal proceedings that arise in the normal course of business. While we intend to defend any lawsuit vigorously, we presently believe that the ultimate outcome of any current pending legal proceeding will not have any material adverse effect on our financial position, cash flows or operating results. However, litigation is subject to inherent uncertainties, and unfavorable rulings could occur. An unfavorable ruling could include monetary damages, which could impact our business and operating results for the period in which the ruling occurs or future periods. In addition, our foreign operations expose us to unique intellectual property technology risks compared to a company with fewer or no international operations. Such risks could lead to litigation or other disputes that would not be applicable to a company with limited or no international operations and could have a material and adverse effect on our financial condition and results of operations. See “Risk Factors – Risks Related to Our International Operations” in Part I, Item 1A of this Annual Report for a more detailed summary of the intellectual property technology risks associated with our international business operations.

In August 2018, the Company received a letter from the EPA concerning potential violations under the Clean Air Act Amendments of 1990, which do not involve any actual discharge of materials into the environment, arising as a result of an inspection at KFAB. In February 2019, we fully resolved this matter with the EPA and paid approximately $0.2 million. The settlement amount was accrued at December 31, 2018.

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.

Market Information

Our Common Stock is traded on the Nasdaq Global Select Market ("NasdaqGS") under the symbol "DIOD."

Holders

As of February 4, 2020, the approximate number of common stockholders was 237.

Dividends

We have never declared or paid dividends on our Common Stock, and currently do not intend to pay dividends in the foreseeable future as we intend to retain any earnings for future use in our business. Our U.S. banking credit facility permits us to pay dividends up to $3.0 million per fiscal year to our stockholders so long as we have not defaulted at the time of such dividend and no default would result from declaring and paying such dividend. The payment of dividends is within the discretion of our Board of Directors, and will depend upon, among other things, our earnings, financial condition, capital requirements, and general business conditions.

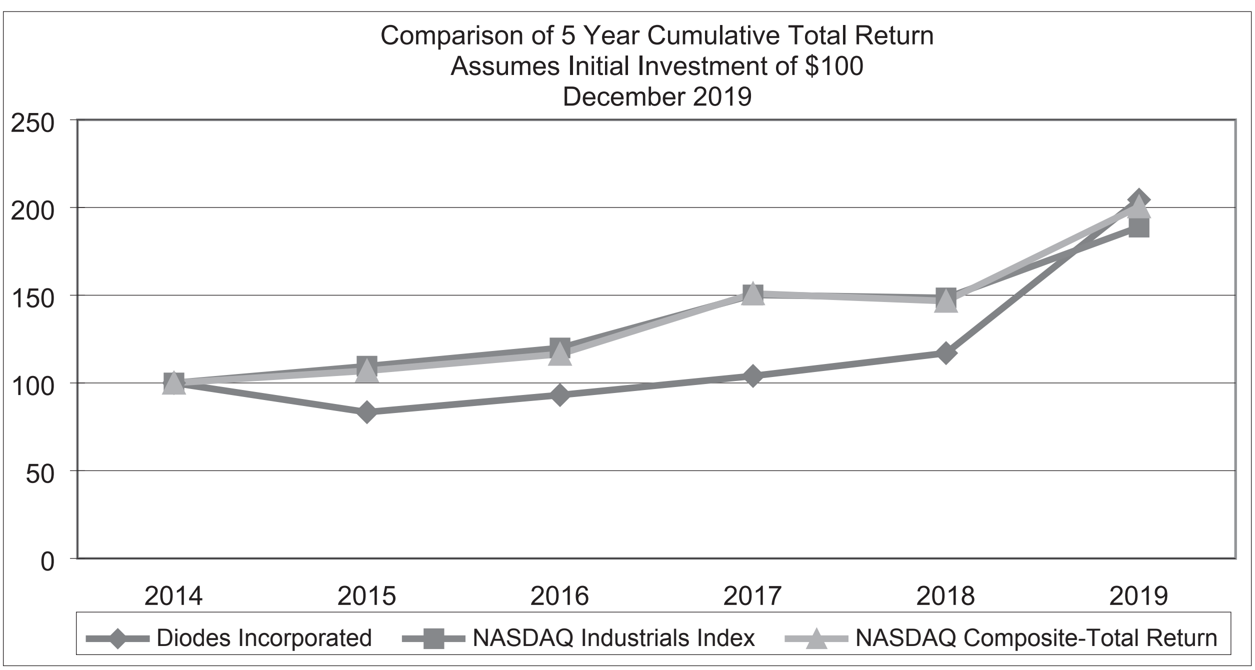
Securities Authorized for Issuance Under Equity Compensation Plans

The information regarding our equity compensation plans required to be disclosed by Item 201(d) of Regulation S-K is incorporated by reference from our 2020 definitive proxy statement, which we expect to file with the SEC in April 2020, in Item 12 of Part III of this Annual Report.

Performance Graph

The following graph compares the yearly percentage change in the cumulative total stockholder return of our Common Stock against the cumulative total return of the Nasdaq Composite and the Nasdaq Industrial Index for the five calendar years ending December 31, 2019. The graph is not necessarily indicative of future price performance.

The graph shall not be deemed incorporated by reference by any general statement incorporating by reference this Annual Report into any filing under the Securities Act of 1933 or under the Securities Exchange Act of 1934, except to the extent that the Company specifically incorporates this information by reference, and shall not otherwise be deemed filed under such Acts.



Source: Prepared by Zacks Investment Research, Inc. Used with permission. All rights reserved. Copyright 1980-2019.

The graph assumes $100 invested on December 31, 2013 in our Common Stock, the stock of the companies in the Nasdaq Composite Index and the stock of companies in the Nasdaq Industrial Index, and that all dividends received within a quarter, if any, were reinvested in that quarter.

December 2019

		2014	2015	2016	2017	2018	2019
Diodes Incorporated	Return %		(16.65)	11.71	11.69	12.52	74.74
	Cum $	100	83.35	93.11	103.99	117.01	204.46
NASDAQ Industrial Index	Return %		9.56	9.47	25.21	(1.13)	27.17
	Cum $	100	109.56	119.94	150.18	148.47	188.81
NASDAQ Composite-Total Returns	Return %		6.96	8.87	29.64	(2.84)	36.69
	Cum $	100	106.96	116.45	150.96	146.67	200.49

Issuer Purchases of Equity Securities

During the fourth quarter of 2019, the Company did not repurchase any shares of its Common Stock. During November 2015, the Company's board of directors authorized a share repurchase plan to repurchase up to an aggregate of $100 million of the Company's outstanding common stock. This repurchase plan expired December 31, 2019, and was not renewed.

Item 6. Selected Financial Data.

The following selected consolidated financial data for the fiscal years ended December 31, 2015 through 2019, is qualified in its entirety by, and should be read in conjunction with, the other information and consolidated financial statements, including the notes thereto, appearing elsewhere herein. Certain immaterial amounts as presented in the accompanying consolidated financial statements have been reclassified to conform to 2019 financial statement presentation.

(In thousands, except per share data)	Twelve Months Ended December 31,				
Statement of Income Data	**2019**	**2018**	**2017**	**2016**	**2015**
Net sales	$ 1,249,130	$ 1,213,989	$ 1,054,204	$ 942,162	$ 848,904
Gross profit	465,807	435,276	356,776	286,923	248,583
Gain (loss) on disposal of fixed assets	24,429	636	245	(69)	59
Total operating expenses	265,199	280,794	277,367	248,932	206,481
Income from operations	200,608	154,482	79,409	37,991	42,102
Net income (loss) attributable to common stockholders	153,250	104,021	(1,805)	15,935	24,274
Earnings (loss) per share attributable to common stockholders					
Basic	3.02	2.09	(0.04)	0.33	0.50
Diluted	2.96	2.04	(0.04)	0.32	0.49
Number of shares used in computation:					
Basic	50,787	49,841	48,824	48,597	48,210
Diluted	51,860	50,935	48,824	49,789	49,500

	As of December 31,				
Balance Sheet Data	**2019**	**2018**	**2017**	**2016**	**2015**
Total assets	$ 1,639,384	$ 1,526,371	$ 1,488,673	$ 1,528,552	$ 1,598,827
Working capital	524,637	480,814	415,162	547,409	570,888
Long-term debt, net of current portion	64,401	186,143	247,492	413,126	453,738
Total Diodes Incorporated stockholders' equity	1,106,424	931,463	831,504	776,019	795,345

	Twelve Months Ended December 31,				
Cash Flow Data	**2019**	**2018**	**2017**	**2016**	**2015**
Net cash and cash equivalents provided by operating activities	$ 229,772	$ 185,566	$ 181,123	$ 124,742	$ 118,111
Capital expenditures	98,505	87,507	111,161	58,549	133,244

In addition, during the periods presented we made the following acquisitions considered significant to our operations. In 2015 we acquired Pericom and in 2019 we acquired GFAB. In addition, in the third quarter of 2019 we entered into a Share Swap Agreement that provides for the acquisition of LSC by the Company. We anticipate closing the LSC acquisition in the second half of 2020.

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

The following section discusses management's view of the financial condition, results of operations and cash flows of Diodes Incorporated and its subsidiaries (collectively, "the Company," "our Company," "we," "our," "ours," or "us") and should be read together with the consolidated financial statements and the notes to consolidated financial statements included elsewhere in this Form 10-K.

The following discussion contains forward-looking statements and information relating to our Company. We generally identify forward-looking statements by the use of terminology such as "may," "will," "could," "should," "potential," "continue," "expect," "intend," "plan," "estimate," "anticipate," "believe," "project," or similar phrases or the negatives of such terms. We base these statements on our beliefs as well as assumptions we made using information currently available to us. Such statements are subject to risks, uncertainties and assumptions, including those identified in Part I, Item 1A."Risk Factors," as well as other matters not yet known to us or not currently considered material by us. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those anticipated, estimated or projected. Given these risks and uncertainties, prospective investors are cautioned not to place undue reliance on such forward-looking statements. Forward-looking statements do not guarantee future performance and should not be considered as statements of fact.

You should not unduly rely on these forward-looking statements, which speak only as of the date of this Annual Report on Form 10-K. Unless required by law, we undertake no obligation to publicly update or revise any forward-looking statements to reflect new information or future events or otherwise. The Private Securities Litigation Reform Act of 1995 (the "Act") provides certain "safe harbor" provisions for forward-looking statements. All forward-looking statements made in this Annual Report on Form 10-K are made pursuant to the Act.

This discussion and analysis does not address certain items in respect of fiscal 2017 in reliance on amendments to disclosure requirements adopted by the SEC in 2019. A discussion and analysis of fiscal 2017 may be found in Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations of our Annual Report on Form 10-K for the fiscal year ended December 31, 2018, filed with the SEC on February 21, 2019, and such discussion and analysis is hereby incorporated into this Form 10-K by this reference .

Summary of the Twelve Months Ended December 31, 2019

- Revenue grew to a record \$1.25 billion, an increase of 2.9% over the \$1.21 billion in 2018;
- Gross profit was a record \$465.8 million, a 7.0% increase, compared to the \$435.3 million in 2018;
- Gross margin improved 140 basis points to a record 37.3% from 35.9% in 2018;
- Operating income increased 29.9% to a record \$200.6 million, or 16.1% of revenue, compared to \$154.5 million, or 12.7%, of revenue in 2018;
- Net income was a record \$153.3 million, or \$2.96 per diluted share, compared to \$104.0 million, or \$2.04 per share, in 2018; and
- Achieved \$229.8 million cash flow from operations. We had \$98.5 million of capital expenditures, or 7.9% of revenue. Net cash flow was a positive \$17.7 million, which includes the net pay down of \$117.3 million of long-term debt.

Summary of the Twelve Months Ended December 31, 2018

- Revenue grew to a record \$1.2 billion, an increase of 15.2% over the \$1.05 billion in 2017;
- Gross profit was a record \$435.3 million, a 22.0% increase, compared to the \$356.8 million in 2017;
- Gross margin improved 210 basis points to 35.9% from 33.8% in 2017;
- Operating income increased to a record \$154.5, or 12.7% of revenue, compared to 7.5%, in 2017;
- Net income was a record \$104.0 million, or \$2.04 per diluted share, compared to a net loss of (\$1.8) million, or (\$0.04) per share, in 2017; and
- Achieved \$185.6 million cash flow from operations. We had \$87.5 million of capital expenditures, or 7.2% of revenue. Net cash flow was a positive \$36.6 million, which includes the net pay down of \$56.8 million of long-term debt.

Business Outlook and Factors Relevant to Our Results of Operations

We continue to pursue our previously announced goals of achieving revenue of $2.5 billion and gross margin of 40%, representing gross profit of $1.0 billion, all by 2025. Acquisitions will continue to be a key part of our growth strategy to reach our 2025 revenue goal. We have a solid pipeline of designs and expanded customer relationships across all regions and product lines. The success of our business depends on, among other factors, the strength of the global economy and the stability of the financial markets, our customers' demand for our products, the ability of our customers to meet their payment obligations, the likelihood of customers not canceling or deferring existing orders, and the strength of consumers' demand for items containing our products in the end-markets we serve. We believe the long-term outlook for our business remains generally favorable despite the uncertainties in the global economy as we continue to execute on the strategy that has proven successful for us over the years. In April 2019, the Company announced the completion of the acquisition of GFAB. In the third quarter of 2019 we entered into a Share Swap Agreement that provides for the acquisition of LSC by the Company. At the effective date of the transaction, each share of LSC will be converted into the right to receive TWD $42.50 per share in cash, or approximately US $1.42 per share based on December 31, 2019 exchange rates. The aggregate consideration to be paid by the Company, based on the December 31, 2019 exchange rate, is approximately $437 million. This amount is subject to change, based on the Taiwan dollar to United States dollar exchange rate at closing. The acquisition received LSC shareholder approval on October 25, 2019, and we anticipate completing the acquisition in the second half of 2020, subject to customary closing conditions and regulatory approvals. We expect to fund the purchase price of the transaction primarily with proceeds from a new bank financing arrangement. See "Risk Factors – *The success of our business depends on the strength of the global economy and the stability of the financial markets, and any weaknesses in these areas may have a material adverse effect on our net sales, operating results and financial condition."* in Part I, Item 1A of this Annual Report for additional information.

Description of Sales and Expenses

Net sales

The principal factors that have affected or could affect our net sales from period to period are:

- The condition of the economy in general and of the semiconductor industry in particular;
- Political tension, including the implementation of tariffs, among and between the countries in which we do business;
- Our customers' adjustments in their order levels;
- Changes in our pricing policies or the pricing policies of our competitors or suppliers;
- The addition or termination of key supplier relationships;
- The rate of introduction and acceptance by our customers of new products;
- Our ability to compete effectively with our current and future competitors;
- Our ability to enter into and renew key corporate and strategic relationships with our customers, vendors and strategic alliances;
- Changes in foreign currency exchange rates;
- A major disruption of our information technology infrastructure;
- Unforeseen catastrophic events, such as armed conflict, terrorism, fires, typhoons and earthquakes; and
- Any other disruptions, such as change in the political or governmental policies, labor shortages, unplanned maintenance or other manufacturing problems.

Cost of goods sold

Cost of goods sold includes manufacturing costs for our semiconductors and our wafers. These costs include raw materials used in our manufacturing processes as well as labor costs and overhead expenses. Cost of goods sold is also impacted by yield improvements, capacity utilization and manufacturing efficiencies. In addition, cost of goods sold includes the cost of products that we purchase from other manufacturers and sell to our customers. Cost of goods sold is also affected by inventory obsolescence if our inventory management is not efficient.

Selling, general and administrative

Selling, general and administrative expenses relate primarily to compensation and associated expenses for personnel in general management, sales and marketing, information technology, engineering, human resources, procurement, planning and finance, and sales commissions, as well as outside legal, investor relations, accounting, consulting and other operating expenses. Also included in selling, general and administrative expenses are acquisition costs from business combinations.

Research and development

Research and development expenses consist of compensation and associated costs of employees engaged in research and development projects, as well as materials and equipment used for these projects. Research and development expenses are primarily associated with our wafer facilities in China and the U.K. and our manufacturing facilities in Taiwan and China, as well as with our engineers in the U.S. and Taiwan. All research and development expenses are expensed as incurred.

Amortization of acquisition-related intangible assets

Amortization of acquisition-related intangible assets consists of assets such as developed technologies and customer relationships.

Impairment of fixed assets

Impairment of fixed assets consists of the impairment amount recognized as a result of the fair value of an asset being below its recorded value.

Restructuring

Restructuring are one-time charges that must be paid by the Company due to reorganizing or restructuring a part of the business.

Interest income / expense

Interest income consists of interest earned on our cash and investment balances. Interest expense consists of interest payable on our outstanding credit facilities and other debt instruments.

Gain (loss) on securities carried at fair value

We may hold investments in the form of common stock or some other similar equivalent and have elected fair value accounting treatment.

Foreign currency (loss) gain, net

This income account is used to show the amount gained or lost as a result of foreign currency transactions.

Income tax provision

Our global presence requires us to pay income taxes in a number of jurisdictions. See Note 12 of "Notes to Consolidated Financial Statements" for additional information.

Net income attributable to noncontrolling interest

This represents the minority investors' share of our subsidiaries' earnings.

Net income attributable to common stockholders

Net income attributable to common stockholders is net income less net income attributable to noncontrolling interest.

Results of Operations

The following table sets forth, for the periods indicated, the percentage that certain items in the statements of income bear to net sales:

	Percent of Net Sales Twelve Months Ended December 31,	
	2019	2018
Net sales	100.0%	100.0%
Cost of goods sold	(62.7)	(64.1)
Gross profit	37.3	35.9
Operating expenses	(21.2)	(23.2)
Income from operations	16.1	12.7
Interest income	0.2	0.2
Interest expense	(0.6)	(0.8)
Foreign currency (loss) gain, net	(0.3)	(0.3)
Other income (expenses)	0.6	0.6
Income before income taxes and noncontrolling interest	15.9	12.4
Income tax provision	3.5	3.7
Net income	12.3	8.7
Net (income) loss attributable to noncontrolling interest	(0.1)	(0.1)
Net income attributable to common stockholders	12.3	8.6

The following discussion explains in greater detail our consolidated operating results and financial condition. This discussion should be read in conjunction with the consolidated financial statements and notes thereto appearing elsewhere in this Annual Report *(in thousands)*.

	Twelve Months Ended			
	December 31,			
	2019	2018	Increase/(Decrease)	% Change
Net sales	$ 1,249,130	$ 1,213,989	$ 35,141	2.9%
Cost of goods sold	783,323	778,713	4,610	0.6%
Gross profit	465,807	435,276	30,531	7.0%
Operating expenses				
Selling, general and administrative	181,343	176,197	5,146	2.9%
Research and development	88,517	86,286	2,231	2.6%
Amortization of acquisition-related intangible assets	18,041	18,351	(310)	(1.7%)
Impairment of fixed assets	-	390	(390)	(100.0%)
Restructuring	-	206	(206)	(100.0%)
Gain on disposal of fixed assets	(24,429)	(636)	(23,793)	N/A
Other operating income	1,727	-	(1,727)	N/A
Other income (expense)				
Interest income	2,189	1,978	211	10.7%
Interest expense	(7,893)	(9,901)	(2,008)	(20.3%)
Foreign currency loss	(3,737)	(3,701)	36	1.0%
Other income	7,079	7,104	(25)	(0.4%)
Income tax provision	44,131	44,556	(425)	(1.0%)

Net Sales

Net sales increased for the twelve months ended December 31, 2019, compared to the same period last year due to growth in our automotive and industrial markets combined with growth in our frequency control products.

The table below sets forth our revenue as a percentage of total revenue by end-user market:

	Twelve Months Ended December 31,		
	2019	**2018**	**2017**
Industrial	28%	26%	23%
Consumer electronics	23%	25%	26%
Communications	23%	24%	25%
Computing	16%	17%	18%
Automotive	10%	9%	8%

Cost of Goods Sold

Cost of goods sold increased approximately $4.6 million for the twelve months ended December 31, 2019 compared to the same period last year, primarily as a result of our increased sales. As a percent of sales, cost of goods sold was 62.7% for the twelve months ended December 31, 2019, compared to 64.1% for the same period last year. Average unit cost increased 7.4% for the twelve months ended December 31, 2019, compared to the same period last year, due to the sale of higher margin products and increased production facility utilization. For the twelve months ended December 31, 2019, gross profit increased approximately 7.0% when compared to the same period last year. Gross profit margin for the twelve month periods ended December 31, 2019 and 2018, was 37.3% and 35.9%, respectively.

Operating expenses

Operating expenses for the twelve months ended December 31, 2019 decreased approximately $15.6 million, or 5.6%, compared to the same period last year. A significant contributing factor to this decrease was a $24.3 million one-time gain we realized upon selling land. The land was acquired in past years in anticipation of building a new corporate headquarters building. The Company determined its current headquarters was adequate and disposed of the land in the fourth quarter of 2019. Selling, general and administrative expenses (“SG&A”) increased approximately $5.1 million. The increase in SG&A was driven by increases in salaries and benefits, consulting and legal fees, partially offset by decreases in other SG&A expense categories. Research and development expenses (“R&D”) increased approximately $2.2 million, tracking with the increase in sales. Amortization of acquisition-related intangibles decreased approximately $0.3 million reflecting the overall reduction in the balance of intangible assets subject to amortization. SG&A, as a percentage of sales, was 14.5% for both twelve-month periods ended December 31, 2019 and 2018. R&D, as a percentage of sales, was 7.1% for both twelve-month periods ended December 31, 2019 and 2018.

Other (expense)/income

Interest income increased $0.2 million for the twelve months ended December 31, 2019, due to a higher amount of invested funds. Interest expense decreased $2.0 million or 20.3% for the twelve months ended December 31, 2019, due to lower levels of debt partially offset by higher interest rates on the floating rate portions or our debt. Foreign currency losses were relatively flat during the twelve months ended December 31, 2019.

Income tax provision

We recognized income tax expense of approximately $44.1 million for the twelve months ended December 31, 2019, and income tax expense of approximately $44.6 million for the twelve months ended December 31, 2018, resulting in effective income tax rates of 22.3 % and 29.7%, respectively. The decrease in the effective tax rate for 2019 compared to 2018 is primarily attributable to increased net favorable U.S. permanent book-tax differences resulting from enactment of the Tax Cuts and Jobs Act in December 2017.Our undistributed foreign earnings continue to be indefinitely reinvested in foreign operations, with limited exceptions related to earnings of European and Asian subsidiaries. Any future distributions of foreign earnings will not be subject to additional U.S. income tax, but may be subject to foreign withholding taxes. As of December 31, 2019, our foreign subsidiaries held approximately $261 million of cash, cash equivalents and investments of which approximately $60 million would be subject to foreign withholding tax if distributed outside the country in which the related earnings were generated.

Financial Condition

Liquidity and Capital Resources

Our primary sources of liquidity are cash and cash equivalents, short-term investments, funds from operations and, if necessary, borrowings under our credit facilities.

Liquidity requirements

Our primary liquidity requirements have been to meet our capital expenditure needs and to fund ongoing operations. For 2019 and 2018 our working capital was $524.6 million and $480.8 million, respectively. In 2019, our working capital increased due to increases in cash and accounts receivable, reflecting our increased sales. We expect cash generated by our operations together with existing cash, cash equivalents, short-term investments and available credit facilities to be sufficient to satisfy our working capital needs, capital asset purchases, outstanding commitments and other liquidity requirements associated with our existing operations for at least the next 12 months.

Short-term investments

As of December 31, 2019, we had short-term investments of approximately $4.8 million. These investments are highly liquid with maturity dates greater than three months at the date of purchase. The decrease from $7.5 million in 2018, to $4.8 million in 2019 reflects the use of these investments to reduce our debt levels. We generally can access these investments in a relatively short amount of time but in doing so we generally forfeit a portion of interest income.

Short-term debt

Our Asia subsidiaries maintain credit facilities with several financial institutions through our foreign entities worldwide totaling $126.6 million. At December 31, 2019, borrowings were $13.3 million and letters of credit were $1.4 million under the Asia credit facilities. Other than two Taiwanese credit facilities that are collateralized by assets, our foreign credit lines are unsecured, uncommitted, repayable on demand, terminable by the lender at any time and contain no restrictive covenants. These credit facilities bear interest at LIBOR or similar indices plus a specified margin. Interest payments are due quarterly on outstanding amounts under the credit lines.

Long-term debt

We currently have a U.S. banking credit facility (the "U.S. Credit Facility") under which we may draw up to $250 million on a revolving basis, in addition to a $250 million term loan. The U.S. Credit Facility matures October 26, 2021. The remaining portion of the term loan included in the U.S. Credit Facility is repayable in part through quarterly installments that increase over time from $6.3 million per quarter in the first three quarters of 2019 to $9.4 million per quarter in the final year of the U.S. Credit Facility. We may, from time to time, request increases in the aggregate commitments under the U.S. Credit Facility of up to $200 million, subject to the lenders electing to increase their commitments or by means of the addition of new lenders, and subject to at least half of each increase in aggregate commitments being in the form of term loans, with the remaining amount of each increase being an increase in the amount of the revolving portion of the U.S. Credit Facility. The U.S. Credit Facility contains certain financial and non-financial covenants, including, but not limited to, a maximum consolidated leverage ratio, a minimum consolidated fixed charge coverage ratio, and restrictions on liens, indebtedness, investments, fundamental changes, dispositions, and restricted payments (including dividends and share repurchases). The obligations of the Company and the other borrowers under the U.S. Credit Facility are secured by substantially all of the assets of the Company, including controlling interests in its first-tier subsidiaries, and by specified assets of certain of its subsidiaries. In addition to our U.S. Credit Facility, our 51% owned subsidiary, ERIS Technology Corporation ("ERIS"), borrowed $23.5 million on a long-term basis from local Taiwan banks in order to make an investment. The first loan of $4.3 million matures in 2033, while the second loan of $19.2 million matures in 2024. See Note 8 of "Notes to Consolidated Financial Statements" of this Annual Report for additional information.

Capital expenditures and investments

In 2019 and 2018, our capital expenditures were approximately $96.2 million and $79.7 million, respectively, which includes approximately $9.3 million and $10.2 million of capital expenditures related to the investment agreement with the Management Committee of the Chengdu Hi-Tech Industrial Development Zone (the "CDHT") for 2019 and 2018, respectively. Our capital expenditures for these periods were primarily related to manufacturing expansion in our facilities in China and, to a lesser extent, our office buildings. Capital expenditures in 2019 were approximately 7.7% of our net sales.

In 2010, we announced an investment agreement with the Management Committee of the CDHT. Under this agreement, we formed a joint venture with a Chinese partner, Chengdu Ya Guang Electronic Company Limited ("Ya Guang"), to establish a semiconductor assembly and test facility in Chengdu, China. In December 2016, we increased our investment and currently own approximately 98% of the joint venture entity. The CDHT granted the joint venture a 50 year land lease, provides corporate and employee tax incentives, tax refunds, subsidies and other financial support. We believe that this will be a long-term, multi-year project that will provide us additional capacity as needed. As of December 31, 2019, we have invested $178.3 million in this joint venture, primarily for infrastructure, buildings and equipment related capital expenditures.

Restricted cash is pledged as collateral when we enter into agreements with banks for certain banking facilities. As of December 31, 2019, restricted cash of $1.1 million was pledged as collateral for issuance of bank acceptance notes and letters of credit.

Our foreign operations expose us to unique intellectual property technology risks compared to a company with fewer or no international operations. For example, we are exposed to potential cyber security breaches that may target our employees or infrastructure outside the United States. These risks may result in material and adverse impacts on our financial condition and results of operations. See "Risk Factors – Risks Related to Our International Operations" in Part I, Item 1A of this Annual Report for a more detailed summary of the intellectual property technology risks associated with our international business operations.

Discussion of Cash Flows

Cash and cash equivalents, including restricted cash, increased approximately $17.7 million to $259.5 million in 2019 from $241.8 million in 2018. The table below sets forth summary information from our statements of cash flows:

	Twelve Months Ended December 31,		
	2019	2018	Change
Net cash provided by operating activities	$ 229,772	$ 185,566	$ 44,206
Net cash used by investing activities	(100,426)	(88,944)	(11,482)
Net cash used by financing activities	(112,432)	(51,911)	(60,521)
Effect of exchange rates on cash and cash equivalents, including restricted cash	760	(8,078)	8,838
Net increase (decrease) in cash and cash equivalents, including restricted cash	$ 17,674	$ 36,633	$ (18,959)

Operating Activities

Net cash provided by operating activities for 2019 was approximately $229.8 million, due primarily to $154.1 million of net income, $109.6 million in depreciation and amortization of intangible assets, $20.5 million from non-cash share-based compensation, and a $9.9 million increase in deferred income taxes. These increases were partially offset by a gain of $24.4 million related to the disposal of property, plant and equipment and a net decrease in operating capital assets and liabilities of $40.3 million.

Investing Activities

Net cash used by investing activities for 2019 was approximately $100.4 million, due primarily to $98.5 million used for purchases of property, plant and equipment and $33.0 used for acquisitions. These uses of cash for investing was partially offset by proceeds from the sale of property, plant and equipment of $29.4 million.

Financing Activities

Net cash used in financing activities for 2019 was approximately $112.4 million, due primarily to the net repayment of long-term debt of $117.3 million, payment of taxes on net share settlement of $4.4 million related to vesting of Diodes stock awards and the payment of dividends to noncontrolling interest of $3.8 million,. These uses of cash were partially offset by the receipt of $11.9 million from the exercise of stock options.

Debt instruments

The U.S. Credit Facility contains certain financial and non-financial covenants, including, but not limited to, a maximum consolidated leverage ratio, a minimum consolidated fixed charge coverage ratio, and restrictions on liens, indebtedness, investments, fundamental changes, dispositions, and restricted payments (including dividends and share repurchases).

As of December 31, 2019, our Asia subsidiaries had unused and available credit lines of up to an aggregate of approximately $111.8 million, with several financial institutions. In some cases, our foreign credit lines are unsecured, uncommitted and may be repayable on demand, except for two Taiwanese credit facilities that are collateralized by assets. Our foreign credit lines bear interest at LIBOR or similar indices plus a specified margin. In addition to our credit lines, our 51% owned subsidiary, ERIS Technology Corporation (“ERIS”), borrowed $23.5 million on a long-term basis from local Taiwan banks in order to make an investment. The first loan of $4.3 million matures in 2033, while the second loan of $19.2 million matures in 2024. At December 31, 2019, $13.3 million was outstanding under these lines of credit. See “Liquidity and Capital Resources” above and Note 8 of “Notes to Consolidated Financial Statements” of this Annual Report for additional information.

Off-Balance Sheet Arrangements

We do not have any transactions, arrangements and other relationships with unconsolidated entities that will affect our liquidity or capital resources. We have no special purpose entities that provided off-balance sheet financing, liquidity or market or credit risk support, nor do we engage in leasing, hedging or research and development services, that could expose us to liability that is not reflected on the face of our financial statements.

Contractual Obligations

The following table represents our contractual obligations as of December 31, 2019 (in thousands):

	Total	Less than 1 year	1-3 years	4-5 years	More than 5 years
Debt	$ 98,641	$ 33,102	$ 48,523	$ 14,260	$ 2,756
Interest on long-term debt [1]	3,528	1,954	1,150	387	37
Operating leases	43,692	13,779	18,042	6,970	4,901
Finance leases	1,060	922	138	-	-
Defined benefit obligations	27,310	2,731	5,462	5,462	13,655
Purchase obligations	93,611	93,611	-	-	-
Total obligations	$ 267,842	$ 146,099	$ 73,315	$ 27,079	$ 21,349

(1) Interest on long-term debt assumes there are no changes in current interest rates and no changes in long-term debt from the balance outstanding as of December 31, 2019, other than required principal payments. The Revolver and Term Loan mature in October 2021.

Tax liabilities are not included in the above contractual obligations as we cannot make reasonable estimates of the amount and period in which those tax liabilities would be paid. See *"Accounting for income taxes"* below and Note 12 of "Notes to Consolidated Financial Statements" of this Annual Report for additional information. In addition to these purchase commitments, we have equity investment obligations for our Chengdu facilities of $25 million for 2020, and capital investment obligations of $25 million for 2020 and $16 million for 2021.

Critical Accounting Policies and Estimates

The preparation of financial statements in conformity with generally accepted principles in the United States of American ("U.S. GAAP") requires that management make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of net sales and expenses during the reporting period. On an ongoing basis, we evaluate our estimates, which are based upon historical experiences, market trends and financial forecasts and projections, and upon various assumptions that management believes to be reasonable under the circumstances at that certain point in time. Actual results may differ, significantly at times, from these estimates under different assumptions or conditions.

We believe the following critical accounting policies and estimates affect the significant estimates and judgments we use in the preparation of our consolidated financial statements, and may involve a higher degree of judgment and complexity than others.

Revenue recognition

We generate revenue primarily through the sale of semiconductor products either directly to a customer or to a distributor. We typically have contracts with our direct customers and distributors and in determining whether a contract exists we evaluate the terms of the agreement, the relationship with the direct customer or distributor and their ability to pay.

Under revenue recognition guidance, a performance obligation is a promise in a contract to transfer a distinct good or service to the customer, and is considered the unit of account. A contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. Generally speaking, our primary performance obligation is the delivery of a specific good through the purchase order submitted by our customer and revenue is recognized at the time of shipment or delivery, depending on the contract terms.

We record allowances/reserves for the following items: (i) ship and debit, which arise when we, from time to time based on market conditions, issue credit to certain distributors upon their shipments to their end customers; (ii) stock rotation, which are contractual obligations that permit certain distributors, up to four times a year, to return a portion of their inventory based on historical shipments to them in exchange for an equal and offsetting order; and (iii) price protection, which arise when market conditions cause average selling prices to decrease and we issue credit to certain distributors on their inventory. Ship and debit accruals comprise both claims in process and anticipated claims arising from the eventual sale of distribution inventory that is subject to claim activity. Ship and debit reserves are recorded as a reduction to net sales with a corresponding reduction to accounts receivable. Stock rotation reserves are recorded as a reduction to net sales with a corresponding reduction to cost of goods sold for the estimated cost of inventory that is expected to be returned. Price protection reserves are recorded as a reduction to net sales with a corresponding increase in accrued liabilities.

We also assess our customer's ability and intention to pay, which is based on a variety of factors including our customer's historical payment experience, their financial condition and the condition of the global economy and financial markets. Payment terms and conditions typically vary depending on negotiations with the customer.

Certain customers have limited rights of return or are entitled to price adjustments on products held in their inventory or upon sale to their end customers. We reduce net sales in the period of sale for estimates of product returns, distributor price adjustments and other allowances. Our reserve estimates are based upon historical data as well as projections of sales, distributor inventories, price adjustments, average selling prices and market conditions. Actual returns and adjustments could be significantly different from our estimates and provisions, resulting in an adjustment to net sales.

Inventories

Inventories are stated at the lower of cost or net realizable value. Cost is determined principally by the first-in, first-out method. On an ongoing basis, we evaluate our inventory for obsolescence and slow-moving items. This evaluation includes analysis of sales levels, sales projections, and purchases by item, as well as raw material usage related to our manufacturing facilities. If our review indicates a reduction in utility below carrying value, we reduce our inventory to a new cost basis. If future demand or market conditions are different than our current estimates, an inventory adjustment may be required, and would be reflected in cost of goods sold in the period the revision is made.

Accounting for income taxes

As part of the process of preparing our consolidated financial statements, we are required to estimate our income taxes in each of the tax jurisdictions in which we operate. This process involves using an asset and liability approach whereby deferred tax assets and liabilities are recorded for differences in the financial reporting bases and tax bases of our assets and liabilities. A valuation allowance is provided against deferred tax assets unless it is more likely than not that such deferred tax assets will be realized. This analysis requires considerable judgment and is subject to change to reflect future events and changes in the tax laws.

The benefit of a tax position is recognized only if it is more likely than not that the tax position would be sustained based on its technical merits in a tax examination, using the presumption the tax authority has full knowledge of all relevant facts regarding the position. The amount of benefit recognized is the largest amount of tax benefit that is greater than 50% likely of being realized on ultimate settlement with the tax authority. For tax positions not meeting the more likely than not test, no tax benefit is recorded.

Goodwill and other indefinite lived intangible assets

Goodwill and other indefinite lived assets are tested for impairment on an annual basis or when an event or changes in circumstances indicate that its carrying value may not be recoverable. Goodwill impairment is tested at the reporting unit level, which is defined as an operating segment or one level below the operating segment. Diodes has one operating segment. Goodwill is reviewed for impairment using either a qualitative assessment or a quantitative goodwill impairment test. If we choose to perform a qualitative assessment and determine the fair value more likely than not exceeds the carrying value, no further evaluation is necessary. When we perform the quantitative goodwill impairment test, we compare fair value to carrying value, which includes goodwill. If fair value of exceeds carrying value, the goodwill is not considered impaired. If the carrying value is higher than the fair value, the difference would be recognized as an impairment loss.

Recently Issued Accounting Pronouncements

See Note 1 of "Notes to Consolidated Financial Statements" of this Annual Report for additional information regarding the status of recently issued accounting pronouncements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Foreign Currency Risk

We face exposure to adverse movements in foreign currency exchange rates, primarily in Asia and Europe. Our foreign currency risk may change over time as the level of activity in foreign markets grows and could have a material adverse impact upon our financial results. Certain of our assets, including certain bank accounts and accounts receivable, and liabilities exist in non–U.S. dollar denominated currencies, which are sensitive to foreign currency exchange fluctuations. These currencies are principally the Chinese Yuan, the Taiwanese dollar, the Euro, and the British Pound Sterling and, to a lesser extent, the Japanese Yen and the Hong Kong dollar. We have entered into hedging arrangements designed to mitigate foreign currency fluctuations. See "Risk Factors – *We are subject to foreign currency risk as a result of our international operations."* in Part I, Item 1A of this Annual Report for additional information.

Foreign Currency Transaction Risk

We are subject to foreign currency risk arising from intercompany transactions that are expected to be settled in cash in the near term where the cash balances are held in denominations other than our subsidiaries' functional currency. If exchange rates weaken against the functional currency, we would incur a remeasurement gain in the value of the cash balances, and if the exchange rates strengthen against the functional currency, we would incur a remeasurement loss in the value of the cash balances, assuming the net monetary asset balances remained constant. Our ultimate realized gain or loss with respect to currency fluctuations will generally depend on the size and type of transaction, the size and currencies of the net monetary assets and the changes in the exchange rates associated with these currencies. Based on balances at December, 31, 2019, if the Chinese Yuan, the Taiwanese dollar, the Euro and the British Pound Sterling were to weaken (or strengthen) by 1.0% against the U.S. dollar, we would experience currency transaction gain (or loss) of approximately $1.0 million (partially offset by any foreign currency hedges). Net foreign exchange transaction gains (or losses) are included in other income and expense.

Foreign Currency Translation Risk

For our subsidiaries that maintain their books in a foreign currency, fluctuations in that foreign currency will impact the amount of total assets and liabilities that we report for our foreign subsidiaries upon the translation of these amounts into U.S. dollars. All elements of the subsidiaries' financial statements, except for stockholders' equity accounts, are translated using a currency exchange rate. Assets and liabilities denominated in foreign currencies are translated at the exchange rate on the balance sheet date. Income and expense accounts denominated in foreign currencies are translated at the weighted-average exchange rate during the period presented. Resulting translation adjustments are recorded as a separate component of accumulated other comprehensive income or loss within stockholders' equity in the consolidated balance sheets, which are accumulated in this account until sale or liquidation of the foreign entity investment, at which time they are reported as adjustments to the gain or loss on sale of investment.

Foreign Currency Denominated Defined Benefit Plans

We have a contributory defined benefit plan that covers certain employees in the U.K., which is closed to new entrants and frozen with respect to future benefit accruals. The retirement benefit is based on the final average compensation and service of each eligible employee. December 31 is our annual measurement date, and on the measurement date, defined benefit plan assets are determined based on fair value. Defined benefit plan assets consist primarily of high quality corporate bonds and stocks that are denominated in the currency in which the benefits will be paid and that have terms to maturity approximating to the terms of the related pension liability. The net pension and supplemental retirement benefit obligations and the related periodic costs are based on, among other things, assumptions of the discount rate, estimated return on plan assets and mortality rates. These obligations and related periodic costs are measured using actuarial techniques and assumptions. The projected unit credit method is the actuarial cost method used to compute the pension liabilities and related expenses.

As of December 31, 2019, the plan was underfunded and a liability of approximately $26.1 million was reflected in our consolidated financial statements as a noncurrent liability. The amount recognized in accumulated other comprehensive income was a net loss of $45.9 million. If the British Pound Sterling were to (weaken) or strengthen by 1.0% against the U.S. dollar, we would experience currency translation liability (decrease) or increase of less than $0.5 million. The weighted-average discount rate assumption used to determine benefit obligations as of December 31, 2019, was 2.0%. A 0.2% increase/(decrease) in the discount rate used to calculate the net period benefit cost for the year would reduce/increase annual benefit cost by less than $0.5 million. A 0.2% increase/(decrease) in the discount rate used to calculate the year-end projected benefit obligation would increase/(decrease) the year–end projected benefit obligation by approximately $5.6 million. The expected return on plan assets is determined based on historical and expected future returns of the various assets classes and as such, each 1.0% increase/(decrease) in the expected rate of return assumption would increase/(decrease) the net period benefit cost by approximately $1.1 million. The asset value of the defined benefit plan has been volatile in recent years due primarily to wide fluctuations in the U.K. equity markets and bond markets. See "Risk Factors – *Changes in actuarial assumptions for our defined benefit plan could increase the volatility of the plan's asset value, require us to increase cash contributions to the plan and have a negative impact on our cash flows, operating results and financial condition*" in Part I, Item 1A of this Annual Report for additional information.

Interest Rate Risk

We have credit facilities with financial institutions in the U.S., Asia and Europe as well as other debt instruments with interest rates equal to LIBOR or similar indices plus a negotiated margin. A rise in interest rates could have an adverse impact upon our cost of working capital and our interest expense. Through the use of financial instruments, we have hedges in place designed to offset the interest rate risk for $200.0 million of floating rate debt. As a matter of policy, we do not enter into derivative transactions for speculative purposes. As of December 31, 2019, our outstanding principal debt included $75.2 million outstanding under our revolving senior credit facility and term loan, $13.3 million outstanding under foreign long term liabilities and $1.4 million used for import and export guarantees and bank acceptance notes. Based on our debt balances at December, 31, 2019, an increase or decrease in interest rates by 1.0% for the year on our credit facilities would increase or decrease our annual interest rate expense by less than

$1.2 million, net of the amounts realized from our interest rate swaps. See "Risk Factors," – "*We are subject to interest rate risk that could have an adverse effect on our cost of working capital and interest expenses, which could adversely affect our business, operating results and financial condition"* in Part I, Item 1A of this Annual Report for additional information.

Political Risk

We have a significant portion of our assets in mainland China, Taiwan and the U.K. The possibility of political conflict between any of these countries or with the U.S. could have a material adverse impact upon our ability to transact business through these important business channels and to generate profits. See "Risk Factors" – *Risks Related to our International Operations"* in Part I, Item 1A of this Annual Report for additional information.

Inflation Risk

Inflation did not have a material effect on net sales or net income in fiscal year 2019. A significant increase in inflation could affect future performance.

Credit Risk

The success of our business depends, among other factors, on the strength of the global economy and the stability of the financial markets, which in turn affect our customers' demand for our products, the ability of our customers to meet their payment obligations, the likelihood of customers canceling or deferring existing orders and the strength of consumer demand for items containing our products in the end-markets we serve. We provide credit to customers in the ordinary course of business and perform ongoing credit evaluations, while at times providing extended terms. We believe that our exposure to concentrations of credit risk with respect to trade receivables is largely mitigated by dispersion of our customers over various geographic areas, operating primarily in electronics manufacturing and distribution. We believe our allowance for doubtful accounts is sufficient to cover customer credit risks.

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.

Item 9. Changes In and Disagreements With Accountants on Accounting and Financial Disclosure.

Not Applicable.

Item 9A. Controls and Procedures.

Disclosure Controls and Procedures

Our Chief Executive Officer, Keh-Shew Lu, and Chief Financial Officer, Brett R. Whitmire, with the participation of our management, carried out an evaluation as of December 31, 2019, of the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) and Rule 15d-15(e) of the Securities Exchange Act of 1934, as amended). Based upon that evaluation, our Chief Executive Officer and our Chief Financial Officer believe that, as of the end of the period covered by this report, our disclosure controls and procedures are effective at the reasonable assurance level to ensure that information required to be included in this report is:

- recorded, processed, summarized and reported within the time period specified in the Commission's rules and forms and
- accumulated and communicated to our management, including the Chief Executive Officer and the Chief Financial Officer, to allow timely decisions regarding disclosure.

Disclosure controls and procedures, no matter how well designed and implemented, can provide only reasonable assurance of achieving an entity's disclosure objectives. The likelihood of achieving such objectives is affected by limitations inherent in disclosure controls and procedures. These include the fact that human judgment in decision-making can be faulty and that breakdowns in internal control can occur because of human failures such as simple errors, mistakes or intentional circumvention of the established processes.

Management's Annual Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed by, or under the supervision of, our Chief Executive Officer and Chief Financial Officer and implemented by our Board of Directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. GAAP.

Our 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 our assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. GAAP, and that receipts and expenditures of ours are being 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 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.

Under the supervision and with the participation of management, including our Chief Executive Officer and the Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework and criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”). This evaluation included review of the documentation of controls, testing of operating effectiveness of controls and a conclusion on this evaluation. Based on this evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2019.

The effectiveness of our internal control over financial reporting as of December 31, 2019, has been audited by Moss Adams LLP, an independent registered public accounting firm, as stated in their report which appears in Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

There was no change in our internal control over financial reporting, known to the Chief Executive Officer or the Chief Financial Officer, that occurred during the last fiscal quarter covered by this report that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information concerning our directors, executive officers and corporate governance is incorporated herein by reference from the section entitled "Proposal One – Election of Directors" contained in our definitive proxy statement to be filed pursuant to Section 14(a) of the Securities Exchange Act of 1934 within 120 days after our fiscal year end of December 31, 2019, for our annual stockholders' meeting for 2020 (the "Proxy Statement").

We have adopted a code of ethics that applies to our Chief Executive Officer and senior financial officers. The code of ethics has been posted on our website under the Corporate Governance portion of the Investor Relations section at www.diodes.com. We intend to satisfy disclosure requirements regarding amendments to, or waivers from, any provisions of our code of ethics on our website.

Item 11. Executive Compensation.

The information concerning executive compensation is incorporated herein by reference from the sections entitled "Compensation Discussion and Analysis," "Executive Compensation," and "Compensation Committee Interlocks and Insider Participation" contained in the Proxy Statement.

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

The information concerning the security ownership of certain beneficial owners and management and related stockholder matters is incorporated herein by reference from the sections entitled "General Information – Security Ownership of Certain Beneficial Owners and Management," and "Executive Compensation – Equity Compensation Plan Information" contained in the Proxy Statement.

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

The information concerning certain relationships, related transactions and director independence is incorporated herein by reference from the sections entitled "Corporate Governance – Certain Relationships and Related Person Transactions" and "Corporate Governance – Director Independence" and "Proposal One – Election of Directors" contained in the Proxy Statement.

Item 14. Principal Accounting Fees and Services.

The information concerning our principal accountant's fees and services is incorporated herein by reference from the section entitled "Ratification of the Appointment of Independent Registered Public Accounting Firm" contained in the Proxy Statement.

PART IV

Item 15. **Exhibits, Financial Statement Schedules.**

(a) **Financial Statements and Schedules**

Our consolidated financial statements are as set forth under Item 8 of this report on Form 10-K.

(1) Financial statements:

(2) Schedules:

None

Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements and note thereto.

(b) **Exhibits**

The exhibits listed on the Index to Exhibits are filed as exhibits or incorporated by reference to this Annual Report.

(c) **Financial Statements of Unconsolidated Subsidiaries and Affiliates**

Not Applicable.

Item 16. Form 10-K Summary.

None

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of
Diodes Incorporated

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Diodes Incorporated and Subsidiaries (the "Company") as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, equity, and cash flows for each of the three years in the period ended December 31, 2019, and the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO").

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of the Company as of December 31, 2019 and 2018, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by COSO.

Change in Accounting Principle

As disclosed in Note 1 to the consolidated financial statements, the Company changed its method of accounting for leases in 2019.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, 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 Management's Annual Report on Internal Control over Financial Reporting included in Item 9A. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting 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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures to 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. Our audit of internal control over financial reporting 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 audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current year audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee of the Company's board of directors and that (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenue – Ship and Debit Reserve

As described in Note 1, the Company records reserves related to estimated customer incentives, such as "ship and debit", which arise when the Company, from time to time based on market conditions, issue credits to certain distributors upon their shipments to their end customers. The ship and debit reserve comprehends both claims in process and anticipated claims arising from the eventual sale of distribution inventory that is subject to claim activity. The Company performs a look-back analysis of revenues and credits issued to distributors. Using their look-back analysis, the Company adjusts their assumptions and estimated reserves each quarter. The resulting ship and debit reserve is recorded as a reduction to net sales with a corresponding reduction to accounts receivable, and approximated $40.0 million as of December 31, 2019.

We identified the ship and debit reserve as a critical audit matter. Estimating the reserve involves the application of models using assumptions including historical customer ship and debit credit rates and credit lag times on such revenues. These assumptions could be affected by current and future economic and market conditions.

The primary procedures we performed to address this critical audit matter included:

- Obtaining an understanding, evaluating the design and testing the operating effectiveness of internal controls over the measurement of the ship and debit reserve, including testing controls over management's review of the reserve calculation and the underlying assumptions used to develop the estimate.
- Testing select distributor balances.
- Vouching revenues and ship and debit credits to supporting documents.
- Evaluating the reasonableness of management's assumptions by comparing the significant assumptions used to historical customer trends and current industry and market trends, including testing the completeness and accuracy of the underlying data.
- Performing sensitivity analyses on the significant assumptions to evaluate the potential changes in the ship and debit reserve that would result from changes in the assumptions.

/s/ Moss Adams LLP

Los Angeles, California
February 11, 2020

We have served as the Company's auditor since 1993.

DIODES INCORPORATED AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(In thousands, except share and per share amounts)

	December 31, 2019	December 31, 2018
Assets		
Current assets:		
Cash and cash equivalents	$ 258,390	$ 241,053
Short-term investments	4,825	7,499
Accounts receivable, net of allowances of $4,866 and $4,102 at December 31, 2019 and 2018, respectively	260,322	228,405
Inventories	236,472	215,435
Prepaid expenses and other current assets	49,950	42,446
Total current assets	809,959	734,838
Property, plant and equipment, net	469,574	446,835
Deferred income tax	17,516	31,652
Goodwill	141,318	132,437
Intangible assets, net	119,523	137,935
Other long-term assets	81,494	42,674
Total assets	$ 1,639,384	$ 1,526,371
Liabilities		
Current liabilities:		
Line of credit	$ 13,342	$ 10,254
Accounts payable	122,148	117,808
Accrued liabilities	100,571	82,605
Income tax payable	16,156	15,744
Current portion of long-term debt	33,105	27,613
Total current liabilities	285,322	254,024
Long-term debt, net of current portion	64,401	186,143
Deferred tax liabilities	16,333	17,993
Other long-term liabilities	120,545	90,779
Total liabilities	486,601	548,939
Commitments and contingencies (See Note 17)		
Stockholders' equity		
Preferred stock - par value $1.00 per share; 1,000,000 shares authorized; no shares issued or outstanding	-	-
Common stock - par value $0.66 2/3 per share; 70,000,000 shares authorized; 51,206,969 and 50,221,035, issued and outstanding at December 31, 2019 and 2018, respectively	35,111	34,454
Additional paid-in capital	427,262	399,915
Retained earnings	789,958	636,708
Treasury stock, at cost, 1,457,206 shares held at December 31, 2019 and 2018	(37,768)	(37,768)
Accumulated other comprehensive loss	(108,139)	(101,846)
Total stockholders' equity	1,106,424	931,463
Noncontrolling interest	46,359	45,969
Total equity	1,152,783	977,432
Total liabilities and stockholders' equity	$ 1,639,384	$ 1,526,371

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

DIODES INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME
(In thousands, except per share data)

	Twelve Months Ended December 31,		
	2019	**2018**	**2017**
Net sales	$ 1,249,130	$ 1,213,989	$ 1,054,204
Cost of goods sold	783,323	778,713	697,428
Gross profit	465,807	435,276	356,776
Operating expenses			
Selling, general and administrative	181,343	176,197	168,590
Research and development	88,517	86,286	77,877
Amortization of acquisition-related intangible assets	18,041	18,351	18,798
Impairment of fixed assets	-	390	2,211
Restructuring	-	206	10,137
Gain on disposal of fixed assets	(24,429)	(636)	(245)
Other operating expense (income)	1,727	-	(1)
Total operating expenses	265,199	280,794	277,367
Income from operations	200,608	154,482	79,409
Other income (expense)			
Interest income	2,189	1,978	1,475
Interest expense	(7,893)	(9,901)	(13,448)
Foreign currency loss, net	(3,737)	(3,701)	(7,995)
Other income	7,079	7,104	3,150
Total other expense	(2,362)	(4,520)	(16,818)
Income before income taxes and noncontrolling interest	198,246	149,962	62,591
Income tax provision	44,131	44,556	62,325
Net income	154,115	105,406	266
Less: net income attributable to noncontrolling interest	(865)	(1,385)	(2,071)
Net income (loss) attributable to common stockholders	$ 153,250	$ 104,021	$ (1,805)
Earnings (loss) per share attributable to common stockholders			
Basic	$ 3.02	$ 2.09	$ (0.04)
Diluted	$ 2.96	$ 2.04	$ (0.04)
Number of shares used in computation			
Basic	50,787	49,841	48,824
Diluted	51,860	50,935	48,824

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

DIODES INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(In thousands)

	Twelve Months Ended December 31,		
	2019	2018	2017
Net income	$ 154,115	$ 105,406	$ 266
Unrealized (loss) gain on defined benefit plan, net of tax	(4,142)	3,440	(4,897)
Unrealized (loss) gain on interest rate swap, net of tax	(3,652)	737	1,018
Unrealized foreign currency gain (loss), net of tax	1,501	(22,543)	33,065
Comprehensive income	147,822	87,040	29,452
Less: Comprehensive income attributable to noncontrolling interest	(865)	(1,385)	(2,071)
Total comprehensive income attributable to common stockholders	$ 146,957	$ 85,655	$ 27,381

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

DIODES INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EQUITY
(In thousands)

(Amounts in thousands)	Common stock Shares	Common stock Amount	Treasury stock Shares	Treasury stock Amount	Additional paid-in capital	Retained earnings	Accumulated other comprehensive loss	Total Diodes Incorporated Stockholders' equity	Noncontrolling interest	Total equity
Balance, December 31, 2016	49,376	$ 32,919	(1,157)	$ (29,023)	$ 354,574	$ 530,215	$ (112,666)	$ 776,019	$ 44,448	$ 820,467
Total comprehensive income	-	-	-	-	-	(1,805)	29,186	27,381	2,071	29,452
Noncontrolling interests	-	-	-	-	(165)	-	-	(165)	641	476
Dividends to noncontrolling interest	-	-	-	-	-	-	-	-	(4,746)	(4,746)
Adoption of new accounting standard, ASU 2016-09	-	-	-	-	771	4,277	-	5,048	-	5,048
Common stock issued for share-based plans	1,211	808	-	-	12,798	-	-	13,606	-	13,606
Stock buyback	-	-	(300)	(8,745)	-	-	-	(8,745)	-	(8,745)
Share-based compensation	-	-	-	-	18,638	-	-	18,638	-	18,638
Tax related to net share settlement	-	-	-	-	(278)	-	-	(278)	-	(278)
Balance, December 31, 2017	50,587	$ 33,727	(1,457)	$ (37,768)	$ 386,338	$ 532,687	$ (83,480)	$ 831,504	$ 42,414	$ 873,918
Total comprehensive income	-	-	-	-	-	104,021	(18,366)	85,655	1,385	87,040
Contributions from noncontrolling interests	-	-	-	-	-	-	-	-	4,902	4,902
Dividends to noncontrolling interest	-	-	-	-	-	-	-	-	(2,732)	(2,732)
Common stock issued for share-based plans	1,091	727	-	-	4,134	-	-	4,861	-	4,861
Share-based compensation	-	-	-	-	20,736	-	-	20,736	-	20,736
Tax related to net share settlement	-	-	-	-	(11,293)	-	-	(11,293)	-	(11,293)
Balance, December 31, 2018	51,678	$ 34,454	(1,457)	$ (37,768)	$ 399,915	$ 636,708	$ (101,846)	$ 931,463	$ 45,969	$ 977,432
Total comprehensive income	-	-	-	-	-	153,250	(6,293)	146,957	865	147,822
Contributions from noncontrolling interests	-	-	-	-	-	-	-	-	3,343	3,343
Dividends to noncontrolling interest	-	-	-	-	-	-	-	-	(3,818)	(3,818)
Common stock issued for share-based plans	986	657	-	-	11,244	-	-	11,901	-	11,901
Share-based compensation	-	-	-	-	20,535	-	-	20,535	-	20,535
Tax related to net share settlement	-	-	-	-	(4,432)	-	-	(4,432)	-	(4,432)
Balance, December 31, 2019	52,664	$ 35,111	(1,457)	$ (37,768)	$ 427,262	$ 789,958	$ (108,139)	$ 1,106,424	$ 46,359	$ 1,152,783

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

DIODES INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Twelve Months Ended December 31,		
	2019	2018	2017
Operating Activities			
Net income	$ 154,115	$ 105,406	$ 266
Adjustments to reconcile net income to net cash provided by operating activities, net of effects of acquisitions:			
Depreciation	91,543	86,291	76,883
Amortization of intangibles	18,041	18,353	18,798
Amortization of debt issuance costs	521	522	514
Share-based compensation	20,535	20,736	18,609
Gain on disposal of property, plant and equipment	(24,429)	(636)	1,969
Deferred income taxes	9,904	3,674	25,326
Other	(187)	(2,335)	(1,814)
Changes in operating assets:			
Accounts receivable	(30,775)	(29,478)	22,261
Inventories	(11,325)	(2,154)	(17,199)
Prepaid expenses and other current assets	(6,630)	(11,119)	1,494
Changes in operating liabilities:			
Accounts payable	3,513	9,977	17,313
Accrued liabilities	7,369	(13,445)	13,079
Other liabilities	(2,694)	345	4,495
Income taxes payable (refundable)	271	(571)	(871)
Net cash and cash equivalents provided by operating activities	229,772	185,566	181,123
Investing Activities			
Acquisitions, net of cash acquired	(33,028)	(41)	-
Purchases of short-term investments	(19,271)	(15,901)	(12,205)
Sales of short-term investments	21,847	12,576	38,600
Purchases of property, plant and equipment	(98,505)	(87,507)	(111,161)
Proceeds from sales of property, plant and equipment	29,366	429	1,219
Receipt of subsidies and grants	-	-	6,968
Other	(835)	1,500	(2,333)
Net cash and cash equivalents used in investing activities	(100,426)	(88,944)	(78,912)
Financing Activities			
Advances on lines of credit and short-term debt	9,954	9,151	3,375
Repayments on lines of credit and short-term debt	(7,362)	(2,797)	(2,391)
Taxes related to net share settlement	(4,432)	(11,294)	(278)
Net proceeds from the issuance of common stock	11,901	4,862	13,606
Proceeds from long-term debt	405,540	465,656	44,500
Debt issuance costs	(223)	-	(111)
Repayments of long-term debt	(522,860)	(522,473)	(204,374)
Repayments of finance lease obligations	(1,082)	1,198	(587)
Purchase of treasury stock	-	-	(8,745)
Capital contribution from noncontrolling interest	-	6,255	-
Dividend distribution to noncontrolling interest	(3,818)	(2,694)	(5,754)
Other	(50)	225	2,575
Net cash and cash equivalents used in financing activities	(112,432)	(51,911)	(158,184)
Effect of exchange rate changes on cash and cash equivalents, including restricted cash	760	(8,078)	11,461
Increase (decrease) in cash and cash equivalents, including restricted cash	17,674	36,633	(44,512)
Cash and cash equivalents, beginning of year, including restricted cash	241,833	205,200	249,712
Cash and cash equivalents, end of year, including restricted cash	$ 259,507	$ 241,833	$ 205,200

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

DIODES INCORPORATED AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS (Continued)
(In thousands)

	Twelve Months Ended December 31,		
	2019	**2018**	**2017**
Supplemental Cash Flow Information			
Cash paid during the year for:			
Interest	$ 7,235	$ 9,962	$ 13,547
Income taxes	$ 37,158	$ 33,265	$ 30,447
Non-cash activities:			
(Increase) decrease property, plant and equipment purchased on accounts payable	$ 2,260	$ 7,766	$ (14,081)
Decrease (increase) in dividend accrued for noncontrolling interest	$ -	$ -	$ 1,008

The following table provides a reconciliation between cash, cash equivalents and restricted cash reported within the consolidated balance sheets to the total of the same such amounts shown above:

	Twelve Months Ended December 31,		
	2019	**2018**	**2017**
Current Assets:			
Cash and cash equivalents	$ 258,390	$ 241,053	$ 203,820
Restricted cash (included in other current assets)	1,117	780	1,380
Total cash, cash equivalents and restricted cash	$ 259,507	$ 241,833	$ 205,200

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

Note 1 – Summary of Operations and Significant Accounting Policies

Nature of operations

Diodes Incorporated, together with its subsidiaries (collectively, the "Company," "we" or "our") (Nasdaq: DIOD), is a leading global manufacturer and supplier of high-quality, application-specific standard products within the broad discrete, logic, analog and mixed-signal semiconductor markets. We serve the consumer electronics, computing, communications, industrial, and automotive markets. Our products include diodes, rectifiers, transistors, MOSFETs, protection devices, function-specific arrays, single gate logic, amplifiers and comparators, Hall-effect and temperature sensors, power management devices, including LED drivers, AC-DC converters and controllers, DC-DC switching and linear voltage regulators, and voltage references along with special function devices, such as USB power switches, load switches, voltage supervisors, and motor controllers. We also have timing, connectivity, switching, and signal integrity solutions for high-speed signals. Our corporate headquarters and Americas' sales offices are located in Plano, Texas and Milpitas, California. Design, marketing, and engineering centers are located in Plano; Milpitas; Taipei, Taoyuan City and Zhubei City, Taiwan; Oldham, England; and Neuhaus, Germany. Our wafer fabrication facilities are located in Oldham and Shanghai, China and Greenock, Scotland. We have assembly and test facilities located in Shanghai, Jinan and Chengdu, China, as well as in Hong Kong, Neuhaus and Taipei. Additional engineering, research and development, sales, warehouse, and logistics offices are located in Taipei; Hong Kong; Oldham; Shanghai; Shenzhen and Yangzhou, China; Seongnam-si, South Korea; Munich, Germany; and Tokyo, Japan, with support offices throughout the world.

Significant Accounting Policies

Principles of consolidation – The consolidated financial statements include the accounts of Diodes Incorporated, its wholly-owned subsidiaries and its controlled majority-owned subsidiaries. We account for equity investments in companies over which we have the ability to exercise significant influence, but do not hold a controlling interest, under the equity method, and we record our proportionate share of income or losses in Interest and other, net in the consolidated statements of income. All significant intercompany balances and transactions have been eliminated.

Use of estimates – The preparation of financial statements in conformity with generally accepted accounting principles in the United States of America ("GAAP") requires that management make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. The level of uncertainty in estimates and assumptions increases with the length of time until the underlying transactions are completed. Actual results may differ from these estimates in amounts that may be material to the consolidated financial statements and accompanying notes.

Revenue recognition – Effective January 1, 2018, we adopted the comprehensive new revenue recognition standard ASC 606. The details of the significant changes to our accounting policies resulting from the adoption of the new standard are set out below. We adopted the standard using a modified retrospective method. There was no change in our revenue reported for the twelve months ended December 30, 2017. The adoption of this standard did not have a material impact on our condensed consolidated financial position, reported revenue, results of operations or cash flows as of and for the twelve months ended December 31, 2018.

ASC 606 defines a performance obligation is a promise in a contract to transfer a distinct good or service to the customer, and under ASC 606 is the unit of account. A contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. Generally speaking, our performance obligations represent a promise to transfer various semiconductor products, and have the same pattern of revenue recognition. Our performance obligations are satisfied at either a point in time, or over time as work progresses. The vast majority of our revenue from products and services is accounted for at a point in time. Substantially all of our revenue in direct and Distributor sales is recognized at a point in time. Further, the payment terms on our sales are based on negotiations with our customers.

Our customers can order different types of semiconductors in a single contract (purchase order), and each line on a purchase order represents a separate performance obligation. Depending on the terms of an arrangement, we may also be responsible for shipping and handling activities. In accordance with ASC 606-10-25-18B, we have elected to account for shipping and handling as activities to fulfill our promise to transfer the good(s). As such, shipping and handling activities do not represent a separate performance obligation, and are accrued as a fulfillment cost. Further, although we offer warranties on our products, our warranties are considered to be assurance-type in nature and do not cover anything beyond ensuring that the product is functioning as intended. Based on the guidance in ASC 606, assurance-type warranties do not represent separate performance obligations; therefore, the primary performance obligation in the majority of our contracts is the delivery of a specific good through the purchase order submitted by our customer.

We record allowances/reserves for a number of items. The following items are the largest dollar items for which we record allowances/reserves, with ship and debit making up the vast majority: (i) ship and debit, which arise when we issue credit to certain distributors upon their shipments to their end customers; (ii) stock rotation, which are contractual obligations that permit certain distributors, up to four times a year, to return a portion of their inventory based on historical shipments to them in exchange for an equal and offsetting order; and (iii) price protection, which arise when market conditions cause average selling prices to decrease and we issue credit to certain distributors on their inventory. Ship and debit reserves are recorded as a reduction to net sales with a corresponding reduction to accounts receivable. Stock rotation reserves and price protection reserves are recorded as a reduction to net sales with a corresponding increase in accrued liabilities.

We also assess our customer's ability and intention to pay, which is based on a variety of factors including our customer's historical payment experience, their financial condition and the condition of the global economy and financial markets. Payment terms and conditions typically vary depending on negotiations with the customer.

Net sales are reduced in the period of sale for estimates of product returns and other allowances including distributor adjustments, which were approximately $163.9 million, $158.8 million and $158.1 million in 2019, 2018 and 2017, respectively.

Product warranty – We generally warrant our products for a period of one year from the date of sale. Historically, warranty expense has not been material.

Cash, cash equivalents, and short-term investments – We consider all highly liquid investments with maturity of three months or less at the date of purchase to be cash equivalents. We currently maintain substantially all of our day-to-day operating cash balances with major financial institutions. We hold short-term investments consisting of time deposits, which are highly liquid with maturity dates greater than three months at the date of purchase. Generally, we can access these investments in a relatively short amount of time but in doing so we generally forfeit a portion of interest income. See Note 3 below for additional information regarding fair value of financial instruments.

Allowance for doubtful accounts – We evaluate the collectability of our accounts receivable based upon a combination of factors, including the current business environment and historical experience. If we are aware of a customer's inability to meet its financial obligations, we record an allowance to reduce the receivable to the amount we reasonably believe will be collected from the customer. For all other customers, we record an allowance based upon the amount of time the receivables are past due. If actual accounts receivable collections differ from these estimates, an adjustment to the allowance may be necessary with a resulting effect on operating expense. Accounts receivable are presented net of valuation allowance, which were approximately $4.9 million at December 31, 2019 and $4.1 million at December 31, 2018.

Inventories – Inventories are stated at the lower of cost or net realizable value. Cost is determined principally by the first-in, first-out method. Cost includes materials, labor, and manufacturing overhead related to the purchase and production of inventories. Any write-down of inventory to the lower of cost or net realizable value at the close of a fiscal period creates a new cost basis that subsequently would not be marked up based on changes in underlying facts and circumstances. On an on-going basis, we evaluate inventory for obsolescence and slow-moving items. This evaluation includes analysis of sales levels, sales projections, and purchases by item, as well as raw material usage related to our manufacturing facilities. If our review indicates a reduction in utility below carrying value, we reduce inventory to a new cost basis. If future demand or market conditions are different than our current estimates, an inventory adjustment to write down inventory may be required, and would be reflected in cost of goods sold in the period the revision is made.

Property, plant and equipment – Purchased property, plant and equipment is recorded at historical cost, and property, plant and equipment acquired in a business combination is recorded at fair value on the date of acquisition. Property, plant and equipment is depreciated using straight-line methods over the estimated useful lives, which range from 20 to 55 years for buildings and 3 to 10 years for machinery and equipment. The estimated lives of leasehold improvements range from 3 to 5 years, and are amortized over the shorter of the remaining lease term or their estimated useful lives.

Goodwill and other indefinite lived intangible assets – Goodwill and indefinite lived assets are tested for impairment on an annual basis or when an event or changes in circumstances indicate that its carrying value may not be recoverable. Goodwill impairment is tested at the reporting unit level, which is defined as an operating segment or one level below the operating segment. Diodes has one operating segment. No goodwill impairment occurred in 2019, 2018, or 2017. Goodwill is reviewed for impairment using either a qualitative assessment or a quantitative goodwill impairment test. If we choose to perform a qualitative assessment and determine the fair value more likely than not exceeds the carrying value, no further evaluation is necessary. When we perform the quantitative goodwill impairment test, we compare fair value to carrying value, which includes goodwill. If fair value exceeds carrying value, the goodwill is not considered impaired. If the carrying value is higher than the fair value, the difference would be recognized as an impairment loss.

Impairment of long-lived assets – Our long-lived assets are reviewed whenever events or changes in circumstances indicate that the carrying value may not be recoverable. We consider assets to be impaired if the carrying value exceeds the undiscounted projected cash flows from operations. If impairment exists, the assets are written down to fair value or to the projected discounted cash flows from related operations. As of December 31, 2019, we expect the remaining carrying value of assets to be recoverable. During 2017, we recognized an impairment of long-lived assets related to the KFAB fixed assets. See Note 19 below for additional information related to the KFAB shut down.

Business combinations – The Company recognizes all (and only) the assets acquired and liabilities assumed in the transaction and establishes the acquisition-date fair value as the measurement objective for all assets acquired and liabilities assumed in a business combination. Certain provisions prescribe, among other things, the determination of acquisition-date fair value of consideration paid in a business combination (including contingent consideration) and the exclusion of transaction and acquisition-related restructuring costs from acquisition accounting. During the normal course of business the Company makes acquisitions. In the event that an individual acquisition (or an aggregate of acquisitions) is material, appropriate disclosure of such acquisition activity is provided. See Note 20 for additional information regarding business combinations.

Income taxes – Income taxes are accounted for using an asset and liability approach whereby deferred tax assets and liabilities are recorded for differences in the financial reporting bases and tax bases of our assets and liabilities. If it is more likely than not that some portion of deferred tax assets will not be realized, a valuation allowance is recorded.

GAAP prescribes a comprehensive model for how companies should recognize, measure, present, and disclose in their financial statements uncertain tax positions taken or expected to be taken on a tax return. Tax positions shall initially be recognized in the financial statements when it is more likely than not the position will be sustained upon examination by the tax authorities. Such tax positions shall initially and subsequently be measured as the largest amount of tax benefit that is greater than 50% likely of being realized upon ultimate settlement with the tax authority assuming full knowledge of the position and all relevant facts. All deferred income taxes are classified as noncurrent assets or noncurrent liabilities on the consolidated balance sheet as of December 31, 2019 and 2018, respectively.

Research and development costs – Internally-developed research and development costs are expensed as incurred. Acquired in-process research and development ("IPR&D") is capitalized as an indefinite-lived intangible asset and evaluated periodically for impairment. When the project is completed, an expected life is determined and the IPR&D is amortized as an expense over the expected life.

Shipping and handling costs – Shipping and handling costs for products shipped to customers, which are included in selling, general and administrative expenses, were approximately $13.9 million, $14.8 million and $15.2 million for the twelve months ended December 31, 2019, 2018 and 2017, respectively.

Concentration of credit risk – Financial instruments, which potentially subject us to concentrations of credit risk, include trade accounts receivable. Credit risk is limited by the dispersion of our customers over various geographic areas, operating primarily in electronics manufacturing and distribution. We perform a credit evaluation of new customers and monitor the accounts receivable aging of our existing customers. Generally we require no collateral from our customers and historically credit losses have been insignificant.

We currently maintain substantially all of our day-to-day cash balances and short-term investments with major financial institutions. Cash balances are usually in excess of Federal and/or foreign deposit insurance limits.

Valuation of financial instruments – The carrying value of our financial instruments, including cash and cash equivalents, short-term investments, accounts receivable, accounts payable, credit line, and long-term debt approximate fair value due to their current market conditions, maturity dates and other factors.

Share-based compensation – We use the Black-Scholes-Merton model to determine the fair value of stock options on the date of grant and recognize compensation expense for stock options on a straight-line basis. Restricted stock grants are measured based on the fair market value of the underlying stock on the date of grant and compensation expense is recognized on a straight-line basis over the requisite four-year service period. Performance stock units are measured based on the fair market value of the underlying stock on the date of grant and compensation expense is recognized over the three-year performance period, with adjustments made to the expense to recognize the probable payout percentage.

The amount of compensation expense recognized using the Black-Scholes-Merton model requires us to exercise judgment and make assumptions relating to the factors that determine the fair value of our stock option grants. The fair value calculated by this model is a function of several factors, including the grant price, the expected future volatility, the expected term of the option and the risk-free interest rate of the option. The expected term and expected future volatility of the options require judgment. In addition, we estimate the expected forfeiture rate and only recognize expense for those stock options expected to vest. We estimate the forfeiture rate based on historical experience, and to the extent our actual forfeiture rate is different from our estimate, share-based compensation expense is adjusted accordingly.

Treasury stock – Under a program authorized by our board of directors we have purchased shares of our common stock. These shares are recorded as treasury stock, at cost, as a reduction to stockholder' equity.

Functional currencies and foreign currency translation – We translate the assets and liabilities of our non-U.S. dollar functional currency subsidiaries into U.S. dollars using exchange rates on the balance sheet date. Net sales and expense for these subsidiaries are translated at the weighted-average exchange rate during the period presented. Resulting translation adjustments are recorded as a separate component of accumulated other comprehensive income or loss within stockholders' equity in the consolidated balance sheets. Included in other income are foreign exchange losses of approximately $3.7 million for both twelve month periods ended December, 31, 2019 and 2018 and approximately $ 8.0 million for the twelve months ended December 31, 2017.

Defined benefit plan – We maintain plans covering certain of our employees in the U.K. The overfunded or underfunded status of pension and postretirement benefit plans are recognized on the balance sheet. Actuarial gains and losses, and prior service costs or credits, are recognized in other comprehensive income (loss), net of tax effects, until they are amortized as a component of net periodic benefit cost. For financial reporting purposes, the net pension and supplemental retirement benefit obligations and the related periodic pension costs are calculated based upon, among other things, assumptions of the discount rate for plan obligations, estimated return on pension plan assets and mortality rates. These obligations and related periodic costs are measured using actuarial techniques and assumptions. The projected unit credit method is the actuarial cost method used to compute the pension liabilities and related expenses. The expected long-term return on plan assets was determined based on historical and expected future returns of the various asset classes. The plan's investment policy includes a mandate to diversify assets and invest in a variety of asset classes to achieve its expected long-term return and is currently invested in a variety of funds representing most standard equity and debt security classes. Trustees of the plan may make changes at any time.

Noncontrolling interest - Noncontrolling interest primarily relates to the minority investors' share of the earnings of certain China and Taiwan subsidiaries. Noncontrolling interests are a separate component of equity and not a liability. Increases or decreases in noncontrolling interest, due to changes in our ownership interest of the subsidiaries that leave control intact, are recorded as equity transactions. The noncontrolling interest in our subsidiaries and their equity balances are reported separately in the consolidated financial statements, and activities of these subsidiaries are included therein.

Contingencies – From time to time, we may be involved in a variety of legal matters that arise in the normal course of business. Based on information available, we evaluate the likelihood of potential outcomes. We record and disclose the appropriate liability when the amount is deemed probable and reasonably estimable. In addition, we do not accrue for estimated legal fees and other directly related costs as they are expensed as incurred.

Comprehensive income (loss) – GAAP generally requires that recognized revenue, expenses, gains and losses be included in net income. Although certain changes in assets and liabilities are reported as separate components of the equity section of the consolidated balance sheet, such items, along with net income, are components of comprehensive income or loss. The components of accumulated other comprehensive income or loss include foreign currency translation adjustments and unrealized gain or loss on defined benefit plan. Accumulated other comprehensive loss was approximately $108.1 million, $101.8 million and $83.5 million at December 31, 2019, 2018 and 2017, respectively.

As of December 31, the accumulated balance for each component of comprehensive income is as follows:

	2019	2018
Unrealized foreign currency losses	$ (63,053)	$ (64,553)
Unrealized gain on interest rate swap, net of tax	$ (391)	$ 3,261
Unrealized loss on defined benefit plan	$ (44,695)	$ (40,554)

Reclassifications – Certain immaterial amounts from prior periods have been reclassified to conform to the current years' presentation.

Recently Issued Accounting Pronouncements

The Financial Accounting Standards Board ("FASB") issued the following Accounting Standards Updates ("ASU") which could have potential impact to the Company's financial statements:

Recently Adopted Standards

ASU No. 2016-02, Leases (Topic 842) (“ASU 2016-02”) – In February 2016, the FASB issued ASU 2016-02, which amends the accounting treatment for leases and requires, among other things, lessees to recognize a right-of-use (“ROU”) asset and lease liability for most lease arrangements. The amendments were effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. The Company adopted ASU 2016-02 on January 1, 2019, using the modified retrospective transition approach, under which financial results reported in periods prior to 2018 are unchanged. We elected the following allowed practical expedients as permitted under the transition guidance within the new standard:

- Not record leases with an initial term of 12 months or less on the balance sheet;
- Not separate non-lease components of leases from the lease components; and
- Not reassess (1) the definition of a lease, (2) lease classification, and (3) initial direct costs for existing leases during transition.

Upon adoption of ASU 2016-02, the Company recorded ROU assets of $68.3 million, including land-use rights of $17.1 million previously recorded in other assets and $2.5 million previously recorded in property, plant and equipment and ROU liabilities of $50.4 million. For additional information related to the Company’s leases, see Note 9.

The Company determines if an arrangement is a lease at inception. ROU assets are included in Other assets in the Company’s condensed consolidated balance sheets. Current lease liabilities are included in Accrued liabilities and other and long-term lease liabilities are included in Other long-term liabilities, in our condensed consolidated balance sheets.

ROU assets represent the Company’s right to use an underlying asset for the lease term, and lease liabilities represent its obligation to make lease payments arising from the lease. ROU assets and lease liabilities are recognized at the lease commencement date based on the estimated present value of lease payments over the lease term. To determine the present value of the lease payments, we estimate our incremental borrowing rate based on information available at the lease commencement date.

The Company’s lease term includes options to extend the lease when it is reasonably certain that it will exercise that option. Leases with a term of 12 months or less are not recorded on the balance sheet. Our leases typically do not contain any residual value guarantees. For real estate, we account for the lease and non-lease components as a single lease component.

ASU No. 2018-07, Compensation—Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting ("ASU 2018-07") - In June 2018, the FASB issued ASU 2018-07, which simplifies several aspects of the accounting for nonemployee share-based payment transactions resulting from expanding the scope of Topic 718, Compensation—Stock Compensation, to include share-based payment transactions for acquiring goods and services from nonemployees. ASU 2018-07 was effective for the Company on January 1, 2019. The adoption of this standard did not have a material effect on our condensed consolidated financial statements or disclosures.

ASU No. 2017-12 - Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities (“ASU 2017-12”) -In August 2017, the FASB issued ASU No. 2017-12 to better align hedge accounting with risk management strategies, and as a result, more hedging strategies will be eligible for hedge accounting. Public business entities will have until the end of the first quarter in which a hedge is designated to perform an initial assessment of a hedge’s effectiveness. After initial qualification, the new guidance permits a qualitative effectiveness assessment for certain hedges instead of a quantitative test if the company can reasonably support an expectation of high effectiveness throughout the term of the hedge. An initial quantitative test to establish that the hedge relationship is highly effective is still required. The amendments are effective for fiscal years beginning after December 15, 2018, and the Company adopted the new standard January 1, 2019. The new standard had no impact on the Company’s financial statements.

On January 1, 2019, the Company adopted ASU No. 2018-16, “Derivatives and Hedging (Topic 815): Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes”. The amendments in this ASU permit the use of the OIS rate based on SOFR as a U.S. benchmark interest rate for hedge accounting purposes under ASC 815, in addition to the currently permissible benchmark interest rates. This ASU provides the Company the ability to utilize the OIS rate based on SOFR as the benchmark interest rate on certain hedges of interest rate risk. The new standard had no impact on the Company’s financial statements.

Standards Effective in Future Years

The FASB has issued the following relevant standards, effective in future years, which are not expected to have a material impact on our consolidated condensed financial statements:

Standard No.	Standard Name	Standard Effective Date
2018-13	Fair Value Measurement (Topic 820): Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement	January 1, 2020
2018-14	Compensation - Retirement Benefits - Defined Benefit Plans - General (Subtopic 715-20): Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans	January 1, 2020

In April 2019, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2019-04, Codification Improvements to Topic 326, Financial Instruments-Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments, that clarifies and improves areas of guidance related to the recently issued standards on credit losses (ASU 2016-13), hedging (ASU 2017-12), and recognition and measurement of financial instruments (ASU 2016-01). The amendments generally have the same effective dates as their related standards. If already adopted, the amendments of ASU 2016-01 and ASU 2016-13 are effective for fiscal years beginning after December 15, 2019 and the amendments of ASU 2017-12 are effective as of the beginning of the Company's next annual reporting period; early adoption is permitted. The Company is evaluating the impact of the adoption of these standards.

Note 2 – Earnings per Share

Basic earnings per share is calculated by dividing net earnings attributable to common stockholders by the weighted-average number of shares of common stock outstanding during the period. Diluted earnings per share is calculated similarly but includes potential dilution from the exercise of stock options and stock awards, except when the effect would be anti-dilutive. Earnings per share are computed using the "treasury stock method."

	Twelve Months Ended December 31,		
	2019	2018	2017
Earnings (numerator)			
Net income (loss) attributable to common stockholders	$ 153,250	$ 104,021	$ (1,805)
Shares (denominator)			
Weighted average common shares outstanding (basic)	50,787	49,841	48,824
Dilutive effect of stock options and stock awards outstanding	1,073	1,094	-
Adjusted weighted average common shares outstanding (diluted)	51,860	50,935	48,824
Earnings (loss) per share attributable to common stockholders			
Basic	$ 3.02	$ 2.09	$ (0.04)
Diluted	$ 2.96	$ 2.04	$ (0.04)
Stock options and stock awards excluded from EPS calculation because their inclusion would be anti-dilutive (In thousands)	101	1,103	3,508

Note 3 – Fair Value Measurements

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

We use valuation techniques that are consistent with the market approach, the income approach and/or the cost approach. The market approach uses prices and other relevant information generated by market transactions involving identical or comparable assets and liabilities. The income approach uses valuation techniques to convert future amounts, such as cash flows or earnings, to a single present amount on a discounted basis. The cost approach is based on the amount that currently would be required to replace the service capacity of an asset (replacement costs). Valuation techniques should be consistently applied. Inputs to valuation techniques refer to the assumptions that market participants would use in pricing the asset or liability. Inputs may be observable, meaning those that reflect the assumptions market participants would use in pricing the asset or liability developed based on market data obtained from independent sources, or unobservable, meaning those that reflect the reporting entity's own assumptions about the assumptions market participants would use in pricing the asset or liability developed based on the best information available in the circumstances. These two types of inputs create a three-tier fair value hierarchy that gives the highest priority to quoted prices in active markets for identical assets or liabilities and the lowest priority to unobservable inputs. The fair value hierarchy is as follows:

Level 1 Inputs - Unadjusted quoted prices in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date.

Level 2 Inputs - Inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly. These include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the asset or liability (for example, interest rates, volatilities, prepayment speeds, loss severities, credit risks and default rates) or inputs that are derived principally from or corroborated by observable market data by correlation or other means.

Level 3 Inputs - Significant unobservable inputs that reflect an entity's own assumptions that market participants would use in pricing the assets or liabilities.

As of December 31, 2019, we had short-term investments. Trading securities held at December 31, 2019, were purchased on the open market and unrealized gains and losses are included in Other income (expense). The trading securities are valued under the fair value hierarchy using Level 1 Inputs. Short-term investments consist of investments such as time deposits, which are highly liquid with maturity dates greater than three months at the date of purchase. Generally, we can access these short-term investments in a relatively short amount of time but in doing so we generally forfeit a portion of earned and future interest income. Deferred compensation investments consist of the Company's stock, mutual funds and cash. See Note 13 for additional information related to our deferred compensation program and Note 18 for additional information related to our interest rate swaps and foreign currency hedges. The short-term investments and deferred compensation investments are valued under the fair value hierarchy using Level 1 and Level 2 Inputs.

Financial assets and liabilities carried at fair value as of December 31, 2019, are classified in the following table:

Description	Fair Market Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Changes in Fair Values Included in Current Period Earnings
Short-term investments	$ 4,825	$ 4,825	$ -	$ -	$ -
Interest rate swaps and collars	51	-	51	-	-
Deferred compensation investments	12,912	2,534	10,378	-	-

Financial assets and liabilities carried at fair value as of December 31, 2018 are classified in the following table:

Description	Fair Market Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Changes in Fair Values Included in Current Period Earnings
Short-term investments	$ 7,499	$ 5,594	$ 1,905	$ -	$ -
Interest rate swap assets	4,731	-	4,731	-	-
Deferred compensation investments	10,104	3,377	6,727	-	-

Certain financial assets and financial liabilities are measured at fair value on a non-recurring basis; that is, the instruments are not measured at fair value on an ongoing basis, but are subject to fair value adjustments in certain circumstances (for example, when there is evidence of impairment). We believe our long-term debt under our revolving credit facility approximates fair value and is valued under the fair value hierarchy using Level 2 Inputs. Financial assets and financial liabilities measured at fair value on a non-recurring basis were not significant at December 31, 2019 and 2018.

We also are responsible for a pension plan in the U.K. that holds investments carried at fair value. See Note 13 for additional information related to these pension plan investments.

Note 4 – Inventories

Inventories, stated at the lower of cost or market value, at December 31 were:

	2019	2018
Finished goods	$ 62,900	$ 59,244
Work-in-progress	55,082	59,166
Raw materials	118,490	97,025
	$ 236,472	$ 215,435

Note 5 – Property, Plant and Equipment

Property, plant and equipment at December 31 were:

	2019	2018
Buildings and leasehold improvements	$ 228,522	$ 208,184
Machinery and equipment	863,771	817,202
	1,092,293	1,025,386
Less: Accumulated depreciation and amortization	(706,658)	(635,969)
	385,635	389,417
Construction in-progress	30,747	16,886
Land	53,192	40,532
	$ 469,574	$ 446,835

Depreciation and amortization of property, plant and equipment was $91.5 million, $86.3 million and $76.9 million for the years ended December 31, 2019, 2018 and 2017, respectively. At December 31, 2018, we had capital lease obligations totaling approximately $2.1 million, included in Other current liabilities and Other long-term liabilities on the balance sheet. See Note 9 for information related to our lease liabilities as of December 31, 2019. During the fourth quarter of 2019 the Company recorded a $24.3 million gain realized upon selling land. The land was acquired in a previous period in anticipation of building a new corporate headquarters building.

Note 6 – Intangible Assets

Intangible assets subject to amortization at December 31 were as follows:

December 31, 2019					
Intangible Assets	**Useful life**	**Gross Carrying Amount**	**Accumulated Amortization**	**Currency Exchange**	**Net**
Amortized intangible assets					
Patents	5-15 years	$ 12,931	$ (10,634)	$ (254)	$ 2,043
Developed product technology	2-10 years	159,129	(77,915)	(7,857)	73,357
Customer relationships	7-12 years	62,093	(30,138)	(1,682)	30,273
Software license and other	3-4 years	5,822	(5,765)	(49)	8
Total amortized intangible assets		239,975	(124,452)	(9,842)	105,681
Intangible assets with indefinite lives					
In process research and development	Indefinite	4,580	-	-	4,580
Trademarks and trade names	Indefinite	10,303	-	(1,041)	9,262
Total Intangible assets with indefinite lives		14,883	-	(1,041)	13,842
Total intangible assets		$ 254,858	$ (124,452)	$ (10,883)	$ 119,523

December 31, 2018					
Intangible Assets	Useful life	Gross Carrying Amount	Accumulated Amortization	Currency Exchange	Net
Amortized intangible assets					
Patents	5-15 years	$ 11,823	$ (9,848)	$ (307)	$ 1,668
Developed product technology	2-10 years	159,129	(66,112)	(6,221)	86,796
Customer relationships	7-12 years	62,093	(24,737)	(1,689)	35,667
Software license and other	3-4 years	5,822	(5,713)	(64)	45
Total amortized intangible assets		238,867	(106,410)	(8,281)	124,176
Intangible assets with indefinite lives					
In process research and development	Indefinite	4,580	-	-	4,580
Trademarks and trade names	Indefinite	10,303	-	(1,124)	9,179
Total Intangible assets with indefinite lives		14,883	-	(1,124)	13,759
Total intangible assets		$ 253,750	$ (106,410)	$ (9,405)	$ 137,935

Amortization expense related to intangible assets subject to amortization was $18.0 million, $18.4 million and $18.8 million for the years ended December 31, 2019, 2018 and 2017, respectively. In process research and development is transferred to amortized intangible assets at the time the product becomes viable.

The schedule below sets future amortization expense of our currently owned intangible assets:

2020	$ 15,671
2021	15,065
2022	14,451
2023	14,186
2024	13,831
2025 and thereafter	32,477
Total	$ 105,681

Note 7 – Goodwill

Changes in goodwill for the years ended December 31, were as follows:

Balance at December 31, 2017	$ 134,187
Acquisitions:	
ERIS acquisition of Yea Shin Technology Corporation	1,029
Foreign currency translation adjustment	(2,779)
Balance at December 31, 2018	$ 132,437
Acquisitions:	
Wafer fabrication in Greenock, Scotland	931
Canyon Investment	1,671
ERIS acquisition of Yea Shin Technology Corporation	4,320
Foreign currency translation adjustment	1,959
Balance at December 31, 2019	$ 141,318

Note 8 – Bank Credit Agreements and Other Short-term and Long-term Debt

Short-term debt

Our Asia subsidiaries maintain credit facilities with several financial institutions through our foreign entities worldwide totaling $126.6 million. Other than two Taiwanese credit facilities that are collateralized by assets, our foreign credit lines are unsecured, uncommitted, repayable on demand, terminable by the lender at any time and contain no restrictive covenants. These credit facilities bear interest at LIBOR or similar indices plus a specified margin. Interest payments are due quarterly on outstanding amounts under the credit lines. The unused and available credit under the various facilities as of December 31, 2019, was approximately $111.8 million, net of a $13.3 million advanced under our foreign credit lines and $1.4 million credit used for import and export guarantee.

Long-term debt

We currently have a U.S. banking credit facility (the "U.S. Credit Facility") under which we may draw up to $250 million on a revolving basis, in addition to a $250 million term loan. The U.S. Credit Facility matures October 26, 2021. The remaining portion of the term loan included in the U.S. Credit Facility is repayable in part through quarterly installments that increase over time from $6.3 million per quarter in the first three quarters of 2019 to $9.4 million per quarter in the final year of the U.S. Credit Facility. We may, from time to time, request increases in the aggregate commitments under the U.S. Credit Facility of up to $200 million, subject to the lenders electing to increase their commitments or by means of the addition of new lenders, and subject to at least half of each increase in aggregate commitments being in the form of term loans, with the remaining amount of each increase being an increase in the amount of the revolving portion of the U.S. Credit Facility. The U.S. Credit Facility bears interest at LIBOR or similar indices plus a specified margin. The U.S. Credit Facility contains certain financial and non-financial covenants, including, but not limited to, a maximum consolidated leverage ratio, a minimum consolidated fixed charge coverage ratio, and restrictions on liens, indebtedness, investments, fundamental changes, dispositions, and restricted payments (including dividends and share repurchases). At December 31, 2019, we owed $75.2 million under the U.S. Credit Facility, all of which was outstanding under the term loan. The obligations of the Company and the other borrowers under the U.S. Credit Facility are secured by substantially all of the assets of the Company, including controlling interests in its first-tier subsidiaries, and by specified assets of certain of its subsidiaries. In addition to our credit lines, our 51% owned subsidiary, ERIS Technology Corporation ("ERIS"), borrowed $23.5 million on a long-term basis from local Taiwan banks in order to make an investment. The first loan of $4.3 million matures in 2033, while the second loan of $19.2 million matures in 2024.

Long-term debt balances as of December 31, consist of the following:

	2019	2018
Notes payable to Bank of Taiwan, original principal amount of TWD 140 million, fixed interest rate of 1.3%, matures June 28, 2033.	$ 4,242	$ 4,442
Notes payable to Yuan Ta Bank, original principal amount of TWD 113 million, fixed interest rate of 1.7%, matured on January 29, 2019.	-	749
Notes payable to China Trust Bank, original principal of TWD 576 million, fixed interest rate of 1.7%, matures May 27, 2024	19,212	
Term loan and revolver	75,187	210,000
Total long-term debt	98,641	215,191
Less: Current portion	(33,105)	(27,613)
Less: Unamortized debt issuance costs	(1,135)	(1,435)
Long-term debt, net of current portion	$ 64,401	$ 186,143

The table below sets forth the annual contractual maturities of long-term debt at December 31, 2019:

2020	$ 33,102
2021	43,620
2022	4,903
2023	1,571
2024	12,689
2025 and thereafter	2,756
Total long-term debt	$ 98,641

Note 9 – Leases

The Company leases certain assets used in its business, including land, buildings and equipment. These leased assets are used for operational and administrative purposes.

The components of lease expense are set forth in the table below:

		Twelve Months Ended December 31, 2019
Operating lease expense	$	14,824
Finance lease expense:		
Amortization of assets		978
Interest on lease liabilities		48
Short-term lease expense		336
Variable lease expense		2,663
Total lease expense	$	18,849

The table below sets forth supplemental balance sheet information related to leases:

		December 31, 2019
Operating leases:		
Operating lease ROU assets	$	57,427
Current operating lease liabilities		12,554
Noncurrent operating lease liabilities		27,545
Total operating lease liabilities	$	40,099
Finance leases:		
Finance lease ROU assets	$	3,396
Accumulated amortization		(1,924)
Finance lease ROU assets, net	$	1,472
Current finance lease liabilities	$	903
Non-current finance lease liabilities		138
Total finance lease liabilities	$	1,041
Weighted average remaining lease term (in years):		
Operating leases		4.4
Finance leases		1.3
Weighted average discount rate:		
Operating leases		3.8%
Finance leases		3.0%

The table below sets forth supplemental cash flow and other information related to leases:

		Twelve Months Ended December 31, 2019
Cash paid for the amounts included in the measurements of lease liabilities:		
Operating cash outflows from operating leases	$	18,325
Operating cash outflows from finance leases		48
Financing cash outflow from finance leases		1,082
ROU assets obtained in exchange for lease liabilities incurred:		
Operating leases		3,956

The table below sets forth information about lease liability maturities:

	December 31, 2019			
	Operating Leases		Finance Leases	
2020	$	13,779	$	922
2021		9,766		138
2022		8,276		-
2023		4,537		-
2024		2,433		-
2025		2,328		-
2026 and thereafter		2,573		-
Total lease payments		43,692		1,060
Less: imputed interest		(3,593)		(19)
Total lease obligations		40,099		1,041
Less: current obligations		(12,554)		(903)
Long-term lease obligations	$	27,545	$	138

Note 10 – Accrued Liabilities and Other Long-Term Liabilities

Accrued liabilities and other current liabilities at December 31 were:

	2019		2018	
Accrued expenses	$	33,733	$	28,170
Compensation and payroll taxes		34,043		33,632
Equipment purchases		10,167		12,568
Operating lease		12,554		-
Finance lease		903		-
Accrued pricing adjustments		5,617		3,591
Accrued professional services		3,258		3,242
Other		296		1,402
	$	100,571	$	82,605

Other long-term liabilities at December 31 were:

	2019		2018	
Accrued defined benefit plan	$	28,795	$	26,349
Unrecognized tax benefits		28,215		27,711
Operating lease		27,545		-
Finance lease		138		-
Deferred grans and subsidy		12,774		15,359
Deferred compensation		12,166		9,091
Tax contingencies		8,631		8,475
Other		2,281		3,794
	$	120,545	$	90,779

Note 11 – Stockholders' Equity

We have never declared or paid cash dividends on our Common Stock. Our U.S. Credit Facility permits us to pay dividends up to $3.0 million per fiscal year to its stockholders so long as we have not defaulted under the U.S. Credit Facility at the time of such dividend and no default would result from declaring or paying such dividend. The payment of dividends is within the discretion of our Board of Directors. See Note 8 for additional information regarding our credit agreements.

During November 2015, the Company's board of directors authorized a share repurchase plan to repurchase up to an aggregate of $100 million of the Company's outstanding common stock. This repurchase plan expired December 31, 2019, and was not renewed. During 2017, the Company repurchased 300,000 shares of its common stock at a cost of $8.7 million. All purchases were made through open market transactions and were recorded as treasury stock. During 2018 and 2019, the Company did not make any repurchases of its common stock.

Note 12 – Income Taxes

The table below sets forth our (loss) income before taxes for the years ended December 31:

Income (loss) before income taxes	2019	2018	2017
U.S.	$ 73,352	$ (24,141)	$ (72,668)
Foreign	124,894	174,103	135,259
Total	$ 198,246	$ 149,962	$ 62,591

The table below sets forth the components of our income tax provision (benefit) for the years ended December 31:

	2019	2018	2017
Current tax provision			
Federal	$ 259	$ -	$ -
Foreign	28,829	42,726	31,820
State	92	24	7
	29,180	42,750	31,827
Deferred tax provision (benefit)			
Federal	886	2,400	30,186
Foreign	11,994	(3,107)	(2,352)
State	30	56	(8)
	12,910	(651)	27,826
Liability for unrecognized tax benefits	2,041	2,457	2,672
Total income tax provision	$ 44,131	$ 44,556	$ 62,325

Effective Tax Rate Reconciliation

The table below sets forth a reconciliation between the effective tax rate and the statutory tax rates for the years ended December 31:

	2019		2018		2017	
	Amount	**Percent of pretax earnings***	**Amount**	**Percent of pretax earnings***	**Amount**	**Percent of pretax earnings***
Federal tax	$ 41,632	21.0	$ 31,488	21.0	$ 21,907	35.0
State income taxes, net of federal tax provision	1,389	0.7	(375)	(0.3)	(15)	-
Foreign income taxed at lower tax rates	(5,786)	(2.9)	(2,844)	(1.9)	(23,515)	(37.6)
U.S. tax impact of foreign operations	(3,340)	(1.7)	4,140	2.8	6,726	10.7
Foreign withholding taxes	22,685	11.4	10,962	7.3	4,343	6.9
Research and development	(3,686)	(1.9)	(3,541)	(2.4)	(2,643)	(4.2)
Liability for unrecognized tax benefits	2,041	1.0	2,457	1.6	2,672	4.3
Valuation allowance	(10,563)	(5.3)	(379)	(0.3)	2,077	3.3
Employee stock-based compensation	(52)	(0.0)	(2,154)	(1.4)	1,537	2.5
U.S. Tax Cuts and Jobs Act	-	-	2,762	1.8	45,908	73.4
Other	(189)	(0.1)	2,040	1.4	3,328	5.3
Income tax provision	$ 44,131	22.3	$ 44,556	29.7	$ 62,325	99.6

* *The sum of the amounts in the table may not equal to the effective tax rate due to rounding.*

Uncertain Tax Positions

In accordance with the provisions related to accounting for uncertainty in income taxes, we recognize the benefit of a tax position if the position is "more likely than not" to prevail upon examination by the relevant tax authority. The table below sets forth a reconciliation of the beginning and ending amount of unrecognized tax benefits:

	2019	2018	2017
Balance at January 1,	$ 32,209	$ 30,581	$ 28,849
Additions based on tax positions related to the current year	9,274	4,667	3,492
Additions for prior year tax positions	39	-	863
Reductions for prior year tax positions	(5,870)	(3,039)	(2,623)
Balance at December 31,	$ 35,652	$ 32,209	$ 30,581

If the $35.7 million of unrecognized tax benefits as of December 31, 2019, is recognized, approximately $33.5 million would affect the effective tax rate. It is reasonably possible that the amount of the unrecognized benefit with respect to certain of our unrecognized tax positions will significantly increase or decrease within the next 12 months. These changes may be the result of settlements of ongoing audits or competent authority proceedings. At this time, an estimate of the range of the reasonably possible outcomes cannot be made.

We file income tax returns in the U.S. federal jurisdiction and in various state and foreign jurisdictions. We are no longer subject to U.S. federal income tax examinations by tax authorities for tax years before 2012 or tax year 2015. We are no longer subject to China income tax examinations by tax authorities for tax years before 2009. With respect to state and local jurisdictions and countries outside of the U.S., with limited exceptions, we are no longer subject to income tax audits for years before 2014. Although the outcome of tax audits is always uncertain, we believe that adequate amounts of tax, interest and penalties, if any, have been provided for in our reserve for any adjustments that may result from future tax audits. We recognize accrued interest and penalties, if any, related to unrecognized tax benefits in interest expense. We had an immaterial amount of accrued interest and penalties at December 31, 2019, 2018 and 2017.

Deferred Taxes

The table below sets forth our deferred tax assets and liabilities as of December 31:

	2019	2018
Deferred tax assets		
Inventory cost	$ 10,423	$ 7,974
Accrued expenses and accounts receivable	4,420	1,866
Foreign tax credits	5,848	17,600
Research and development tax credits	16,263	15,456
Net operating loss carryforwards	24,139	9,635
Lease obligations	3,773	-
Accrued pension	4,629	4,294
Share based compensation and others	7,805	9,972
	77,300	66,797
Valuation allowances	(29,414)	(25,941)
Total deferred tax assets, non-current	47,886	40,856
Deferred tax liabilities		
Plant, equipment and intangible assets	(13,816)	(16,661)
Right of use assets	(4,008)	-
Outside basis differences and others	(23,648)	(7,267)
Total deferred tax liabilities, non-current	(41,472)	(23,928)
Net deferred tax assets	$ 6,414	$ 16,928

ASU No. 2013-11 provides that an entity is required to present an unrecognized tax benefit, or a portion of an unrecognized tax benefit, in the financial statements as a reduction to a deferred tax asset for a net operating loss carryforward, a similar tax loss, or a tax credit carryforward. The $1.2 million net deferred tax assets presented in the balance sheet as of December 31, 2019, is net of $5.2 million of unrecognized tax benefits. The $6.4 million and $16.9 million net deferred tax asset presented above for December 31, 2019 and 2018, respectively, is prior to the net balance sheet presentation required by ASU 2013-11.

At December 31, 2019, we had federal and state tax credit and research credit carryforwards of approximately $14 million and $8 million, respectively, which are available to offset future income tax liabilities. The federal tax credit carryforwards begin to expire in 2023 and the state tax credit carryforwards will begin to expire in 2020. Consistent with prior years, we determined that it is more likely than not that our state research credit carryforwards will expire before they are utilized. During 2019 we determined that it is more likely than not that our federal tax credit carryforwards will be utilized before expiration. We released the previously recorded valuation allowances as a credit to income tax expense. The valuation allowances recorded against the related deferred tax assets totaled $8 million and $19 million as of December 31, 2019 and 2018, respectively.

At December 31, 2019, we had state net operating loss (“NOL”) carryforwards of approximately $1 million, and foreign NOL carryforwards of $110 million which are available to offset future taxable income. The state NOL carryforward will begin to expire in 2020. We determined that it is more likely than not that the state NOL carryforwards will expire before they are fully utilized and recorded a full valuation allowance on the related deferred tax assets. The foreign NOL carryforwards will begin to expire in 2020. We determined that it is more likely than not that a portion of the foreign NOL carryforwards will expire before they are fully utilized. The valuation allowances recorded against the related deferred tax assets totaled $19 million and $7 million as of December 31, 2019 and 2018, respectively.

Supplemental Information

Our undistributed foreign earnings continue to be indefinitely reinvested in foreign operations, with limited exceptions related to earnings of European and Asian subsidiaries. As of December 31, 2019, we had undistributed earnings from non-U.S. operations of approximately $913 million (including approximately $115 million of restricted earnings, which are not available for dividends). Undistributed earnings of our China subsidiaries comprise $425 million of this total. Additional Chinese withholding taxes of approximately $46 million would be required should the $425 million of such earnings be distributed out of China as dividends.

The impact of tax holidays decreased our tax expense by approximately $3.1 million, $1.6 million and $3.7 million for the years ended December 31, 2019, 2018 and 2017, respectively. The benefit of the tax holidays on basic and diluted earnings per share was $0.06, $0.03 and $0.08 for the twelve months ended December 31, 2019, 2018 and 2017, respectively.

Note 13 – Employee Benefit Plans

Defined Benefit Plan

In connection with the Zetex acquisition, we adopted a contributory defined benefit plan that covers certain employees in the U.K. The defined benefit plan is closed to new entrants and frozen with respect to future benefit accruals. The retirement benefit is based on the final average compensation and service of each eligible employee. We determined the fair value of the defined benefit plan assets and utilize an annual measurement date of December 31. At subsequent measurement dates, defined benefit plan assets will be determined based on fair value. Defined benefit plan assets consist of a diverse range of listed and unlisted securities including corporate bonds and mutual funds and are denominated in the currency in which the benefits will be paid and that have terms to maturity approximating the terms of the related pension liability. The net pension and supplemental retirement benefit obligations and the related periodic costs are based on, among other things, assumptions of the discount rate, estimated return on plan assets and mortality rates. These obligations and related periodic costs are measured using actuarial techniques and assumptions. The projected unit credit method is the actuarial cost method used to compute the pension liabilities and related expenses. All unrecognized actuarial gains and losses, prior service costs and accumulated other comprehensive income are eliminated and the balance sheet liability is set equal to the funded status of the defined benefit plan at acquisition date. In October 2018, a U.K. High Court ruling required pension plans, subject to guaranteed minimum pension rules to amend their pension plan formulas to equalize benefits for men and women to adjust for unequal results previously calculated. The U.K. High Court ruling went on to require pension plans to make back payments subject to plan rule limitations, with interest applied at one percentage point over the Bank of England base rate. The guarantee equalization payment was allowed for by increasing the pension liability. Our portion of the total equalization amount was approximately £0.5 million (or approximately $0.7 million based on GBP: USD exchange rate of 1.33).

The table below sets forth net periodic benefit costs of the plan for the twelve months ended December 31:

	Defined Benefit Plan	
	2019	**2018**
Components of net periodic benefit cost:		
Service cost	$ 256	$ 267
Interest cost	4,069	4,151
Recognized actuarial loss	1,546	2,625
Expected return on plan assets	(7,511)	(7,339)
Prior service cost	55	-
Net periodic benefit cost	$ (1,585)	$ (296)

The table below sets forth the benefit obligation, the fair value of plan assets, and the funded status as of December 31:

	Defined Benefit Plan	
	2019	**2018**
Change in benefit obligation:		
Beginning balance	$ 141,104	$ 166,063
Service cost	255	267
Interest cost	4,045	4,151
Actuarial loss (gain)	11,214	(9,827)
Benefits paid	(4,158)	(3,625)
Settlements	-	(7,471)
Currency changes	6,220	(8,454)
Benefit obligation at December 31	$ 158,680	$ 141,104
Change in plan assets:		
Beginning balance - fair value	$ 117,162	$ 134,234
Employer contribution	2,629	2,796
Actual return on plan assets	11,791	(2,084)
Benefits paid	(4,158)	(3,625)
Settlements	-	(6,731)
Currency changes	5,197	(7,428)
Fair value of plan assets at December 31	$ 132,621	$ 117,162
Underfunded status at December 31	$ (26,059)	$ (23,942)

Based on an actuarial study performed as of December 31, 2019, the plan is underfunded by approximately $26.1 million and the liability is reflected in our consolidated balance sheets as a noncurrent liability and the amount recognized in accumulated other comprehensive loss was approximately $44.7 million.

We apply the "10% corridor" approach to amortize unrecognized actuarial gains (losses). Under this approach, only actuarial gains (losses) that exceed 10% of the greater of the projected benefit obligation or the market-related value of the plan assets are amortized. For the twelve months ended December 31, 2019, the plan's total recognized loss increased by approximately $5.1 million. The variance between the actual and expected return to plan assets during 2019 decreased the total unrecognized net loss by approximately $4.3 million. The total unrecognized net loss is more than 10% of the projected benefit obligation and 10% of the plan assets. Therefore, the excess amount will be amortized over the average term to retirement of plan participants, not yet in receipt of pension, which as of December 31, 2019, the average term was approximately 10.5 years. The following weighted-average assumptions were used to determine net periodic benefit costs for the twelve months ended December 31:

	2019	2018
Discount rate	2.9%	2.6%
Expected long-term return on plan assets	6.4%	5.6%

The following weighted-average assumption was used to determine the benefit obligations at December 31:

	2019	2018
Discount rate	2.0%	2.9%

The expected long-term return on plan assets was determined based on historical and expected future returns of the various asset classes. The plan's investment policy includes a mandate to diversify assets and invest in a variety of asset classes to achieve its expected long-term return and is currently invested in a variety of funds representing most standard equity and debt security classes. Trustees of the plan may make changes at any time. The table below sets forth the plan asset allocations of the assets in the plan and expected long-term return by asset category:

Asset category	Expected long-term return	Asset allocation
Growth assets	7.8%	70%
Hedging assets	1.3%	27%
Cash	0.8%	3%
Total	5.6%	100%

Benefit plan payments are primarily made from funded benefit plan trusts and current assets. The table below sets forth the expected future benefit payments, including future benefit accrual, as of December 31, 2019:

2020	$	4,030
2021		4,592
2022		4,913
2023		5,335
2024		5,668
2025-2029		29,846

We adopted a payment plan with the trustees of the defined benefit plan, in which we would make annual contributions each year through 2030, of approximately GBP 2 million (approximately $2.7 million based on a GBP:USD exchange rate of 1.33). The annual contributions were expected to meet the deficit disclosed in the plan as of April 5, 2013 by December 31, 2030. The trustees are required to review the funding position every three years. Following the pension plan funding valuation as at March 31, 2019 the trustees and the Company have been in discussions regarding a recovery plan would result in a plan to recover the deficit by January 1, 2029. Moving the recovery plan from a 2030 deadline to a 2029 deadline could cause us to increase our contributions. This plan has not been finalized.

The defined benefit plan's investment strategy is to invest 65% in growth strategy assets and 35% in hedging strategy assets. The growth strategy consists of a highly diversified set of assets, and the hedging component is designed to hedge a significant proportion of the plan's interest and inflation rate risks. The overall strategy is designed to return a long-term return of 2.6% p.a. above the liability benchmark which is broadly equal to changes in the plan's liabilities.

The plan's trustees appoint fund managers to carry out all the day-to-day functions relating to the management of the fund and its administration. The fund managers must invest their portion of the plan's assets in accordance with their investment manager agreement agreed by the trustees. The trustees are responsible for agreeing these investment manager agreements and for deciding on the portion of the plan's assets that will be invested with each fund manager. When making decisions, the trustees take advice from experts including the plan's actuary and also have the option to consult with the Company.

The following table summarizes the major categories of the plan assets:

	December 31, 2019			
Asset category	**Level 1**	**Level 2**	**Level 3**	**Total**
Cash and cash equivalents	$ 14,057	$ -	$ -	$ 14,057
Equity securities:				
U.K.	-	683	-	683
Overseas equities	-	5,909	-	5,909
Emerging markets	-	11,413	-	11,413
Fixed income securities:				
Government bonds	-	5,160	-	5,160
Non-government bonds	-	9,906	-	9,906
Index-linked securities:				
U.K. treasury securities	-	166	-	166
Other types of investments				
Hedge funds	-	39,710	-	39,710
Property	-	3,224	-	3,224
Liability-driven investments	-	42,014	-	42,014
Other	-	379	-	379
Total	$ 14,057	$ 118,564	$ -	$ 132,621

Fair value is taken to mean the bid value of securities, as supplied by the fund managers. All the plan's securities are publicly traded and highly liquid. The plan does not hold any Level 3 securities. See Note 3 for additional information regarding fair value and Levels 1, 2 and 3.

The investment manager agreements require the fund managers to invest in a diverse range of stocks and bonds across each particular asset class. The stocks held by the plan in a particular asset class should therefore match closely the underlying stocks in the relevant index. We believe that this leads to minimal concentration of risk within each asset class; although we recognize that some asset classes are inherently more risky than others.

We also have pension plans in Asia for which the benefit obligation, fair value of the plan assets and the funded status amounts are immaterial and therefore, not included in the amounts or assumptions above.

401(k) Retirement Plan

We maintain a 401(k) retirement plan (the "Plan") for the benefit of qualified employees at our U.S. locations. Employees who participate may elect to make salary deferral contributions to the Plan up to 100% of the employees' eligible payroll subject to annual Internal Revenue Code maximum limitations. We currently make a matching contribution of $1 for every $2 contributed by the participant up to 6% (3% maximum matching) of the participant's eligible payroll, which vests over an initial four years. In addition, we may make a discretionary contribution to the entire qualified employee pool, in accordance with the Plan.

As stipulated by the regulations of China, we maintain a retirement plan pursuant to the local municipal government for the employees in China. We are required to make contributions to the retirement plan at a rate between 10% and 22% of the employee's eligible payroll. Pursuant to the Taiwan Labor Standard Law and Factory Law, we maintain a retirement plan for the employees in Taiwan, whereby we make contributions at a rate of 6% of the employee's eligible payroll.

For the years ended December 31, 2019, 2018 and 2017, total amounts expensed under these plans were approximately $16.3 million, $17.0 million and $14.8 million, respectively.

Deferred Compensation Plan

We maintain a Non-Qualified Deferred Compensation Plan (the "Deferred Compensation Plan") for executive officers, key employees and members of our Board of Directors. The Deferred Compensation Plan allows eligible participants to defer the receipt of eligible compensation, including equity awards, until designated future dates. We offset our obligations under the Deferred Compensation Plan by investing in the actual underlying investments. At December 31, 2019 these investments are classified as trading securities and are carried at fair value. At December 31, 2019, these investments totaled approximately $12.9 million. All gains and losses in these investments are materially offset by corresponding gains and losses in the deferred compensation plan liabilities.

Note 14 – Share-Based Compensation

The table below sets forth the line items where share-based compensation expense was recorded for the twelve months ended December 31:

	2019	2018	2017
Cost of goods sold	$ 925	$ 362	$ 645
Selling, general and administrative expense	16,687	17,395	15,130
Research and development expense	2,923	2,979	2,834
Total share-based compensation expense	$ 20,535	$ 20,736	$ 18,609

The table below sets forth share-based compensation expense by type for the twelve months ended December 31:

	2019	2018	2017
Stock options	$ -	$ 274	$ 934
Share grants	20,535	20,462	17,675
Total share-based compensation expense	$ 20,535	$ 20,736	$ 18,609

In May 2013, our stockholders approved our 2013 Equity Incentive Plan ("2013 Plan"). Since the approval of the 2013 Plan, all stock options are granted under the 2013 Plan, and we will not grant any further stock options under our 2001 Plan. Stock options under the 2013 Plan generally vest in equal annual installments over a four-year period and expire eight years after the grant date. The number of shares originally authorized to be awarded under the 2013 Plan was 6 million shares. In May 2017, our stockholders approved an amendment to the 2013 Plan, authorizing and additional 6 million shares to be awarded, bringing the total shares authorized to be awarded under the 2013 Plan to 12 million shares.

Share-based compensation expense for stock options granted in previous years was calculated on the date of grant using the Black-Scholes-Merton option-pricing model. No stock options were granted in any of the periods presented.

Total cash received from option exercises was approximately $11.9 million, $4.9 million and $13.6 million during 2019, 2018 and 2017, respectively.

At December 31, 2019, there was no unrecognized compensation expense related to unvested options.

The table below sets forth a summary of activity in our stock option plan:

Stock Options	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Outstanding at December 31, 2016	1,833	23.08		
Exercised	(581)	23.42		
Forfeited or expired	(24)	26.87		
Outstanding at December 31, 2017	1,228	22.85		
Exercised	(240)	20.28		
Outstanding at December 31, 2018	988	23.47		
Exercised	(524)	22.68		$ 10,600
Outstanding and Exercisable at December 31, 2019	464	24.37	2.0	$ 14,849

The table below sets forth information about stock options outstanding at December 31, 2019:

Plan	Range of Exercise Prices	Number Exercisable	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price
2001 Plan	$15.05-29.21	259	2.0	$ 23.17
2013 Plan	$23.35-27.92	205	2.0	25.91

Share Grants – Restricted stock awards and restricted stock units generally vest in equal annual installments over a four-year period. All new grants are granted under the 2013 Plan, and there will be no additional share grants under the 2001 Plan. Restricted stock grants are measured based on the fair market value of the underlying stock on the date of grant and compensation expense is recognized on a straight-line basis over the requisite four-year service period.

Performance stock units ("PSUs") are measured based on the fair market value of the underlying stock on the date of grant and compensation expense is recognized over the three-year performance period, with adjustments made to the expense to recognize the probable payout percentage. PSUs will vest upon the Company achieving a cumulative 3-year non-GAAP operating income target for the applicable periods.

The table below sets forth a summary of our non-vested share grants in 2019, 2018 and 2017:

Restricted and Performance Stock Grants	Shares	Weighted Average Grant Date Fair Value ($)	Aggregate Intrinsic Value
Nonvested at December 31, 2016	2,620	21.31	
Granted	746	25.23	
Vested	(645)	21.89	
Forfeited	(441)	22.31	
Nonvested at December 31, 2017	2,280	22.24	
Granted	646	32.06	
Vested	(1,213)	21.39	
Forfeited	(46)	24.72	
Nonvested at December 31, 2018	1,667	26.68	
Granted	670	38.15	
Vested	(573)	24.90	$ 20,682
Forfeited	(67)	30.44	
Nonvested at December 31, 2019	1,697	31.71	$ 95,687

During 2017, the Company modified a performance-based award previously granted to our Chief Executive Officer. The effect was to replace a performance-based grant covering 700,000 shares of the Company's common stock with a performance-based grant covering 62,905 shares of the Company's common stock and a restricted stock grant covering 62,905 of the Company's common stock. If certain performance criteria are met for the performance-based grant, Dr. Lu will receive 200% of that award or 125,810 shares. The incremental expense if Dr. Lu received 200% of the performance-based grant award is approximately $3.3 million. The incremental expense of the restricted stock grant is approximately $1.7 million. During 2018, we modified previously granted stock option and stock awards for two corporate officers who retired. The result of the modification was the acceleration of the vesting of 7,500 stock options and 79,720 stock awards for the corporate officers. The incremental expense recorded for this modification was approximately $1.8 million, which was expensed in SG&A during 2018.

The total unrecognized share-based compensation expense as of December 31, 2019, was approximately $40.0 million, relating to share grants, which was expected to be recognized over a weighted average period of approximately 2.2 years. The aggregate fair value amount of share grants that vested during 2019 was $20.7 million.

Note 15 – Related Party Transactions

We conduct business with a related party company, Lite-On Semiconductor Corporation; ("LSC"), and its subsidiaries and affiliates, and Nuvoton Technology Corporation and its subsidiaries and affiliates (collectively, "Nuvoton"). LSC is our largest stockholder, owning approximately 15.2% of our outstanding Common Stock as of December 31, 2019, and is a member of the Lite-On Group of companies. In the third quarter of 2019 we entered into a Share Swap Agreement that provides for the acquisition of LSC and its subsidiaries by the Company. At the effective date of the transaction, each share of LSC will be converted into the right to receive TWD $42.50 per share in cash, or approximately US $1.42 per share based on December 31, 2019 exchange rates. The aggregate consideration to be paid by the Company, based on the December 31, 2019 exchange rate, is approximately $437 million. This amount is subject to change, based on the Taiwan dollar to United States dollar exchange rate at closing. The acquisition received LSC shareholder approval on October 25, 2019, and we anticipate completing the acquisition in the second half of 2020, subject to customary closing conditions and regulatory approvals. We expect to fund the purchase price of the transaction primarily with proceeds from a new bank financing arrangement. We sold products to LSC totaling less than 1% of our net sales for the years ended December 31, 2019, 2018 and 2017, respectively. Raymond Soong, the Chairman of the Board of Directors, is the Chairman of LSC, and is the Chairman of Lite-On Technology Corporation ("LTC"), a significant shareholder of LSC. C.H. Chen, our former President and Chief Executive Officer and currently the Vice Chairman of the Board of Directors, is also Vice Chairman of LSC and a board member of LTC. Dr. Keh-Shew Lu, our President and Chief Executive Officer and a member of our Board of Directors, is a board member of LTC, and a board member of Nuvoton. We consider our relationships with LSC, a member of the Lite-On Group of companies, and Nuvoton to be mutually beneficial and we plan to continue our strategic alliance with LSC and Nuvoton. We purchase wafers from Nuvoton for use in our production process.

We also conduct business with Keylink International (B.V.I.) Inc. and its subsidiaries and affiliates ("Keylink"). Keylink is our 5% partner in our Shanghai assembly and test facilities. We sell products to, and purchase inventory from, companies owned by Keylink. We sold products to companies owned by Keylink, totaling approximately 1% of net sales for each of the years ended December 31, 2019, 2018 and 2017. In addition, our subsidiaries in China lease their manufacturing facilities in Shanghai from, and subcontract a portion of our manufacturing process (metal plating and environmental services) to, Keylink. We also pay a consulting fee to Keylink. The aggregate amounts paid to Keylink for the years ended December 31, 2019, 2018 and 2017 were approximately $15.3 million, $16.6 million and $17.1 million, respectively. In addition, Chengdu Ya Guang Electronic Company Limited ("Ya Guang") is our 2% partner in one of our Chengdu assembly and test facilities and our 5% partner in our other Chengdu assembly and test facilities; however, we have no material transactions with Ya Guang, other than this joint venture. We also purchase materials from Jiyuan Crystal Photoelectric Frequency Technology Ltd. ("JCP") an FCP manufacturing company in which we have made an equity investment and account for using the equity method of accounting.

The Audit Committee of the Board reviews all related party transactions for potential conflict of interest situations on an ongoing basis, all in accordance with such procedures as the Audit Committee may adopt from time to time.

The table below sets forth net sales and purchases from related parties for the twelve months ended December 31:

	2019	2018	2017
LSC, its subsidiaries and affiliates			
Net sales	$ 912	$ 1,179	$ 1,406
Purchases	$ 13,799	$ 21,126	$ 24,313
Keylink			
Net sales	$ 15,543	$ 12,227	$ 8,856
Purchases	$ 2,399	$ 3,581	$ 3,827
Nuvoton			
Purchases	$ 7,719	$ 11,152	$ 11,407
JCP			
Purchases	$ 625	$ 600	$ 1,105

The table below sets forth accounts receivable from and accounts payable to related parties at December 31:

	2019	2018
LSC, its subsidiaries and affiliates		
Accounts receivable	$ 184	$ 286
Accounts payable	$ 2,154	$ 2,696
Keylink		
Accounts receivable	$ 31,598	$ 6,264
Accounts payable	$ 28,244	$ 4,656
Nuvoton		
Accounts payable	$ 1,055	$ 1,939
JCP		
Accounts payable	$ 173	$ 151

The increase in Keylink accounts receivable and accounts payable is the result of a foreign government requirement that the business process change from a service model to a buy/sell business model.

Note 16 – Segment Information, Revenue and Enterprise-Wide Disclosures

Segment Reporting. For financial reporting purposes, we operate in a single segment, standard semiconductor products, through our various manufacturing and distribution facilities. We aggregate our products because the products are similar and have similar economic characteristics, use similar production processes and share the same customer type. Our primary operations include operations in Asia, North America and Europe. The accounting policies of the operating entities are the same as those described in the summary of significant accounting policies.

The tables below set forth net sales based on the location of the subsidiary producing the net sale:

2019	Asia	North America	Europe	Consolidated
Total sales	$ 1,234,750	$ 612,697	$ 234,092	$ 2,081,539
Inter-company sales	(418,377)	(320,746)	(93,286)	(832,409)
Net sales	$ 816,373	$ 291,951	$ 140,806	$ 1,249,130
Property, plant and equipment	$ 379,075	$ 23,104	$ 67,395	$ 469,574
Assets	$ 1,207,331	$ 216,250	$ 215,803	$ 1,639,384

2018	Asia	North America	Europe	Consolidated
Total sales	$ 1,069,068	$ 179,459	$ 195,406	$ 1,443,933
Inter-company sales	(150,421)	(24,322)	(55,201)	(229,944)
Net sales	$ 918,647	$ 155,137	$ 140,205	$ 1,213,989
Property, plant and equipment	$ 392,445	$ 30,507	$ 23,883	$ 446,835
Assets	$ 1,095,037	$ 240,540	$ 190,794	$ 1,526,371

2017	Asia	North America	Europe	Consolidated
Total sales	$ 968,720	$ 171,964	$ 175,004	$ 1,315,688
Inter-company sales	(128,924)	(71,608)	(60,952)	(261,484)
Net sales	$ 839,796	$ 100,356	$ 114,052	$ 1,054,204
Property, plant and equipment	$ 390,850	$ 44,523	$ 23,796	$ 459,169
Assets	$ 1,061,686	$ 230,997	$ 195,990	$ 1,488,673

Disaggregation of Revenue. We disaggregate revenue from contracts with customers into direct sales and distribution sales ("Distributors") and by geographic area. Direct sales customers consist of those customers using our product in their manufacturing process, and Distributors are those customers who resell our products to third parties. We sell our products to customers in multiple areas of the world including Asia, Europe, and North America. Across these regions, we sell products to end users in a variety of markets such as consumer electronics, computing, communications, industrial and automotive. Further, most of our contracts are fixed-price arrangements, and are short term in nature, ranging from days to several months.

The tables below set forth the amount of net sales by type, direct sales or Distributor and the location of the customer based on the location to where the products were shipped for the twelve months ended December 31, 2019, 2018 and 2017:

	Net Sales by Type for the Twelve Months Ended December 31,					
	Direct Sales			Distributor		
	2019	2018	2017	2019	2018	2017
China	$ 228,822	$ 226,360	$ 220,390	$ 404,977	$ 436,265	$ 372,737
United States	10,161	15,644	16,522	90,435	104,598	69,755
Korea	22,099	16,562	17,765	38,269	47,398	48,083
Germany	11,559	11,770	10,879	66,496	81,944	63,423
Singapore	568	2,150	873	66,945	66,003	57,697
Taiwan	2,748	2,846	6,327	90,753	73,498	61,042
All others (1)	131,894	71,665	61,699	83,404	57,286	47,012
Total	$ 407,851	$ 346,997	$ 334,455	$ 841,279	$ 866,992	$ 719,749

	Percent of Net Sales by Type for the Twelve Months Ended December 31,					
	Direct Sales			Distributor		
	2019	2018	2017	2019	2018	2017
China	56%	65%	66%	48%	50%	52%
United States	2%	5%	5%	11%	12%	10%
Korea	5%	5%	5%	5%	5%	7%
Germany	3%	3%	3%	8%	9%	9%
Singapore	-	1%	-	8%	8%	8%
Taiwan	1%	1%	2%	11%	8%	8%
All others (1)	33%	20%	19%	9%	8%	6%
Total	100%	100%	100%	100%	100%	100%

	Total Net Sales for the Twelve Months Ended December 31,					
	Dollar			Percent of Net Sales		
	2019	2018	2017	2019	2018	2017
China	$ 633,799	$ 662,625	$ 593,127	51%	55%	56%
United States	100,596	120,242	86,277	8%	10%	8%
Korea	60,368	63,960	65,848	5%	5%	6%
Germany	78,055	93,714	74,302	6%	8%	7%
Singapore	67,513	68,153	58,570	5%	6%	6%
Taiwan	93,501	76,344	67,369	7%	6%	6%
All others (1)	215,298	128,951	108,711	18%	10%	11%
Total	$ 1,249,130	$ 1,213,989	$ 1,054,204	100%	100%	100%

(1) Represents countries with less than 3% of the total net sales of each.

The tables below set forth a summary of the above data:

	2019	2018	2017
Direct Sales			
Asia	$ 316,962	$ 292,459	$ 285,610
Americas	27,443	26,296	23,696
Europe	63,446	28,242	25,149
Total	407,851	346,997	334,455
Distributor Sales			
Asia	625,615	651,659	563,661
Americas	98,095	105,458	69,755
Europe	117,569	109,875	86,333
Total	841,279	866,992	719,749
Total Sales			
Asia	942,577	944,118	849,271
Americas	125,538	131,754	93,451
Europe	181,015	138,117	111,482
Total	$ 1,249,130	$ 1,213,989	$ 1,054,204

Major customers – During the twelve months ended December 31, 2019, 2018 and 2017, one customer, a broad-based global distributor that sells to thousands of different end users, accounted for approximately 10.0% or $119.6 million, $120.0 million and $101.7 million, respectively, of our revenue. No customer accounted for 10% or greater of our outstanding accounts receivable at December 31, 2019 or 2018.

Note 17 – Commitments and Contingencies

Lease commitments – We lease offices, manufacturing plants, equipment, vehicles and warehouses under various lease agreements expiring through 2028. For information related to our lease commitments see Note 9.

In addition, we have the following land right leases. None of the leases requires a rental payment.

Location	Term (years)	Expiration Date
Chengdu, China	50	2061
Shanghai, China*	50	2056
Shandong, China	50	2058
Shanghai, China*	50	2058
Yangzhou, China	50	2065

*Separate leases by separate Diodes' subsidiaries

Purchase commitments – We have entered into non-cancelable purchase contracts for capital expenditures, primarily for manufacturing equipment, for approximately $30.0 million at December 31, 2019. In addition to these purchase commitments, we have equity investment obligations for our Chengdu facilities of $25 million for 2020, and capital investment obligations of $25 million and $16 million for 2020 and 2021, respectively. As of December 31, 2019, we also had a commitment to purchase approximately $63.6 million of wafers to be used in our manufacturing process. These wafer purchases will occur during 2020.

Contingencies - From time to time, we are involved in various legal proceedings that arise in the normal course of business. While we intend to defend any lawsuit vigorously, we presently believe that the ultimate outcome of any current pending legal proceeding will not have any material adverse effect on our financial position, cash flows or operating results. However, litigation is subject to inherent uncertainties, and unfavorable rulings could occur. An unfavorable ruling could include monetary damages, which could impact on our business and operating results for the period in which the ruling occurs or future periods. Based on information available, we evaluate the likelihood of potential outcomes. We record the appropriate liability when the amount is deemed probable and reasonably estimable. In addition, we do not accrue for estimated legal fees and other directly related costs as they are expensed as incurred. The Company is not currently a party to any pending litigation that the Company considers material.

Note 18 – Derivative Financial Instruments

In accordance with ASC 815 we recognize derivative instruments on our balance sheet, and we measure them at fair value. The accounting for changes in the fair value of derivatives depends on the intended use of the derivative, whether we have elected to designate the derivative as being in a hedging relationship, and whether the hedging relationship has satisfied the criteria necessary to apply hedge accounting. Derivative instruments that are designated, and qualify as hedges of the exposure to changes in the fair value are considered fair value hedges. Derivative instruments that are designated, and qualify as hedges of the exposure to variability in expected future cash flows are considered cash flow hedges. Derivative instruments may also be designated as hedges of the foreign currency exposure of a net investment in a foreign operation. We currently only utilize cash flow hedges and do not use derivatives for trading or speculative purposes.

Hedge accounting generally provides for the matching of the timing of gain or loss recognition on the hedging instrument with the recognition of the changes in the fair value of the hedged asset or liability that are attributable to the hedged risk in a fair value hedge, or the earnings effect of the hedged forecasted transactions in a cash flow hedge. We may enter into derivative contracts that are intended to economically hedge certain risks, even though we elect not to apply hedge accounting under ASC 815. Changes in the fair value of derivatives not designated in hedging relationships are recorded directly in the consolidated statements of income. Specific information about the valuations of derivatives is described in Note 1 and classification of derivatives in the fair value hierarchy is described in Note 3. Currently our interest rate swaps and interest rate collars are designated as hedges while our foreign exchange contracts are not designated as hedges.

The effective portion of changes in the fair value of derivatives designated and qualifying as cash flow hedges is recorded in accumulated other comprehensive loss and is subsequently reclassified into earnings in the period in which the hedged forecasted transaction affects earnings.

Certain of the Company's agreements with its derivative counterparties contain provisions where if certain merger activity, a change of control, or a capital structure change occurs that materially changes the Company's creditworthiness in an adverse manner, the Company’s counterparty may have the right to terminate any derivative transactions under such agreement.

The company has agreements with each of its derivative counterparties that contain a provision where the Company could be declared in default on its derivative obligations if repayment of the underlying indebtedness is accelerated by the lender due to the Company's default on the indebtedness.

Hedges of Foreign Currency Risk

We are exposed to fluctuations in various foreign currencies against our different functional currencies. We use foreign currency forward agreements to manage this exposure. At December 31, 2019 and 2018, we had outstanding foreign currency forward contracts that are intended to preserve the economic value of foreign currency denominated monetary assets and liabilities; these instruments are not designated for hedge accounting treatment in accordance with ASC 815. There is no fair value of our foreign exchange hedges; therefore they are not recorded in our Consolidated Balance Sheets. As of December 31, 2019 and 2018, the total notional amounts of these foreign exchange contracts was $106.0 million and $122.4 million, respectively.

The tables below set forth outstanding foreign currency forward contracts at December 31, 2019 and 2018:

Notional Amount		Effective Date	Maturity Date	Index*	Weighted Average Strike Rate	Cash Flow Hedge Designation
$	1,844	December 2019	February 2020	EUR/GPB	0.8471	Non-designated
	3,375	December 2019	February 2020	EUR/USD	1.123	Non-designated
	25,957	December 2019	February 2020	GPB/USD	1.3257	Non-designated
	39,340	December 2019	February 2020	USD/CNY	6.9762	Non-designated
	763	December 2019	February 2020	USD/JPY	108.732	Non-designated
	33,621	December 2019	February 2020	USD/TWD	29.988	Non-designated
	500	January 2019	January 2020	USD/TWD	30.635	Non-designated
	500	October 2019	February 2020	USD/TWD	30.571	Non-designated
$	1,221	December 2018	February 2019	EUR/GPB	0.8981	Non-designated
	12,538	December 2018	February 2019	EUR/USD	1.1479	Non-designated
	8,463	December 2018	February 2019	GPB/USD	1.2785	Non-designated
	44,946	December 2018	February 2019	USD/CNY	6.8738	Non-designated
	844	December 2018	February 2019	USD/JPY	110.14	Non-designated
	54,041	December 2018	February 2019	USD/TWD	30.559	Non-designated
	300	December 2018	January 2019	USD/TWD	30.669	Non-designated

* EUR = Euro
GBP = British Pound Sterling
USD = United States Dollar
CNY = Chinese Yuan Renminbi
JPY = Japan Yen
TWD = Taiwan dollar

Hedges of Interest Rate Risk

The Company's objectives in using interest rate derivatives are to add stability to interest expense and to manage its exposure to interest rate movements. To accomplish this objective, the Company primarily uses interest rate swaps, including interest rate collars, as part of its interest rate risk management strategy. Interest rate swaps designated as cash flow hedges involve the receipt of variable amounts from a counterparty in exchange for the Company making fixed-rate payments over the life of the agreements without exchange of the underlying notional amount.

The table below sets forth information related to the number of and the notional amount of our interest rate related derivative instruments at December 31 2019 and December 31, 2018:

	Number of Instruments		Notional Amount			
	2019	2018	2019		2018	
Interest rate swaps and collars	9	12	$	200,000	$	210,000

The table below sets forth the fair value of the Company's interest rate related derivative financial instruments as well as their classification on the Consolidated Balance Sheets as of December 31, 2019 and December 31, 2018:

	Fair Value															
	Other Current Assets				Other Assets				Other Current Liabilities				Other Liabilities			
	2019		2018		2019		2018		2019		2018		2019		2018	
Interest rate swaps and collars	$	194	$	1,936	$	36	$	2,795	$	51	$	-	$	127	$	-

The tables below sets forth the effect of the Company's derivative financial instruments on the Consolidated Statements of Income for the years ended December 31 2019, 2018 and 2017:

Derivative Instruments Designated as Hedging Instruments	Amount of Gain or (Loss) Recognized in OCI on Derivative December 31,			Location of Gain or (Loss) Reclassified from Accumulated OCI into Income	Amount of Gain or (Loss) Reclassified from Accumulated OCI into Net Income December 31,			Location of Gain or (Loss) Recognized in Income on Derivative (Ineffective Portion Excluded from Effectiveness Testing)	Amount of Gain or (Loss) Recognized in Income on Derivative (Ineffective Portion and Amount Excluded from Effectiveness Testing) December 31,		
	2019	2018	2017		2019	2018	2017		2019	2018	2017
Interest rate swaps and collars	$(2,997)	$ 1,790	$ 1,567	Interest expense	$ 1,248	$ 860	$ 577	N/A	$ -	$ -	$ -
Cross currency swaps	(298)	-	-	N/A	-	-	-	Interest income	688	-	

We estimate that $0.3 million of net derivative gains included in accumulated other comprehensive income ("AOCI") as of December 31, 2019, will be reclassified into earnings within the following 12 months. No gains or losses were reclassified from AOCI into earnings as a result of forecasted transactions that failed to occur during fiscal year 2019.

Derivatives Not Designated As Hedging Instruments	Amount of Gain or (Loss) Recognized in Net Income December 31,			Location of Gain or (Loss) Recognized in Net Income
	2019	2018	2017	
Foreign currency forward contracts	$ (3,662)	$ (8,493)	$ 1,491	Foreign currency loss, net

At December 31, 2019 and 2018, the fair value of derivatives in a net asset position, which includes accrued interest but excludes any adjustments for nonperformance risk, related to these agreements was $0.1 million and $4.7 million, respectively. As of December 31, 2019 and 2018, the Company had not posted any collateral related to these agreements.

Note 19 – Restructuring Costs

In February 2017, the Company announced its plan to transfer its wafer fabrication operation at KFAB to other Company-owned wafer fabrication plants and external foundries. The Company ceased production operations at KFAB late in third quarter 2017, and vacated and returned the premises to the landlord in November 2017. Employees were provided retention and standard severance packages. During 2018 and 2017, the Company received $3.7 million and $6.5 million, respectively of insurance proceeds as a result of the fires sustained at the KFAB facility during 2016. The $3.7 million received in 2018 and $2.0 million received in 2017 were recorded in Other Income. The remaining $4.5 million received in 2017 was recorded in Cost of Goods Sold. There are outstanding insurance claims. Also during 2017, the Company recorded $1.9 million of asset impairment related to the shut-down of KFAB.

The table below sets forth the restructuring costs, recorded in restructuring expense in the Condensed Consolidated Statements of Operations, incurred during the twelve months ended December 31, 2018 and 2017:

	Twelve Months Ended December 31,	
	2018	2017
Early supply contract termination	$ -	$ 1,985
Cost of equipment relocation, shutdown cost and other	220	3,591
Asset retirement obligation	-	1,403
Retention costs	(14)	3,158
	$ 206	$ 10,137

The table below sets forth the costs accrued related to the KFAB restructuring:

	Early Contract Termination		Retention Costs		Equipment Relocation, Shutdown Cost and Other		Total	
Beginning balance, January 1, 2017	$	-	$	-	$	-	$	-
Costs accrued		1,985		3,158		3,591		8,734
Restructuring costs paid		(1,985)		(2,499)		(2,946)		(7,430)
Balance at December 31, 2017		-		659		645		1,304
Costs accrued		-		(14)		526		512
Restructuring costs paid		-		(645)		(1,171)		(1,816)
Balance at December 31, 2018	$	-	$	-	$	-	$	-

Based on continued negotiations with the landlord, we recorded an additional $1.4 million of asset retirement obligations related the KFAB restructuring. This asset retirement obligation is for the estimated amounts to be paid to contractors to remediate the KFAB facility upon vacating the property. The table below sets forth the asset retirement obligation related to the KFAB restructuring:

Asset retirement obligation, January 1, 2017	$	486
Accrual of additional asset retirement obligation		1,403
Amount paid		(1,500)
Asset retirement obligation, December 31, 2017		389
Accrual of additional asset retirement obligation		-
Amount paid		(389)
Asset retirement obligation, December 31, 2018	$	-

In connection with the asset retirement obligation, as of December 31, 2018, the offsetting asset has been fully amortized.

Note 20 – Business Acquisitions

Wafer Fabrication Facility Acquisition

On April 1, 2019, the Company completed the previously announced acquisition of GFAB. The Company recorded the purchase of GFAB as a business acquisition. The Company purchased GFAB in order to increase the Company's wafer production capacity. Total consideration paid by the Company was $33.2 million and was funded by advances under the revolving portion of our long-term credit facility. The facility and assets were wholly acquired, and there is no remaining minority interest. The goodwill will not be tax deductible. The Company also incurred acquisition costs of approximately $0.6 million that were recognized in selling, general and administrative expense. Due to a lack of data we are unable to provide historical financial pro forma data. The table below sets forth the fair value of the assets and liabilities recorded in the GFAB acquisition and the corresponding line item in which the item is recorded in our condensed consolidated balance sheet.

Property, plant and equipment	$	24.4
Inventories		3.6
Prepaid expenses and other		5.2
Goodwill		0.9
Deferred tax liabilities		1.0

LSC Acquisition

In the third quarter of 2019 we entered into a Share Swap Agreement that provides for the acquisition of LSC and its subsidiaries by the Company. At the effective date of the transaction, each share of LSC will be converted into the right to receive TWD $42.50 per share in cash, or approximately US $1.42 per share based on December 31, 2019 exchange rates. The aggregate consideration to be paid by the Company, based on the December 31, 2019 exchange rate, is approximately $437 million. This amount is subject to change, based on the Taiwan dollar to United States dollar exchange rate at closing. The acquisition received LSC shareholder approval on October 25, 2019, and we anticipate completing the acquisition in the second half of 2020, subject to customary closing conditions and regulatory approvals. We expect to fund the purchase price of the transaction primarily with proceeds from a new bank financing arrangement.

Eris Technology Acquisitions

In July 2018, our 51% owned subsidiary, ERIS Technology Corporation (“Eris”), acquired from Yea Shin Technology Corporation ("Yea Shin") and its shareholders 51% of Yea Shin’s outstanding shares for approximately $6.4 million in cash. Yea Shin operates a wafer fabrication facility located in Tao Yuan county, Taiwan that was established in 1993. The purpose of the acquisition is to expand the current wafer production capacity of Eris.

Eris also entered into a property purchase agreement with Yong Xiang Development Corporation (“Yong Xiang”) to purchase the plant and facility leased by it to Yea Shin. The total purchase price of the property is approximately $25.5 million. Eris completed the purchase of the facility in June 2019.

Eris has leased from Yong Xiang the plant and facility until the purchase has been completed. The monthly lease payment is approximately $0.04 million for the first 8.5 months and approximately $0.03 million for the remaining period. .

Note 21 – Selected Quarterly Financial Data (Unaudited)

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
2019				
Net sales	$ 302,293	$ 322,006	$ 323,674	$ 301,157
Gross profit	112,411	121,988	122,046	109,362
Net income attributable to common shareholders	31,716	36,284	38,060	47,190
Earnings per share attributable to common shareholders				
Basic	$ 0.63	$ 0.72	$ 0.75	$ 0.92
Diluted	$ 0.62	$ 0.70	$ 0.73	$ 0.90

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
2018				
Net sales	$ 274,512	$ 304,085	$ 320,946	$ 314,446
Gross profit	98,595	107,268	115,214	114,199
Net income (loss) attributable to common shareholders	18,526	25,068	30,908	29,519
Earnings (loss) per share attributable to common shareholders				
Basic	$ 0.38	$ 0.50	$ 0.62	$ 0.59
Diluted	$ 0.37	$ 0.49	$ 0.61	$ 0.58

Note: The sum of the quarterly earnings per share may not equal the full year amount, as the computations of the weighted average number of common shares outstanding for each quarter and for the full year are performed independently.

Note 22 – Subsequent Event

On February 5, 2020, the Company entered into an agreement to invest up to approximately $14.2 million to acquire up to 51% of Savitech Corporation (“Savitech”). Savitech is a fabless semiconductor design company and is located in Zhubei City, Taiwan. The Company will make the investment in two tranches. The first tranche of approximately $5.6 million will be made as soon as possible pending regulatory approval. The first tranche will provide the Company with approximately 32% ownership of Savitech. The second tranche of approximately $8.6 million will be made in mid-year 2021 and will increase the Company’s ownership to 51% of Savitech. The second tranche of the investment will only be made if Savitech achieves previously agreed-to revenue levels.

INDEX TO EXHIBITS

Number	Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
3.1	Certificate of Incorporation, as amended	10-K	February 20, 2018	3.1	
3.2	Amended By-laws of the Company, amended as of January 6, 2016	8-K	January 11, 2016	3.1	
4.1	Form of Certificate for Common Stock, par value $0.66-2/3 per share	S-3	August 25, 2005	4.1	
4.2	Description of Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934				X
10.1*	Stock Award Agreement dated as of September 22, 2009, between the Company and Keh-Shew Lu	10-Q	May 9, 2014	10.6	
10.2*	Confirmation Agreement dated April 1, 2013, between the Company and Keh-Shew Lu	8-K	April 3, 2013	99.1	
10.3*	Employment Agreement dated as of July 21, 2015, between the Company and Keh-Shew Lu	8-K	July 27, 2015	99.1	
10.4*	Stock Unit Agreement, dated as of July 21, 2015, between the Company and Keh-Shew Lu	8-K	July 27, 2015	99.3	
10.5*	Amendment No. 1 to Employment Agreement dated as of February 22, 2017, between the Company and Keh-Shew Lu.	8-K	February 27, 2017	99.1	
10.6*	Employment agreement dated as of August 29, 2005, between the Company and Mark King	8-K	September 2, 2005	10.2	
10.7*	Separation letter between the Company and Mark King, dated January 11, 2018	10-Q	May 8, 2018	10.1	
10.8*	Separation letter between the Company and Ed Tang, dated January 18, 2018	10-Q	May 8, 2018	10.2	
10.9*	Form of Indemnification Agreement between the Company and its directors and executive officers	8-K	September 2, 2005	10.5	
10.10*	Diodes Incorporated 2001 Omnibus Equity Incentive Plan, as amended and restated December 22, 2008	10-K	February 26, 2009	10.87	
10.11*	Diodes Incorporated Second Amended and Restated Deferred Compensation Plan effective January 1, 2009	10-K	February 27, 2017	10.9	
10.12*	First Amendment to the Diodes Incorporated Second Amended and Restated Deferred Compensation Plan effective June 1, 2013	10-K	February 27, 2017	10.10	
10.13*	Diodes Incorporated 2013 Equity Incentive Plan, as amended and restated on May 3, 2017	S-8	August 17, 2017	99.1	
10.14*	Form of Incentive Stock Option Agreement for the Diodes Incorporated 2013 Equity Incentive Plan	S-8	June 13, 2013	99.2	
10.15*	Form of Stock Unit Agreement for the Diodes Incorporated 2013 Equity Incentive Plan	S-8	June 13, 2013	99.4	

Number	Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
10.15.1*	Form of Restricted Stock Unit Agreement	8-K	February 27, 2017	99.2	
10.15.2*	Form of Performance Stock Unit Agreement	8-K	February 27, 2017	99.3	
10.16*	Form of Nonstatutory Stock Option Agreement for the Diodes Incorporated 2013 Equity Incentive Plan, as amended (Domestic Version)	10-K	February 27, 2014	10.80	
10.17*	Form of Nonstatutory Stock Option Agreement for the Diodes Incorporated 2013 Equity Incentive Plan (International Version)	10-K	February 27, 2014	10.81	
10.18*	Form of Unit Stock Agreement for the Diodes Incorporated 2013 Equity Incentive Plan, as amended (Domestic Version)	10-K	February 27, 2014	10.82	
10.19*	Form of Stock Unit Agreement for the Diodes Incorporated 2013 Equity Incentive Plan (International Version)	10-K	February 27, 2014	10.83	
10.20*	Form of Stock Unit Agreement (Substitute for Pericom Semiconductor Corporation Domestic Existing RSUs and Options)	S-8	June 30, 2016	99.2	
10.21*	Form of Stock Unit Agreement (Substitute for Pericom Semiconductor Corporation International Existing RSUs and Options)	S-8	June 30, 2016	99.3	
10.22	Joint Venture Agreement dated as of March 18, 1996, between the Company and J.H. Xing	10-K	April 1, 1996	10.17	
10.23	Sale and Leasing Agreement dated as of March 30, 2002, between Shanghai Kaihong Electronic Ltd. and Shanghai Ding Hong Electronics Company, Ltd.	10-Q	May 15, 2002	10.46	
10.24	Lease Agreement dated as of March 30, 2002, between Shanghai Kaihong Electronic Company, Ltd. and Shanghai Ding Hong Electronic Equipment, Ltd.	10-Q	May 15, 2002	10.47	
10.25	Lease Agreement dated as of September 30, 2003, between Shanghai Kaihong Electronic Co., Ltd. and Shanghai Ding Hong Electronic Equipment, LTD.	10-Q	August 9, 2004	10.52	
10.25.1	Supplementary to the Lease Agreement between Shanghai Kaihong Electronic Co. Ltd., and Shanghai Ding Hong Electronic Co., Ltd.	10-Q	August 9, 2004	10.58	
10.26	Amendment to the Sale and Lease Agreement, dated as of September 30, 2004, between Shanghai Ding Hong Electronic Equipment Ltd. and Shanghai Kai Hong Electronic Company, Limited	10-Q	August 9, 2004	10.56	
10.27	Lease Agreement dated as of June 28, 2004, between Diodes Shanghai Co., Ltd. and Shanghai Yuan Hao Electronic Co., Ltd.	10-Q	August 9, 2004	10.57	

Number	Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
10.27.1	Supplement to Lease Agreement dated January 1, 2007, for Disposal of Waste and Scraps, between Shanghai Kai Hong Technology Co., Ltd. and Shanghai Yuan Hao Electronic Co., Ltd.	10-K	February 29, 2008	10.50	
10.27.2	Supplementary Agreement dated December 31, 2007, between Shanghai Kai Hong Technology Co., Ltd. and Shanghai Yuan Hao Electronic Co., Ltd.	10-K	February 29, 2008	10.53	
10.28	Wafer Purchase Agreement dated January 10, 2006, between Anachip Corporation and Lite-On Semiconductor Corporation	8-K	January 12, 2006	2.1	
10.29	Supplementary to the Lease Agreement dated September 5, 2004, between Shanghai Kaihong Electronic Co., Ltd. and Shanghai Ding Hong Electronic Co., Ltd.	10-Q	May 10, 2006	10.14	
10.30	Supplementary to the Lease Agreement dated June 28, 2004, between Diodes Shanghai Company Limited and Shanghai Yuan Hao Electronic Co., Ltd.	10-Q	May 10, 2006	10.15	
10.31	Agreement on Application, Construction and Transfer of Power Facilities dated as of March 15, 2006, between the Company and Shanghai Yahong Electronic Co., Ltd.	10-Q	May 10, 2006	10.16	
10.32	Supplement dated January 1, 2007 to the Lease Agreement on Disposal of Waste and Scraps, between Shanghai Kaihong Electronic Co., Ltd. and Shanghai Ding Hong Electronic Co., Ltd.	10-K	February 29, 2008	10.51	
10.33	Accommodation Building Fourth and Fifth Floor Lease Agreement dated December 31, 2007, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Ding Hong Electronic Co., Ltd.	10-K	February 29, 2008	10.54	
10.34	Fourth Floor of the Accommodation Building Lease Agreement dated January 1, 2008, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Ding Hong Electronic Co., Ltd.	10-Q	August 11, 2008	10.5	
10.35	Factory Building Lease Agreement dated March 1, 2008, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Yuan Hao Electronic Co. Ltd.	10-Q	August 11, 2008	10.6	
10.36	Supplemental Agreement to the Factory Building Lease Agreement dated as of August 11, 2008, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Yuan Hao Electronic Co., Ltd.	10-Q	November 7, 2008	10.2	
10.37	Distributorship Agreement dated November 1, 2008, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Keylink Logistic Co., Ltd.	10-K	February 26, 2009	10.83	
10.38	Lease Facility Safety Management Agreement dated December 31, 2008, between Diodes	10-K	February 26, 2009	10.84	

Number	Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
	Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Yuan Howe Electronic Co., Ltd.				
10.39	Second Supplemental Agreement to the Factory Building Lease Agreement dated August 19, 2009, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Yuan Hao Electronic Co., Ltd.	10-Q	November 6, 2009	10.1	
10.40	Consulting Agreement dated January 1, 2009, between the Company and Keylink International (B.V.I.) Co., Ltd.	10-Q	May 8, 2009	10.1	
10.41	Power Facility Construction Agreement dated October 29, 2009, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Yuan Hao Electronic Co., Ltd.	10-K	March 1, 2010	10.97	
10.42	First Amendment to the DSH #2 Building Lease Agreement dated December 31, 2009, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Yuan Howe Electronics Co., Ltd.	10-K	March 1, 2010	10.98	
10.43	Construction Project Contract effective December 31, 2009, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Yuan Howe Electronic Co., Ltd.	10-Q	May 7, 2010	10.2	
10.43.2	Third Floor of the Accommodation Building Lease Agreement dated April 12, 2010, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Ding Hong Electronic Co., Ltd.	10-Q	May 7, 2010	10.3	
10.44	Second Floor of the Accommodation Building Lease Agreement dated September 1, 2010, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Ding Hong Electronic Company, Ltd.	10-Q	November 9, 2010	10.1	
10.45	Investment Cooperation Agreement effective as of September 10, 2010, between Diodes Hong Kong Holding Company Limited and the Management Committee of the Chengdu Hi-Tech Industrial Development Zone	8-K	September 16, 2010	99.1	
10.46	Supplementary Agreement to the Investment Cooperation Agreement effective as of September 10, 2010, between Diodes Hong Kong Holding Company Limited and the Management Committee of the Chengdu Hi-Tech Industrial Development Zone	8-K	September 16, 2010	99.2	
10.47	Joint Venture Agreement effective as of November 5, 2010, between Diodes Hong Kong Holding Company Limited and Chengdu Ya Guang Electronic Company Limited	8-K	November 12, 2010	99.1	
10.48	Joint Venture Agreement Supplement Concerning the Establishment of Diodes Technology (Chengdu) Company Limited	8-K	November 12, 2010	99.2	

Number	Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
	effective as of November 5, 2010, between Diodes Hong Kong Holding Company Limited and Chengdu Ya Guang Electronic Company Limited				
10.49	Second Amendment to the DSH #2 Building Lease Agreement dated November 15, 2010, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Yuan Howe Electronics Company, Ltd.	10-K	February 28, 2011	10.112	
10.50	Power Facility Expansion Construction Contract dated January 24, 2011, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Yuan Howe Electronics Company, Ltd.	10-K	February 28, 2011	10.113	
10.51	First Floor of the Accommodation Building Agreement dated June 1, 2011, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Ding Hong Electronic Company, Ltd.	10-Q	November 9, 2011	10.1	
10.52	Third Floor of the Dormitory Building Lease Agreement dated July 1, 2011, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Ding Hong Electronic Company, Ltd.	10-Q	November 9, 2011	10.2	
10.53	Third Supplemental Agreement to the Factory Building Lease Agreement dated May 16, 2011, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Yuan Hao Electronic Company, Ltd.	10-Q	November 9, 2011	10.3	
10.54	Supplement Agreement to the Power Facility Construction Application Agreement dated March 21, 2011, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Yuan Hao Electronic Company, Ltd.	10-Q	August 9, 2011	10.1	
10.55	Plating Process Agreement dated December 31, 2007, among Shanghai Kaihong Electronic Co., Ltd., Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology), Diodes Shanghai, Shanghai Ding Hong Electronic Co., Ltd. and Shanghai Micro-Surface Co., Ltd.	10-K	February 29, 2008	10.52	
10.56	Construction Design Consulting Agreement dated April 1, 2011, between Diodes Technology (Chengdu) Company Limited and Lite-On Technology Corporation	10-Q	August 9, 2012	10.1	
10.57	Second Supplementary Agreement dated as of January 23, 2013, to the Investment Cooperation Agreement effective as of September 10, 2010, among Diodes Hong Kong Holding Company Limited, Diodes (Shanghai) Investment Company Limited, Diodes Technology (Chengdu) Company Limited, and the Management Committee of the Chengdu Hi-Tech Industrial Development Zone	10-K	February 27, 2013	10.75	

Number	Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
10.58	DSH #2 Building Lease Agreement dated as of January 28, 2013, between Diodes Shanghai Co., Ltd. (a/k/a Shanghai Kaihong Technology) and Shanghai Yuan Howe Electronics Co., Ltd.	10-K	February 27, 2013	10.76	
10.59	Supplement Agreement to Lease Agreement dated September 2013, between Shanghai Kaihong Electronic Co., Ltd and Shanghai Ding Hong Electronic Co., Ltd.	10-Q	November 12, 2013	10.6	
10.60	Amendment to Dinghong Building Lease Agreements between Shanghai Kaihong Electronic Co. Ltd. and Shanghai Dinghong Electronic Co., Ltd.	10-Q	November 6, 2018	10.2	
10.61	Termination Agreement to Dinghong Male Dorm Building Lease Agreement between Shanghai Kaihong Electronic Co. Ltd. and Shanghai Dinghong Electronic Co., Ltd.	10-Q	November 6, 2018	10.4	
10.62	Termination Agreement to Dinghong Female Dorm Building Lease Agreement between Shanghai Kaihong Electronic Technology Co. Limited and Shanghai Dinghong Electronic Co. Ltd.	10-Q	November 6, 2018	10.5	
10.63	Power Account Transfer Agreement between Shanghai Kaihong Technology Company Limited and Shanghai YuanHao Co.	10-Q	November 6, 2018	10.6	
10.64	Construction Design Consulting Assignment Agreement Supplemental Agreement, between Diodes Technology (Chengdu) Company Limited and Lite-On Technology Corporation	10-Q	August 8, 2013	10.1	
10.65	Procurement Agreement dated May 3, 2013, between Diodes Taiwan Inc. and Lite-On Technology Corporation	10-Q	August 8, 2013	10.2	
10.66	Share Transfer Memorandum of Understanding dated June 18, 2013, among the Company, Chengdu Ya Guang Electronic Engineering Factory and Zetex Chengdu Electronics Limited	10-Q	August 8, 2013	10.3	
10.67	Plating Process Agreement dated February 8, 2013, between Zetex (Chengdu) Electronic Company Limited and Diodes Technology (Chengdu) Company Limited	10-Q	May 10, 2013	10.1	
10.68	Equity Transfer Agreement dated April 2014, between Chengdu Ya Guang Electronic Engineering Factory and Diodes (Shanghai) Investment Company Limited	10-Q	May 9, 2014	10.1	
10.69	Equity Transfer Agreement Amendment dated April 2014, between Chengdu Ya Guang Electronic Engineering Factory and Diodes (Shanghai) Investment Company Limited	10-Q	May 9, 2014	10.2	
10.70	Fourth Supplemental Agreement to the Factory Building Lease Agreement dated April 23, 2014, between Shanghai Kaihong Technology Co., Ltd. and Shanghai Yuan Hao Electronic Co., Ltd.	10-Q	May 9, 2014	10.3	

Number	Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
10.71	Plating Processing Agreement dated February 28, 2014, between Zetex (Chengdu) Electronic Company Limited and Diodes Technology (Chengdu) Company Limited	10-Q	May 9, 2014	10.4	
10.72	Amended Consulting Agreement dated as of January 1, 2015, between Diodes Incorporated and Keylink International (B.V.I) Co., Ltd.	10-K	March 2, 2015	10.78	
10.73	Chemical Warehouse Lease Agreement dated November 1, 2014, between Shanghai Kaihong Electronic Co., Ltd. and Shanghai Ding Hong Electronic Co., Ltd.	10-K	March 2, 2015	10.79	
10.74	Chemical Warehouse Lease Agreement dated September 22, 2015, between Shanghai Kaihong Technology Co., Ltd. and Shanghai Yuan Hao Electronic Co., Ltd.	10-Q	November 6, 2015	10.1	
10.75	Amendment to Yuanhao Building Lease Agreements between Shanghai Kaihong Technology Company Limited and Shanghai Yuanhao Electronic Co. Ltd	10-Q	November 6, 2018	10.3	
10.76	Fifth Supplemental Facility Lease Agreement dated February 1, 2015, between Shanghai Kaihong Technology Co., Ltd. and Shanghai Yuan Hao Electronic Co., Ltd.	10-Q	November 6, 2015	10.2	
10.77	Property Lease Safety Agreement dated July 2016, between Zetex (Chengdu) Electronics Ltd. and Chengdu Yaguang Electronic Co., Ltd.	10-Q	August 9, 2016	99.1	
10.78	Property Lease Agreement dated July 2016, between Zetex (Chengdu) Electronics Ltd. and Chengdu Yaguang Electronic Co., Ltd.	10-Q	August 9, 2016	99.2	
10.79	2016 Amendment to Joint Venture Agreement effective as of December 7, 2016, between Diodes (Shanghai) Investment Company Limited and Chengdu Ya Guang Electronic Company Limited	8-K	December 13, 2016	99.1	
10.80	Diodes Zetex Pension Scheme Recovery Plan dated February 22, 2017, between Trustees of the Diodes Zetex Pension Scheme and Diodes Zetex Limited	10-K	February 27, 2017	10.78	
10.81	Diodes Zetex Pension Scheme Schedule of Contributions dated February 22, 2017, between Trustees of the Diodes Zetex Pension Scheme and Diodes Zetex Limited	10-K	February 27, 2017	10.79	
10.82	Framework Agreement dated January 16, 2017, among Diodes Zetex Limited, Diodes Zetex Semiconductors Limited, the Company, HR Trustees Limited and Trustees	10-K	February 27, 2017	10.80	
10.83	Guarantee dated March 26, 2012, among Diodes Zetex Semiconductors Limited, Diodes Zetex Limited, HR Trustees Limited and Trustees	10-Q	August 9, 2012	10.5	

Number	Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
10.84	Diodes Zetex Pension Scheme Information Protocol dated April 10, 2012, among Diodes Zetex Limited, Diodes Zetex Semiconductors Limited, the Company, HR Trustees Limited and Trustees	10-Q	August 9, 2012	10.6	
10.85	Legal Charge dated March 26, 2012, among Zetex Semiconductors Limited, HR Trustees Limited and Trustees	10-Q	August 9, 2012	10.7	
10.86	Credit Agreement dated March 21, 2011, between Mega International Commercial Bank and Diodes Taiwan Inc.	10-Q	August 9, 2011	10.2	
10.87	Amended and Restated Credit Agreement dated October 26, 2016, among the Company, Diodes International B.V., Diodes Holding B.V., Diodes Investment Company, Diodes FabTech Inc., Diodes Holdings UK Limited, Diodes Zetex Limited, Pericom Semiconductor Corporation, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, and the other Lenders party thereto	8-K	November 1, 2016	10.1	
10.87.1	Amendment No. 1 and Limited Waiver dated February 13, 2017, among the parties to the Amended and Restated Credit Agreement dated October 26, 2016 (Exhibit 10.87 above)	8-K	February 14, 2017	10.1	
10.87.2	Amendment No. 2 dated August 24, 2017, among the parties to the Amended and Restated Credit Agreement dated October 26, 2016 (Exhibit 10.87 above)	10-K	February 20, 2018	10.80.2	
10.88	Consent to Credit Agreement	10-Q	November 6, 2018	10.1	
10.89	Consent and Amendment No. 3 to Amended and Restated Credit Agreement dated December 27, 2018, among the parties to the Amended and Restated Credit Agreement dated October 26, 2016 (Exhibit 87 above)	10-K	February 21, 2019	10.89	
10.90*	Transition agreement between Diodes Incorporated and Richard White	8-K	March 6, 2019	10.1	
10.91*	Amended Transition Agreement between Diodes Incorporated and Richard White	8-K/A	April 1, 2019	10.1	
10.92	Consent to Credit Agreement	10-Q	May 7, 2019	10.1	
10.93	Consent to Credit Agreement	10-Q	August 5, 2019	10.1	
10.94	Share Swap Agreement between Diodes Incorporated and Lite-On Semiconductor Corp. dated as of August 8, 2019	8-K	August 9, 2019	2.1	
14**	Code of Ethics for Chief Executive Officer and Senior Financial Officers				
21	Subsidiaries of the Registrant				X
23.1	Consent of Independent Registered Public Accounting Firm				X

Number	Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
31.1	Certification Pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, adopted pursuant to Section 302 of the Sarbanes- Oxley Act of 2002				X
31.2	Certification Pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				X
32.1***	Certification Pursuant to 18 U.S.C. adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				X
32.2***	Certification Pursuant to 18 U.S.C. adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				X
101.INS	Inline XBRL Instance Document- the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.				X
101.SCH	Inline XBRL Taxonomy Extension Schema				X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase				X
101.LAB	Inline XBRL Taxonomy Extension Labels Linkbase				X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase				X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase				X
*	Constitute management contracts, or compensatory plans or arrangements, which are required to be filed pursuant to Item 601 of Regulation S-K.				X
**	Provided in the Corporate Governance portion of the Investor Relations section of the Company's website at http://www.diodes.com				X
***	A certification furnished pursuant to Item 601 of the Regulation S-K will not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liability of that section. Such certification will not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent that the registrant specifically incorporates it by reference.				X

PLEASE NOTE: It is inappropriate for investors to assume the accuracy of any covenants, representations or warranties that may be contained in agreements or other documents filed as exhibits to this Annual Report on Form 10-K. In certain instances the disclosure schedules to such agreements or documents contain information that modifies, qualifies and creates exceptions to the representations, warranties and covenants. Moreover, some of the representations and warranties may not be complete or accurate as of a particular date because they are subject to a contractual standard of materiality that is different from those generally applicable to stockholders or were used for the purpose of allocating risk among the parties rather than establishing certain matters as facts. Accordingly, you should not rely on the representations and warranties as characterizations of the actual state of facts at the time they were made or otherwise.

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.

DIODES INCORPORATED (Registrant)

By: /s/ Keh-Shew Lu KEH-SHEW LU President and Chief Executive Officer (Principal Executive Officer)	February 11, 2020
By: /s/ Brett R. Whitmire Brett R. Whitmire Chief Financial Officer (Principal Financial and Accounting Officer)	February 11, 2020

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Dr. Keh-Shew Lu, President and Chief Executive Officer, and Brett R. Whitmire, Chief Financial Officer, his true and lawful attorneys-in-fact and agents, with full power of substitution, to sign and execute on behalf of the undersigned any and all amendments to this report, and to perform any acts necessary in order 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 full power and authority to do and perform each and every act and thing requested and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agents, or their or his or her substitutes, shall 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 indicated on February 11, 2020.

/s/ Keh-Shew Lu
KEH-SHEW LU
President and Chief Executive Officer
(Principal Executive Officer)

/s/ Brett R. Whitmire
Brett R. Whitmire
Chief Financial Officer
(Principal Financial Officer)

/s/ Raymond K. Y. Soong RAYMOND K. Y. SOONG Chairman of the Board of Directors	/s/ Keh-Shew Lu KEH-SHEW LU Director
/s/ C.H. Chen C.H. CHEN Director	/s/ Michael K. C. Tsai MICHAEL K.C. TSAI Director
/s/ Michael R. Giordano MICHAEL R. GIORDANO Director	/s/ Christina Wen-Chi Sung CHRISTINA WEN-CHI SUNG Director
/s/ Peter M. Menard PETER M. MENARD Director	

Exhibit 21

SUBSIDIARIES OF THE REGISTRANT

Subsidiary Name	Incorporated Location	Holding Company (1) or Subsidiary (2)	Percentage Owned
Azer (BVI) Crystal Technology Co., Ltd.	British Virgin Islands	2	100%
BCD Shanghai Micro-Electronics Company Limited	China	2	100%
BCD Semiconductor Manufacturing Limited	Cayman Islands	1	100%
Canyon Semiconductor Inc.	Taiwan	2	50.98%
Diodes (Shanghai) Investment Company Limited	China	1	100%
Diodes Electronic (Shenzhen) Company Limited	China	2	100%
Diodes Fast Analog Solutions Limited	United Kingdom	2	100%
Diodes Holding B.V	Netherlands	1	100%
Diodes Holdings UK Limited	United Kingdom	1	100%
Diodes Hong Kong Limited	Hong Kong	1	100%
Diodes Japan K.K.	Japan	2	100%
Diodes Kaihong (Shanghai) Company Limited	China	2	100%
Diodes Korea Inc	Korea	2	100%
Diodes Semiconductors GB Limited	United Kingdom	2	100%
Diodes Taiwan S.a. r.l	Luxembourg	1	100%
Diodes Taiwan S.a. r.l., Taiwan Branch (Luxembourg)	Taiwan	2	100%
Diodes Technologies Taiwan Co., Ltd.	Taiwan	2	100%
Diodes Technology (Chengdu) Company Limited	China	2	98.02%
Diodes Zetex GmbH	Germany	2	100%
Diodes Zetex Limited	United Kingdom	2	100%
Diodes Zetex Neuhaus GmbH	Germany	2	100%
Diodes Zetex Semiconductors Limited	United Kingdom	2	100%
Eris Technology Corporation	Taiwan	2	51.07%
Jiyuan Crystal Photoelectric Frequency Technology Co. Ltd.	China	2	49%
Pericom Technology (Shanghai) Company Limited	China	2	100%
Pericom Technology (Yangzhou) Corporation	China	2	100%
Pericom Technology Inc. (BVI).	British Virgin Islands	1	100%
PSE Technology (Shandong) Corporation	China	2	100%
PSE Technology Corporation	Taiwan	2	100%
PTI Limited.	Hong Kong	2	100%
Shanghai Kaihong Electronic Company Limited	China	2	95%
Shanghai Kaihong Technology Company Limited	China	2	95%
SIM-BCD Semiconductor Manufacturing Co. Ltd.	China	2	100%
TF Semiconductor Solutions, Inc	Delaware	2	67.60%
Zetex (Chengdu) Electronics Limited	China	2	95%

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements of Diodes Incorporated of our report dated February 11, 2020, related to the consolidated financial statements of Diodes Incorporated and Subsidiaries (the "Company") (which report expresses an unqualified opinion and includes an explanatory paragraph relating to a change in the method of accounting for leases) and the effectiveness of internal control over financial reporting of the Company appearing in this Annual Report on Form 10-K for the year ended December 31, 2019:

- Registration Statements on Form S-8 (No. 333-106775, No. 333-124809 and No. 333-189299) pertaining to the 2001 Omnibus Equity Incentive Plan of Diodes Incorporated; and
- Registration Statements on Form S-8 (No. 333-189298, No. 333-212327 and No. 333-220019) pertaining to the Diodes Incorporated 2013 Equity Incentive Plan.

/s/ Moss Adams LLP

Los Angeles, California
February 11, 2020

Exhibit 31.1

CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, **Keh-Shew Lu**, certify that:

1. I have reviewed this Annual Report on Form 10-K of Diodes Incorporated;

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.

/s/ Keh-Shew Lu
Keh-Shew Lu
Chief Executive Officer
Date: February 11, 2020

Exhibit 31.2

CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, **Brett R. Whitmire**, certify that:

1.I have reviewed this Annual Report on Form 10-K of Diodes Incorporated;

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.

/s/ Brett R. Whitmire
Brett R. Whitmire
Chief Financial Officer
Date: February 11, 2020

Exhibit 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. 1350 ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

The undersigned hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to his knowledge, the Annual Report on Form 10-K for the twelve-month period ended December 31, 2019, of Diodes Incorporated (the "Company") fully complies with the requirements of Sections 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and that the information contained in such Annual Report fairly presents, in all material respects, the financial condition and results of operations of the Company as of, and for, the periods presented in such report.

/s/ Keh-Shew Lu
Keh-Shew Lu
Chief Executive Officer
Date: February 11, 2020

A signed original of this written statement required by Section 906 has been provided to Diodes Incorporated and will be retained by Diodes Incorporated and furnished to the Securities and Exchange Commission or its staff upon request.

Exhibit 32.2

CERTIFICATION PURSUANT TO 18 U.S.C. 1350 ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

The undersigned hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to his knowledge, the Annual Report on Form 10-K for the twelve-month period ended December 31, 2019, of Diodes Incorporated (the "Company") fully complies with the requirements of Sections 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and that the information contained in such Annual Report fairly presents, in all material respects, the financial condition and results of operations of the Company as of, and for, the periods presented in such report.

/s/ Brett R. Whitmire
Brett R. Whitmire
Chief Financial Officer
Date: February 11, 2020

A signed original of this written statement required by Section 906 has been provided to Diodes Incorporated and will be retained by Diodes Incorporated and furnished to the Securities and Exchange Commission or its staff upon request.

Additional Information
CONSOLIDATED RECONCILIATION OF NET INCOME TO ADJUSTED NET INCOME
(unaudited)

	(in thousands, except per share data)				
	2019	2018	2017	2016	2015
GAAP net income (loss) - common stockholders	**$ 153,250**	$ 104,021	$ (1,805)	$ 15,935	$ 24,274
GAAP earnings (loss) per share - common stockholders Diluted	**$ 2.96**	$ 2.04	$ (0.04)	$ 0.32	$ 0.49
Adjustments to reconcile net income (loss) - common stockholders to adjusted net income - common stockholders, net of tax:					
Amortization of acquisition related intangible assets	**14,779**	15,032	15,201	16,595	6,870
Acquisition related costs	**1,314**	-	-	182	971
Land sale inspection fees	**(336)**	-	-	-	-
Gain on land sale	**(19,201)**	-	-	-	-
Loss on impairment	**1,283**	-	1,214	-	1,250
Officer retirement	**-**	2,014	-	-	-
Restructuring costs	**-**	194	6,589	-	-
Impact of Tax Cuts and Jobs Act	**-**	-	45,908	-	-
Shut-down related costs	**-**	-	1,769	-	-
Retention costs	**-**	-	229	952	156
Loss of sale of assets	**-**	-	16	-	-
Inventory adjustments and valuations	**-**	-	-	2,907	2,907
Impairment of cost-basis investment	**-**	-	-	2,092	-
Employee award costs	**-**	-	-	(282)	5,498
Severance costs	**-**	-	-	-	419
Adjusted net income - common stockholders (Non-GAAP)	$ 151,089	$ 121,261	$ 69,121	$ 38,381	$ 42,345
Diluted shares used in computing earnings per share	**51,860**	50,935	50,340	49,789	49,500
Adjusted earnings per share - common stockholders (Non-GAAP) Diluted	**$ 2.91**	**$ 2.38**	**$ 1.37**	**$ 0.77**	$ 0.86

ADJUSTED NET INCOME AND ADJUSTED EARNINGS PER SHARE

The Company's financial statements present net income and earnings per share that are calculated using accounting principles generally accepted in the United States ("GAAP"). The Company's management makes adjustments to the GAAP measures that it feels are necessary to allow investors and other readers of the Company's financial releases to view the Company's operating results as viewed by the Company's management, board of directors and research analysts in the semiconductor industry. These non-GAAP measures are not prepared in accordance with, and should not be considered alternatives or necessarily superior to, GAAP financial data and may be different from non-GAAP measures used by other companies. Because non-GAAP financial measures are not standardized, it may not be possible to compare these financial measures with other companies' non-GAAP financial measures, even if they have similar names. The explanation of the adjustments made in the table above, are set forth below:

Detail of non-GAAP adjustments

Amortization of acquisition-related intangible assets – The Company excluded this item, including amortization of developed technologies and customer relationships. The fair value of the acquisition-related intangible assets is amortized using straight-line methods which approximate the proportion of future cash flows estimated to be generated each period over the estimated useful life of the applicable assets. The Company believes that exclusion of this item is appropriate because a significant portion of the purchase price for its acquisitions was allocated to the intangible assets that have short lives and exclusion of the amortization expense allows comparisons of operating results that are consistent over time for both the Company's newly acquired and long-held businesses. In addition, the Company excluded this item because there is significant variability and unpredictability among companies with respect to this expense.

Additional Information – (Continued)
CONSOLIDATED RECONCILIATION OF NET INCOME TO ADJUSTED NET INCOME
(unaudited)

Acquisition related costs – The Company excluded expenses associated with the acquisition of Lite-On Semiconductor and Pericom, which consisted of advisory, legal and other professional and consulting fees. These costs were expensed as they were incurred and as services were received, and in which the corresponding tax adjustments were made for the non-deductible portions of these expenses. The Company believes the exclusion of the acquisition related costs provides investors with a more accurate reflection of costs likely to be incurred in the absence of an unusual event such as an acquisition and facilitates comparisons with the results of other periods that may not reflect such costs.

Land sale inspection extension fee – The Company excluded receipt of inspection extension fees related to the sale of the land located in Plano, TX. This fee is paid by the land purchaser for the right to extend the sale close date, and the fee is not applied to the purchase price. The Company feels it is appropriate to exclude these fees since they don't represent ongoing operating income and their exclusion will present investors with a more accurate indication of our continuing operations.

Gain on land sale – The Company excluded the gain related to the sale of the land located in Plano, TX during December 2019. The Company feels it is appropriate to exclude this gain since they don't represent ongoing operating income and their exclusion will present investors with a more accurate indication of our continuing operations.

Loss on impairment – In 2019, the Company excluded an impairment loss recognized related to intangible assets previously acquired from TFSS and in 2017 excluded an impairment loss recognized on long-lived assets there were impaired as a result of the shutdown of our wafer fabrication facility located in Lee's Summit, MO ("KFAB"). During 2015, the Company excluded costs accrued for impairment of long-lived assets related to assets that will no longer be used in our production process as we transition from six inch to eight inch production capability in our China wafer plant. The Company feels it is appropriate to exclude this impairment loss since they don't represent ongoing operating expenses and will present investors with a more accurate indication of our continuing operations.

Officer retirement – In 2018, the Company excluded costs related to the retirement of two executives. These costs represent cash payments and the accelerated vesting of previously issued stock awards. The Company feels it is appropriate to exclude these costs since they don't represent ongoing operating expenses and will present investors with a more accurate indication of our continuing operations.

Restructuring costs - The Company has recorded restructuring charges related to the shutdown and relocation of KFAB. These restructuring charges are excluded from management's assessment of the Company's operating performance. The Company believes the exclusion of the restructuring charges provides investors an enhanced view of the cost structure of the Company's operations and facilitates comparisons with the results of other periods that may not reflect such charges or may reflect different levels of such charges.

Impact of Tax Cuts and Job Act – The Company has recorded increased tax expense related to the Tax Cuts and Job Act ("TCJA") law that was enacted during December 2017. The TCJA expense has been excluded from management's assessment of the Company's current period operating performance in order to facilitate comparisons with previously presented periods that do not reflect such expense.

Shut-down related costs – The Company has recorded shut-down related costs due to the shutdown and relocation of KFAB. These shut-down related costs are excluded from management's assessment of the Company's operating performance. The Company believes the exclusion of the shut-down related costs provides investors with a more accurate reflection of the continuing operations of the Company and facilitates comparisons with the results of other periods which may not reflect such costs.

Retention costs – The Company excluded costs related to the employee retention plans in connection with the KFAB shutdown and the Pericom acquisitions. Although in some cases these retention costs will be recurring every quarter until the final retention payment has been made, they are not part of the employees' normal annual salaries and therefore are being excluded. The Company believes the exclusion of retention costs related to the KFAB shutdown and the acquisitions provides investors with a more accurate reflection of costs likely to be incurred in the absence of an unusual event such as an acquisition and facilitates comparisons with the results of other periods that may not reflect such costs.

Loss on sale of assets – During 2017, the Company experienced a loss on the sale of assets related to the shutdown of KFAB. The Company believes exclusion of this loss provides investors an enhanced view of the Company's operations and facilitates comparisons with other periods in which such a loss is not present.

Inventory adjustments and valuations – In 2016 and 2015, the Company adjusted the inventory acquired in the Pericom acquisition to account for the reasonable profit allowance for the selling effort on finished goods inventory and the reasonable profit allowance for the completing and selling effort on the work–in-progress inventory. This non-cash adjustment to inventory is not recurring in nature; however it could be recurring to the extent there are additional acquisitions. The Company believes the exclusion of the Pericom inventory adjustment and valuation provides investors with a more accurate reflection of costs likely to be incurred in the absence of an unusual event such as an acquisition and facilitates comparisons with the results of other periods that may not reflect such costs.

Impairment of cost-basis investment – The Company adjusted for costs related to the non-cash impairment of equity investments that the company made that are not related to the Company's operations. The Company feels the exclusion of the expense related to the write-down of these investments provides investors a more accurate reflection of the continuing operations of the Company and facilitates comparisons with the results of other periods that may not reflect such expenses.

Employee award costs – The Company adjusted for costs related to the immediate vesting of Pericom equity awards upon closing of the Pericom acquisition. The expense for these awards was recognized immediately after the acquisition and the Company believes adjusting for the one-time expense related to the immediate vesting of these awards provides investors with a more accurate reflection of the continuing operations of the Company and facilitates comparisons with the results of other periods that may not reflect such costs.

Severance costs – The Company excluded severance costs incurred during 2015. These one-time costs will reduce the Company's cost structure in order to enhance operating effectiveness and improve profitability. These charges are excluded from management's assessment of the Company's operating performance. The Company believes the exclusion of the severance charges provides investors an enhanced view of the cost structure of the Company's operations and facilitates comparisons with the results of other periods that may not reflect such charges or may reflect different levels of such charges.

[THIS PAGE INTENTIONALLY LEFT BLANK]

[THIS PAGE INTENTIONALLY LEFT BLANK]

CORPORATE INFORMATION

BOARD OF DIRECTORS

RAYMOND K.Y. SOONG [2C, 3C, 4]
Chairman of the Board,
Diodes Incorporated
Chairman of the Board,
Lite-On Technology Corporation
Chairman of the Board,
Lite-On Semiconductor Corporation
Chairman of the Board,
Co-Tech Development Corporation
Chairman of the Board,
Silitech Technology Corporation
Director since 1993

C.H. CHEN [4C]
Vice Chairman,
Diodes Incorporated
Vice Chairman,
Lite-On Semiconductor Corporation
Board Member,
Lite-On Technology Corporation
Director since 2000

MICHAEL R. GIORDANO [1CF]
Associate Director,
Senior Wealth Strategy Associate,
UBS Financial Services, Inc.
Director since 1990

DR. KEH-SHEW LU [4]
President & Chief Executive Officer,
Diodes Incorporated
Former, Senior Vice President,
Texas Instruments, Inc.
Director since 2001

PETER M. MENARD [1, 3]
Retired Securities Lawyer
Director since 2017

CHRISTINA WEN-CHI SUNG [1, 2]
Former, Chairman,
Taipei Financial Center Corporation
Director since 2017

MICHAEL K.C. TSAI [2, 3]
Chairman,
AP Memory Technology Corp.
Vice Chairman,
Powerchip Semiconductor Manufacturing Corp.
Director since 2010

1 – Audit Committee Member
2 – Compensation Committee Member
3 – Governance and Stockholder Relations Committee Member
4 – Risk Oversight Committee Member
C – Committee Chair
F – Audit Committe Financial Expert

EXECUTIVE OFFICERS

DR. KEH-SHEW LU
President & Chief Executive Officer
Employee since 2005

BRETT R. WHITMIRE
Chief Financial Officer
Employee since 2014

JULIE HOLLAND
Vice President,
Corporate Operations
Employee since 2008

FRANCIS TANG
Vice President,
Worldwide Discrete Products
Employee since 2006

EMILY YANG
Vice President,
Worldwide Sales & Marketing
Employee since 2015

EVAN YU
Vice President,
Worldwide Analog Products
Employee since 2008

SHAREHOLDER INFORMATION

Diodes Incorporated common stock is listed on the Nasdaq Global Select Market (Nasdaq-GS: **DIOD**).

Calendar Ended	Closing Sales Price of Common Stock	
2019	**High**	**Low**
Fourth Quarter	$ 56.37	$ 39.09
Third Quarter	43.24	35.25
Second Quarter	39.20	30.93
First Quarter	43.29	30.15
2018		
Fourth Quarter	$ 35.60	$ 27.87
Third Quarter	38.90	32.69
Second Quarter	37.32	28.55
First Quarter	33.14	26.39

ANNUAL REPORT ON FORM 10-K

A copy of the Company Annual Report on Form 10-K and other publicly filed reports, as filed with the United States Securities and Exchange Commission, are available at **www.diodes.com** or www.sec.gov or upon request of:

INVESTOR RELATIONS

Shelton Group
Contact: Leanne Sievers
19800 MacArthur Blvd., Suite 300
Irvine, California 92612
949-224-3874
LSievers@SheltonGroup.com

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Moss Adams LLP
10960 Wilshire Blvd., Suite 1100
Los Angeles, California 90024

TRANSFER AGENT & REGISTRAR

Continental Stock Transfer & Trust Company
17 Battery Place, 8th Floor
New York, New York 10004
212-509-4000

FINANCIAL INFORMATION ONLINE

World Wide Web users can access Company information on the Diodes Incorporated Investor page at **www.investor.diodes.com**.

DIODES
INCORPORATED

DIODES INCORPORATED
Corporate Headquarters
4949 Hedgcoxe Road
Suite 200
Plano, Texas 75024
972.987.3900

AMERICA SALES
Plano, Texas, United States
Milpitas, California, United States

ASIA SALES
Shanghai, China
Shenzhen, China
Tokyo, Japan
Seongnam-si, South Korea
Suwon, South Korea
Taipei, Taiwan

EUROPE SALES
Munich, Germany

MANUFACTURING FACILITIES
Chengdu, China (2)
Shanghai, China (4)
Oldham, England
Neuhaus, Germany
Greenock, Scotland

DIODES INCORPORATED
Registered to UL DQS
Certificate Registration No. 10002233
QM08

www.diodes.com
Nasdaq-GS: DIOD