DIODES INC /DEL/
Form 10-K
February 20, 2018

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, 2017

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	(I.R.S. Employer
of incorporation or organization)	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	Name of each exchange on which registered
Common Stock, Par Value $0.66 2/3	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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See 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	(Do not check if a smaller reporting company)	Smaller reporting company
Emerging growth company		

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

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

The aggregate market value of the 38,032,787 shares of Common Stock held by non-affiliates of the registrant, based on the closing price of $18.79 per share of the Common Stock on the Nasdaq Global Select Market on June 30, 2017, the last business day of the registrant's most recently completed second fiscal quarter, was approximately $714,636,068.

The number of shares of the registrant's Common Stock outstanding as of February 9, 2018 was 49,140,136.

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 2018 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, 2017.

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. Diodes serves the consumer electronics, computing, communications, industrial, and automotive markets. Diodes' products include diodes, rectifiers, transistors, MOSFETs, protection devices, function-specific arrays, 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' corporate headquarters and Americas' sales office are located in Plano, Texas and Milpitas, California. Design, marketing, and engineering centers are located in Plano; Milpitas; Taipei, Taiwan; Taoyuan City, Taiwan; Zhubei City, Taiwan; Manchester, England; and Neuhaus, Germany. Diodes' wafer fabrication facilities are located in Manchester and Shanghai, China. Diodes has assembly and test facilities located in Shanghai, Jinan, Chengdu, and Yangzhou, China, as well as in Hong Kong, China, Neuhaus and Taipei. Additional engineering, sales, warehouse, and logistics offices are located in Taipei; Hong Kong; Manchester; Shanghai; Shenzhen, China; Seongnam-si, South Korea; and Munich, Germany, with support offices throughout the world. We were incorporated in 1959 in California and reincorporated in Delaware in 1968.

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 46 billion units, 41 billion units, and 40 billion units in 2017, 2016 and 2015, respectively. From 2012 to 2017, our net sales grew from $633.8 million to $1.1 billion, representing a compound annual growth rate of greater than 10%.

BUSINESS OUTLOOK

During 2017, we achieved our goal of $1.0 billion in annual revenue. During 2017, we announced new goals for 2025 that include revenue of $2.5 billion 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. 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 15 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. In 2011, we established an additional manufacturing facility for semiconductor assembly and test in Chengdu, China, which became fully production capable during the second half of 2015. Additionally, the Shanghai and Chengdu locations of our manufacturing operations 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 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 OEMs as well as major EMS providers. Overall, we serve over 375 direct customers worldwide and tens of thousands of additional customers through our 122 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 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 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 2017, we continued to achieve many significant new design wins at OEMs. 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. In 2011, we commenced the expansion of our capacity further by establishing an additional manufacturing facility for semiconductor assembly and test in Chengdu, China, that became fully production capable in the second half of 2015.

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. In 2015, we acquired Pericom Semiconductor Corporation. Pericom 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. Analog, digital and mixed-signal ICs, together with 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 and digital media players.

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 19 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
- With the Pericom acquisition we acquired FCPs 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	2017	2016	2015	End product applications
Consumer Electronics	26%	29%	32%	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
Computing	18%			