RESEARCH BULLETIN

MARCH 7, 2016

Semiconductor Unit Shipments To Exceed One Trillion Devices in 2018

Updated forecast expects 7.2% average annual unit shipment growth through 2020.

Total yearly semiconductor unit shipments (integrated circuits and opto-sensor-discrete, or O-S-D, devices) are forecast to continue their upward march and are now expected to top one trillion units for the first time in 2018, according to data presented in IC Insights' recently released 2016 edition of *The McClean Report—A Complete Analysis and Forecast of the Integrated Circuit Industry*, and its soon to be released 2016 *O-S-D Report—A Market Analysis and Forecast for the Optoelectronics, Sensors/Actuators, and Discretes*. Semiconductor shipments in excess of one trillion units are forecast to be the new normal beginning in 2018. Figure 1 shows that semiconductor unit shipments are forecast to climb to 1,022.5 billion devices in 2018 from 32.6 billion in 1978, which amounts to average annual growth of 9.0% over the 40-year period and demonstrates how increasingly dependent on semiconductors the world has become.

MORE INFORMATION CONTACT

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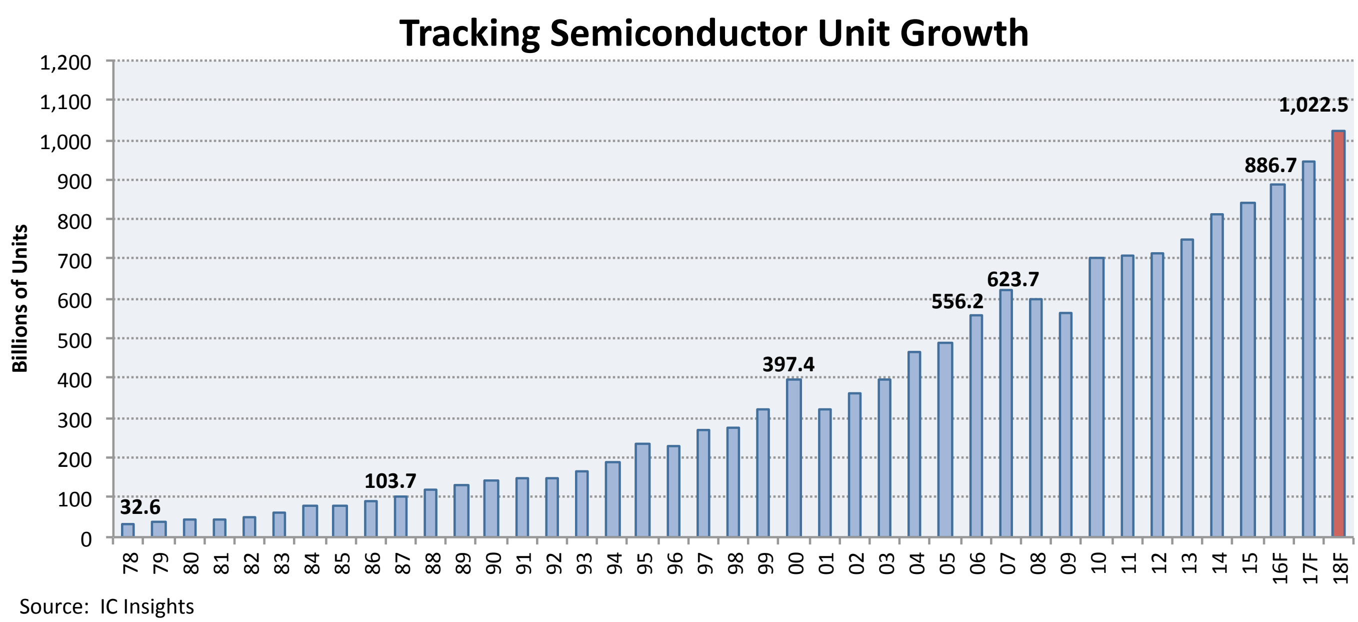

Figure 1

The largest annual increase in semiconductor unit growth during the timespan shown was 34% in 1984; the biggest decline was 19% in 2001 following the dot-com bust. The global financial meltdown and ensuing recession caused semiconductor shipments to fall in both 2008 and 2009, the only time the industry has experienced consecutive years in which unit shipments declined. Semiconductor unit growth then surged 25% in 2010, the second-highest growth rate since 1978.

The percentage split of IC and O-S-D devices within total semiconductor units has remained fairly steady despite advances in integrated circuit technology and the blending of functions to reduce chip count within systems. In 1980, O-S-D devices accounted for 78% of semiconductor units and ICs represented 22%. Thirty-five years later in 2015, O-S-D devices accounted for 72% of total semiconductor units, compared to 28% for ICs (Figure 2).

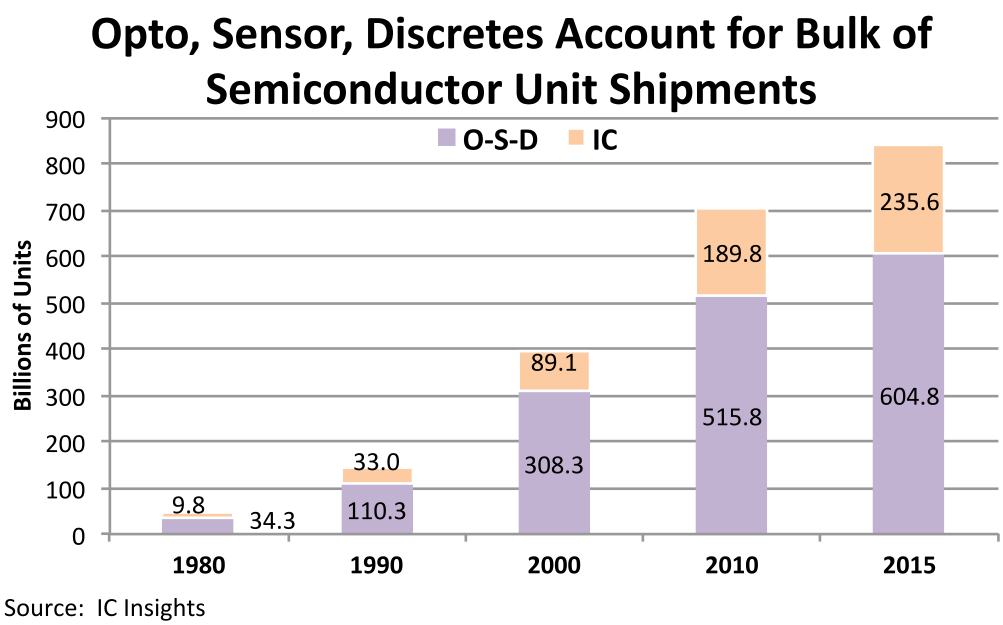

Figure 2

From one year to the next year—and usually depending on the must-have electronic system or product in the market at the time—different semiconductor products emerge to experience the strongest unit shipment growth. Figure 3 shows IC Insights' forecast of the O-S-D and IC product categories with largest unit growth rates forecast for 2016. Semiconductors showing the strongest unit growth are essential building-block components in smartphones, new automotive electronics systems, and within systems that are helping to build out of Internet of Things. More about these semiconductor products and end-use applications are included in IC Insights' *McClean Report* and *O-S-D Report.*

Product Categories with Strongest Forecast Unit Growth

O-S-D Devices	2016F Unit Growth Rate	IC Devices	2016F Unit Growth Rate
Magnetic-Field Sensors	15%	32-bit MCUs	29%
Actuators	13%	Wireless Comm—App-Specific Analog	15%
Thyristor Surge Suppressors	12%	Display Drivers	12%
Total O-S-D	**6%**	**Total IC**	**6%**

Source: IC Insights

Figure 3

Report Details: *The 2016 McClean Report and 2016 O-S-D Report*

Further details on IC, O-S-D, and total semiconductor unit and market trends are provided in the 2016 editions of two recently revised reports from IC Insights. *The McClean Report—A Complete Analysis and Forecast of the Integrated Circuit Industry* is IC Insights' flagship report and analysis of the IC market. A subscription to *The McClean Report* includes **free** monthly updates from March through November (including a 250+ page *Mid-Year Update*), and **free** access to subscriber-only webinars throughout the year. An individual-user license to the 2016 edition of *The McClean Report* is priced at $3,890 and includes an Internet access password. A multi-user worldwide corporate license is available for $6,890.

IC Insights expands its coverage of the semiconductor industry with its 360-page *O-S-D Report—A Market Analysis and Forecast for the Optoelectronics, Sensors/Actuators, and Discretes* (released in late March 2016). Details in this one-of-a-kind report include a detailed forecast of sales, unit shipments, and selling prices for more than 30 individual product types and categories through 2020. Also included is a review of technology trends for each of the segments. The *2016 O-S-D Report*, with more than 240 charts and figures, is priced at $3,390 for an individual-user license and $6,490 for a multi-user corporate license.

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