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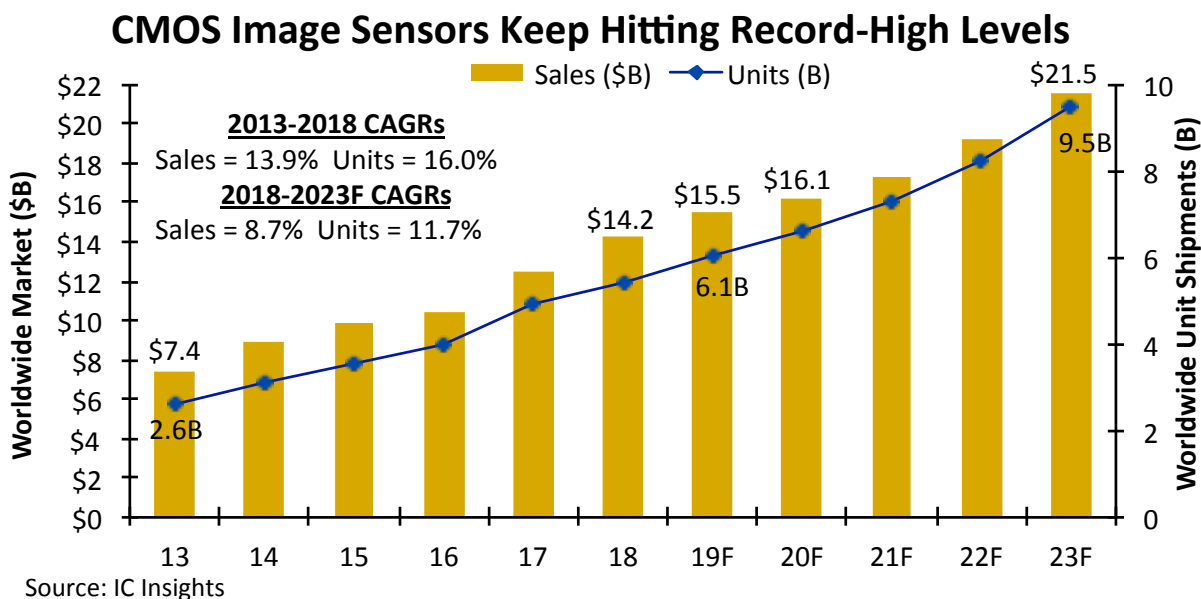
## CMOS Image Sensors Stay on Stairway to Record Revenues

*Economic slowdown and U.S.-China trade war will not stop CMOS image sensors from continuing their string of record sales and shipments going back to 2011, says report.*

Despite an expected slowdown in growth this year and in 2020, the CMOS image sensor market is forecast to continue reaching record-high sales and unit volumes through 2023 with the spread of digital-imaging applications offsetting weakness in the global economy and the fallout from the U.S.-China trade war. CMOS image sensor sales are projected to rise 9% in 2019 to an all-time high of \$15.5 billion, followed by a 4% increase in 2020 to \$16.1 billion (Figure 1), according to IC Insights' 2019 *O-S-D Report—A Market Analysis and Forecast for Optoelectronics, Sensors/Actuators, and Discretes*.

### MORE INFORMATION CONTACT

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**Figure 1**

IC Insights is forecasting an 11% rise in CMOS image sensor shipments in 2019 to a record-high 6.1 billion units worldwide, followed by a 9% increase in 2020 to 6.6 billion when the global economy is expected to teeter into recessionary territory, partly because of the tariff-driven trade war between the U.S. and China. In 2018, CMOS image sensor revenue grew 14% to \$14.2 billion after climbing 19% in

2017. CMOS image sensor sales have hit new-high levels each year since 2011 and the string of consecutive records is expected to continue through 2023, when sales reach \$21.5 billion, according to the 350-page *O-S-D Report*.

Worldwide shipments of CMOS image sensors also have reached eight consecutive years of all-time high levels since 2011 and those annual records are expected to continue to 2023, when the unit volume hits 9.5 billion, based on the *O-S-D Report* forecast. China accounted for about 39% of all image sensors purchased in 2018 (not counting units bought by companies in other countries for system production in Chinese assembly plants). About 19% of image sensors purchased in 2018 were by companies located in the Americas region (90% of them in the U.S.), according to IC Insights' report.

Camera cellphones continue to be the largest end-use market for CMOS image sensors, generating 61% of sales and representing 64% of unit shipments in 2018, but other applications will provide greater lift in setting annual market records in the next five years. The *O-S-D Report* shows automotive systems being the fastest growing CMOS image sensor application, with dollar sales volume rising by a compound annual growth rate (CAGR) of 29.7% to \$3.2 billion in 2023, or 15% of the market's total sales that year (versus 6% in 2018). After that, the highest sales growth rates in the next five years are expected to be: medical/scientific systems (a CAGR of 22.7% to \$1.2 billion); security cameras (a CAGR of 19.5% to \$2.0 billion); industrial, including robots and the Internet of Things (a CAGR of 16.1% to \$1.8 billion); and toys and games, including consumer-class virtual/augmented reality (a CAGR of 15.1% to \$172 million).

CMOS image sensor sales for cellphones are forecast to grow by a CAGR of just 2.6% to \$9.8 billion in 2023, or about 45% of the market total versus 61% in 2018 (\$8.6 billion). Revenues for CMOS image sensors in PCs and tablets are expected to rise by a CAGR of 5.6% to \$990 million in 2023, while sensor sales for stand-alone digital cameras (still-picture photography and video) are projected to grow by a CAGR of only 1.0% to \$1.1 billion in the next five years.

### **Report Details: *The 2019 O-S-D Report***

In a one-of-a-kind study, IC Insights continues to expand its coverage of the semiconductor industry with detailed analysis of trends and growth rates in the optoelectronics, sensors/actuators, and discrete market segments in its newly revised 350-page *O-S-D Report—A Market Analysis and Forecast for the Optoelectronics, Sensors/Actuators, and Discretes*.

Now in its 14th annual edition, the 2019 *O-S-D Report* contains a detailed forecast of sales, unit shipments, and selling prices for more than 30 individual product types and categories through 2023. Also included is a review of technology trends for each of the segments. The 2019 *O-S-D Report*, with more than 240 charts and figures, is attractively priced at \$4,190 for an individual-user license and \$7,290 for a multi-user corporate license.

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