

# Toshiba Introduces New Line of Ultra-Small Photo-Interrupters for Consumer Electronics and Office Equipment Applications

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*Smaller Components Combine Wider Gap Width With Higher Current Transfer Ratios for Improved Detection of Focus and Zoom Lens and Paper Positions in Digital Entertainment and Office Products*

To address continuing demand for smaller, higher-performance components for consumer electronics and office equipment applications, [Toshiba America Electronic Components, Inc. \(TAEC\)\\*](#) today announced it has introduced a new series of three ultra-small photo-interrupters which, compared with previous models from Toshiba Corp. (Toshiba), combine smaller packaging with wider gap widths and higher current transfer ratios for more precise position detection. Developed by Toshiba, the new devices are used in cameras, copiers, printers, fax machines and other consumer electronics products to monitor variations in light levels to detect precise focus and zoom lens or paper positions.

The three new photo-interrupters, designated TLP841, TLP844, and TLP846, consist of a gallium arsenide (GaAs) light-emitting diode (LED) and silicon (Si) phototransistors. Each device offers wide gap width and compact packaging, which varies in size depending on the specific component selected. The new modules are also Lead(Pb)-Free(1), and their mounts have been created with Lead(Pb)-Free soldering alloys.

Toshiba's new ultra-compact photo-interrupters utilize insert molding

technology to mount the LED and phototransistors in a miniaturized package, enabling a significant reduction in size compared to conventional technology in which heat is used to side-mount the LED and phototransistor.

"Toshiba's new series of small photo-interrupters are ideal for consumer electronics and office equipment OEMs as they constantly strive to increase the performance of their products while also reducing their size," said Yoshimichi Sasaki, business development director for optoelectronics at Toshiba America Electronic Components, Inc. "More importantly, these components, because of their varying features and specifications, give manufacturers a great deal of flexibility in the design of these products, thereby enabling them to deliver more powerful, compact offerings to their customers."

The TLP841 photo-interrupter is a position detection sensor designed primarily for use in copiers, inkjet and all-in-one printers, and fax machines to detect paper feed and position. The TLP841 comes in a small package, which measures 7.5(w) x 2.6(h) x 6.3(d) millimeters (mm), and carries a gap width of 5 mm. The component also has a resolution slit width of 0.5 mm, a minimum current transfer ratio of 2.5 percent, and a high response speed of 15 microseconds. By employing insert molding technology, the volume of the Toshiba TLP841 is reduced by 82 percent compared to Toshiba's earlier side-mounted solution.

The TLP844 is most appropriate for advanced photography products, such as more sophisticated still, digital still and video cameras for position detection of the zoom and auto-focus mechanisms. The device possesses an ultra-compact package, with dimensions of 4.0(w) x 2.6(h) x 2.9(d) mm, a gap width of 2.0 mm, and slit width of 0.3 mm. It also possesses a high current transfer ratio of 3.5 percent (minimum).

Finally, the TLP846 is the most advanced photo-interrupter in the new series, and is targeted for use in advanced still, digital still and video cameras, floppy disk drives, and other equipment. The module has a package size of 3.5(w) x 2.6(h) x 2.9(d) mm, a gap width of 1.2 mm, slit width of 0.15 mm, and a high current transfer ratio of 3.0 percent (minimum).

\*About TAEC

Combining quality and flexibility with design engineering expertise, TAEC brings a breadth of advanced, next-generation technologies to its customers. This broad offering includes semiconductors, flash memory-based storage solutions, and displays for the computing, wireless, networking, automotive and digital consumer markets.

TAEC is an independent operating company owned by Toshiba America, Inc., a subsidiary of Toshiba, one of the five largest semiconductor manufacturers worldwide in terms of global sales for the year 2003 according to Gartner/Dataquest's Worldwide Semiconductor Market Share Ranking. Toshiba is a world leader in high-technology products with more than 300 major subsidiaries and affiliates worldwide. For additional company and product information, please visit TAEC's Web site at [chips.toshiba.com/](http://chips.toshiba.com/). For technical inquiries, please e-mail [Tech.Questions@taec.toshiba.com](mailto:Tech.Questions@taec.toshiba.com).

(1) Toshiba defines "Lead(Pb)-Free" in accordance with current industry standard as containing less than 0.1 percent lead(Pb) by weight. This does not mean that Toshiba products that are labeled Lead(Pb)-Free are entirely free of lead(Pb).

Information in this press release, including product pricing and specifications, content of services and contact information, is current and believed to be accurate on the date of the announcement, but is

subject to change without prior notice. Technical and application information contained here is subject to the most recent applicable Toshiba product specifications. In developing designs, please ensure that Toshiba products are used within specified operating ranges as set forth in the most recent Toshiba product specifications and the information set forth in Toshiba's "Handling Guide for Semiconductor Devices," or "Toshiba Semiconductor Reliability Handbook." This information is available at [www.chips.toshiba.com/](http://www.chips.toshiba.com/), or from your TAEC representative.

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The original press release can be found [here](#).

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