

# **TOSHIBA INTRODUCES HIGH-SPEED, HIGH-GAIN PHOTOCOUPLER FOR INTELLIGENT POWER MODULES AND INDUSTRIAL INVERTERS**

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In an effort to meet increasingly stringent isolation and switching requirements of intelligent power modules, industrial inverters and similar applications, Toshiba America Electronic Components, Inc. (TAEC) announced the introduction of a high-speed, high-gain photocoupler that supports signal transmission and switching speeds up to 400 nanoseconds (ns). Developed by Toshiba Corp. (Toshiba) and designated TLP106, the new device is intended for signal isolation in intelligent power modules, industrial inverters, and motor drives. The small 6-pin MFSOP package is ideal for space constrained applications.

The TLP106 photocoupler is an optically coupled isolator consisting of a gallium aluminum arsenide (GaAlAs) light-emitting diode (LED) and an integrated high-gain, high-speed photo detector. The new device offers an extremely low propagation delay of 400ns, high isolation voltage of 3.75kVrms, common mode transient immunity of 10kV/ $\mu$ s, and threshold input current requirements of just 3 milliamperes (mA).

"Toshiba's new photocoupler is the result of significant customer feedback and demand for high-quality electronic components that meet the distinctive isolation requirements of industrial applications, such as intelligent power modules and industrial inverters," said Yoshimichi Sasaki, business development director for optoelectronics at TAEC. "As a result, Toshiba now offers a device that combines high-speed switching

and low propagation delay, with high isolation voltage and common mode transient immunity, for unparalleled performance and flexibility."

The TLP106 photocoupler is a buffer logic device suitable for use as an active intelligent power module gate driver. The totem pole output structure of the TLP106 makes bidirectional drive possible for both the sink and the source, thereby eliminating the need for an external pull-up resistor. The device operates with a supply voltage of 4.5V to 20V and is packaged in a surface mount 6-pin MFSOP. By optimizing the internal circuitry of the component, Toshiba achieved a wide operating temperature range from  $-40$  degrees C to  $+85$  degrees C. The shielded photodetector of the TLP106 also provides for excellent input and output noise characteristics.

More information: [www.toshiba.com/taec/](http://www.toshiba.com/taec/)

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