

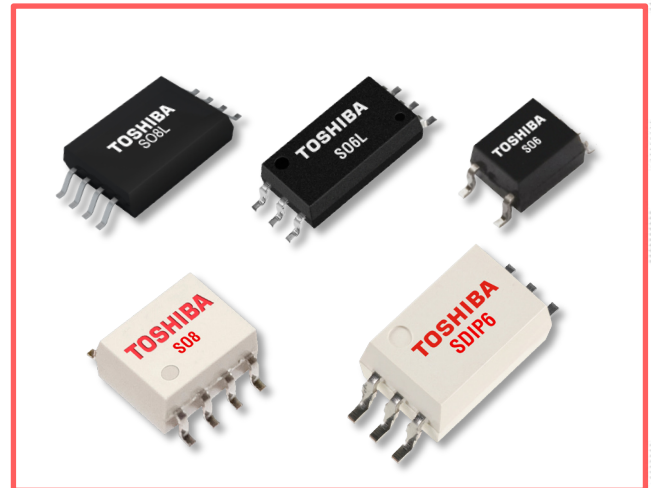
PHOTOCOUPLER

> **HIGH SPEED IC COUPLER**

Expert Choice for High-Speed Signals

Toshiba offers photocouplers compliant with a wide range of communication standards such as low-to medium-speed RS-232, high-speed RS-485 and those for factory networks.

An isolation voltage as high as 5kVrms enhances the safety of an end application, while the initial input current of approximately 1mA provides an energy-efficient solution.



> **APPLICATIONS**

- Factory Automation
- Smart Meters
- High Speed Digital Interfaces
- Power Supply Feedback
- Home Appliances

> **FEATURES**

Wide range of high-speed couplers with extended temp. range from -40°C to +125°C

Extensive range of data rate options from 100kbps to 50Mbps

Optical isolation with guaranteed internal galvanic isolation distance of min. 0.4mm

Leading edge technology for highest reliability and lowest power consumption

Package variety with clearance/creepage distances from 4mm to 8mm.

> **ADVANTAGES**

Products are perfectly applicable in harsh environments

Free choice of speed options for major communication standards

Provides best in class isolation performance

Enables highest system performance and efficiency

Wide choice of package options to meet the required safety standards

> **BENEFITS**

Attractive cost effects

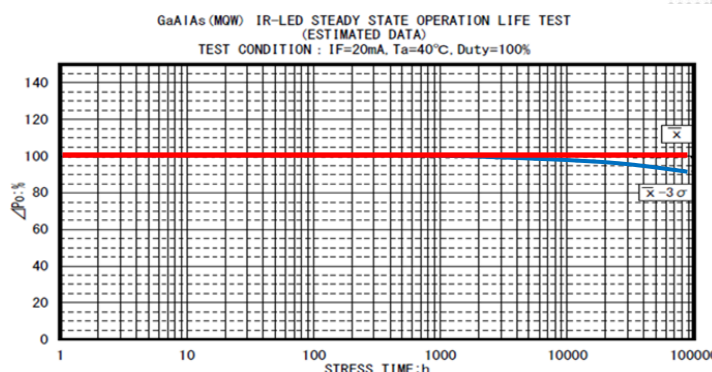
- High reliability of end products reduce costs of operation failures
- Ability to reduce BOM costs due to most effective solutions
- Customers can save money through design and space optimisation

Smart performance increases

- Reduction of end product size, lead to a unique selling proposition for the customer
- Easy design for best performance

> **ADVANTAGES OF LONG LIFETIME HIGH TEMPERATURE LEDs**

Toshiba's high reliability LEDs (InGaAs) allow operation at high temperature conditions and show much lower output degradation over time than standard LEDs. Performance remains very stable and design gets very easy.



➤ NEW 50MBPS HIGH SPEED IC COUPLERS TLP2367 & TLP2767

Toshiba have introduced new high speed IC Couplers supporting the highest data rates up to 50Mbps. The TLP2367 and TLP2767 integrate Toshiba's latest high performance long lifetime LED and a high performance Photo-IC. TLP2367 is supported in an SO6 package featuring 5mm clearance/creepage distance, while TLP2767 comes in an SO6L package, featuring 8mm clearance/creepage distance and isolation voltage of 5kVrms.

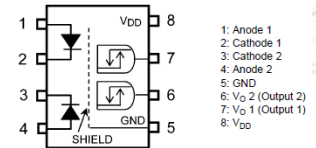
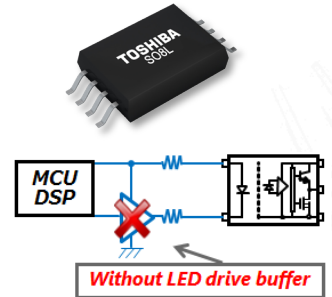


➤ NEW DUAL-CHANNEL DEVICES IN NEW SO8L PACKAGE TLP2261 & TLP2270

Toshiba have introduced a new generation of 20Mbps high-speed IC Couplers in a new dual-channel SO8L package. The TLP2261 and TLP2270 integrate Toshiba's latest high performance long lifetime LED that reduces the threshold input current to max. 1.6mA for TLP2261 and to max. 1mA for TLP2270, up to 38% less compared to a conventional LED. Both devices also support bufferless direct drive by an MCU. The light receiving IC in the output side that uses a Bi-CMOS process has a low supply current per channel of 1mA for TLP2261 and a max. 0.4mA for TLP2270, which is around 90% lower compared with a conventional product.

2 Channels of high-speed IC's are integrated in the new SO8L package, featuring 8mm clearance/creepage distance and isolation voltage of 5kVrms. The max. package height is 2.35 mm, which makes the new package ideal for mounting on the backside of the PCB and to reduce the size of the PCB.

Both TLP2261 and TLP2270 have a totem pole output, with TLP2261 using inverter logic and TLP2270 using buffer logic.



➤ IC COUPLERS FOR HIGH SPEED LOGIC SIGNAL TRANSMISSION AND IPM DRIVE

Data Rate (typ.)	Output	Supply Voltage Vcc	Package									
			SO6	SO8 1-ch	SO8 2-ch	SO6L*1	SO8L*1 2-ch	SDIP6	SDIP6 F type*1	DIP8	DIP8 F type*1	
~ 50 Mbps	Totem Pole	2.7 V - 5.5 V	TLP2367			TLP2767						
	Open Collector	2.7 V - 5.5 V	TLP2368	TLP2468	TLP2168	TLP2768A		TLP2768	TLP2768F	TLP2962	TLP2962F	
~ 20 Mbps	Totem Pole	2.7 V - 5.5 V	TLP2366	TLP2466	TLP2160			TLP2766	TLP2766F			
		2.7 V - 5.5 V ultra low power	TLP2361 TLP2370		TLP2161	TLP2761 TLP2770	TLP2261 TLP2270					
~ 10 Mbps	Open Collector	2.7 V - 5.5 V	TLP2362							TLP2662 (2-ch type)	TLP2662F (2-ch type)	
	Totem Pole	2.7 V - 5.5 V ultra low power AC input	TLP2391									
		4.5 V - 30 V IPM Drive	TLP2345 TLP2348			TLP2745 TLP2748						
~ 5 Mbps	Totem Pole	2.7 V - 5.5 V ultra low power	TLP2310		TLP2110	TLP2710						
		3.0 V - 20 V AC input	TLP2395 TLP2398									
		3.0 V - 20 V IPM Drive	TLP2355 TLP2358	TLP2405 TLP2408	TLP2105 TLP2108			TLP715 TLP718	TLP715F TLP718F	TLP2955 TLP2958	TLP2955F TLP2958F	
~ 1-2 Mbps	Open Collector	4.5 V - 30 V IPM Drive	TLP104	TLP2404		TLP2704		TLP714	TLP714F	TLP754	TLP754F	
		3.0 V - 30 V	TLP109 TLP2309	TLP2409				TLP719	TLP719F			
~ 100 Kbps	Open Collector	4.5 V - 18 V ultra low power	TLP2303	TLP2403		TLP2703						

*1 SO6L, SO8L and F type of SDIP and DIP Photocouplers have 8mm clearance / creepage distances

H Photocouplers with a maximum operating temperature of 110°C
H Photocouplers with a maximum operating temperature of 125°C
B Totem Pole, Buffer Logic Type
I Totem Pole, Inverter Logic Type