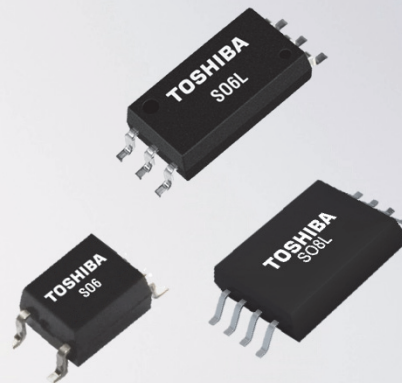


# High Speed IC Couplers



## 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 5kV<sub>rms</sub> 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 minimum 0.4mm
- Leading edge technology for highest reliability and lowest power consumption
- Package variety with clearance/creepage distances from 4mm to 8mm

### Advantages

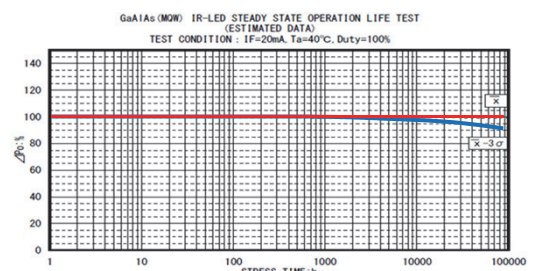
- Products are perfectly applicable in harsh environments
- Free choice of speed options for major communication standards
- Provides best in class isolation performance
- Enables highest system performance and efficiency
- Wide choice of package options to meet the required safety standards

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

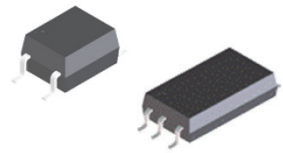
## Advantages of long lifetime high power LEDs

Toshiba's high-power infrared LEDs with a Multi Quantum Well (MQW) structure allow operation at high temperature conditions and show much lower output degradation over time than standard LEDs. Performance remains very stable and design becomes very easy.



## 50Mbps high speed IC couplers TLP2367 & TLP2767

Toshiba's fastest high speed IC Couplers are supporting highest data rates up to 50Mbps. The TLP2367 and TLP2767 integrate Toshiba's latest high performance long lifetime LED and a high performance photodetector. 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 5kV<sub>rms</sub>.



### TLP2363 – New highspped coupler for PLC

Toshiba has introduced a new high-speed IC Coupler with a data rate of 10Mbps, dedicated to PLC applications, the TLP2363.

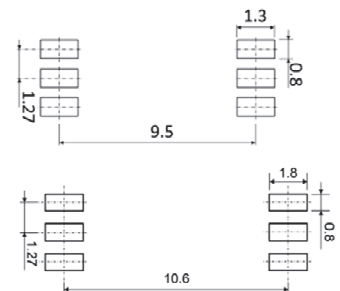
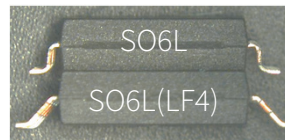
It has been designed to follow the requirements of IEC61131-2 type 1 standard for 24V digital input modules.

TLP2363 delivers a clear 'high' or 'low' on the output by suppressing chatter noise, even with a slow-moving input signal of 60s or less with a long rising or falling edge. As a result, there is no need for any waveform shaping circuitry, reducing the number of components that saves PCB area and cost.

Temperature range is from -40°C to +105°C.

### SO6L wide lead forming option LF4

Toshiba's SO6L package is available now with a wide lead forming option (LF4), which offers a pin distance of minimum 9.35 mm. With the LF4 lead forming option, Toshiba's SO6L package can be mounted directly on footprints of similar high-speed coupler packages on the market.



## IC couplers for high speed logic signal transmission and IPM drive

Data rate (typ.)	Output	Supply voltage V <sub>cc</sub>	Package			
			SO6	SO6L <sup>+1</sup>	SO6L <sup>+1</sup> LF4	SO8L <sup>+1</sup> 2 ch
~ 50 Mbps	Totem Pole	2.7 V - 5.5 V	TLP2367	TLP2767		
	Open Collector	2.7 V - 5.5 V	TLP2368	TLP2768A	TLP2768A(LF4)	
~ 20 Mbps	Totem Pole	2.7 V - 5.5 V	TLP2366	TLP2766A	TLP2766A(LF4)	
		2.7 V - 5.5 V ultra low power	TLP2361 TLP2370	TLP2761 TLP2770	TLP2761(LF4)	TLP2261 TLP2270
~ 10 Mbps	Open Collector	2.7 V - 5.5 V	TLP2362 TLP2363*			
	Totem Pole	2.7 V - 5.5 V ultra low power AC input	TLP2391			
		9V - 15V MOSFET Gate Drive		TLP2735		
~ 5 Mbps	Totem Pole	4.5 V - 30 V IPM Drive	TLP2345 TLP2348	TLP2745 TLP2748	TLP2745(LF4) TLP2748(LF4)	
		2.7 V - 5.5 V ultra low power	TLP2310	TLP2710	TLP2710(LF4)	
		3.0 V - 20 V AC input	TLP2395 TLP2398			
		3.0 V - 20 V IPM Drive	TLP2355 TLP2358			
~ 1-2 Mbps	Open Collector	4.5 V - 30 V IPM Drive	TLP2304	TLP2704	TLP2704(LF4)	
		3.0 V - 30 V	TLP109 TLP2309	TLP2719*	TLP2719(LF4)*	
~ 100 Kbps	Open Collector	4.5 V - 18 V ultra low power	TLP2303	TLP2703		

\*1 SO6L, SO8L have 8mm clearance / creepage distances  
 Photocouplers with a maximum operating temperature of 110°C  
 Photocouplers with a maximum operating temperature of 125°C

Totem Pole, Buffer Logic Type  
 Totem Pole, Inverter Logic Type

\*new product