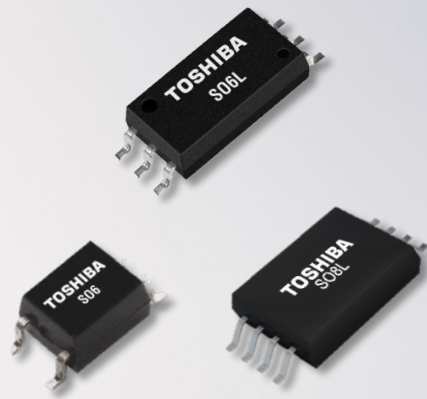


High Speed IC Couplers



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 $5kV_{rms}$ enhances the safety of an end application, while the initial input current of approximately 1mA provides an energy-efficient solution.

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

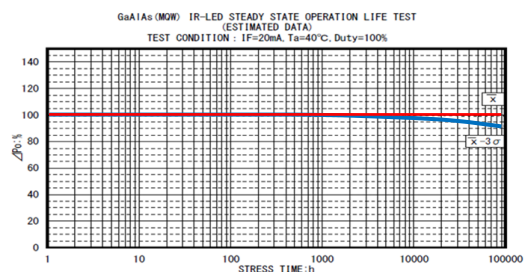
- Attractive cost effects
 - High reliability of end products reduce costs of operation failures
 - Ability to reduce BOM costs due to most effective solutions
 - Customers can save money through design and space optimization
- Smart performance increases
 - Reduction of end product size leads to a unique selling proposition for the customer
 - Easy design for best performance

Applications

- Factory automation
- Smart meters
- High speed digital interfaces
- Power supply feedback
- Home appliances

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.



TLP2362B/68B & TLP2762B/68B for Supports slow input and power supply slow startup

The four devices have typical data transfer rates of 10Mbps (TLP2x62B) and 20Mbps (TLP2x68B) and operate normally even when the rise time and fall time are slow (slow input below 60 s) at the primary side input current and the secondary side power supply voltage. These devices eliminate the need to add components (such as Schmitt trigger circuits) to suppress chattering and contributes to simplification of product design and reduction of external circuits. These devices complies with IEC 61131-2* and especially are suitable for PLC application.



* Industrial Process Measuring and Control-Programmable Controllers-Part 2: Instrument Requirements and Tests

TLP2363 – High speed coupler for PLC

TLP2363 is a high speed IC Coupler with a data rate of 10Mbps, dedicated to PLC applications.

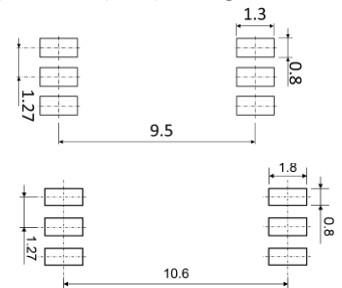
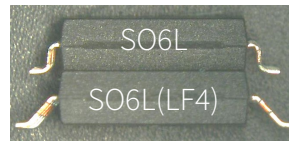
It has been designed to follow the requirements of IEC61131-2 type 1 standard for 24V digital input modules.

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 Form		Supply Voltage V _{cc}	Package			
				SO6	SO6L*1	SO6L*1 LF4	SO8L*1 2-ch
~ 50 Mbps	Totem Pole	Inverter Logic	2.7 V - 5.5 V	TLP2367 H	TLP2767 H		
~ 20 Mbps	Open Collector	Inverter Logic	2.7 V - 5.5 V	TLP2368 H	TLP2768A H	TLP2768A(LF4) H	
	Open Drain	Inverter Logic	2.7 V - 5.5 V	TLP2368B H	TLP2768B H	TLP2768B(LF4) H	
	Totem Pole	Inverter Logic	2.7 V - 5.5 V	TLP2366 H	TLP2766A H	TLP2766A(LF4) H	
~ 15 Mbps	Totem Pole	Buffer Logic	2.7 V - 5.5 V	TLP2370 H L	TLP2770 H L		TLP2270 H L
		Buffer Logic	2.2 V - 5.5 V	TLP2372 H L			
		Inverter Logic	2.7 V - 5.5 V	TLP2361 H L	TLP2761 H L	TLP2761(LF4) H L	TLP2261 H L
~ 10 Mbps	Open Collector	Inverter Logic	2.7 V - 5.5 V	TLP2362 H			
		Inverter Logic	2.7 V - 5.5 V	TLP2363 (for PLC)			
	Open Drain	Inverter Logic	2.7 V - 5.5 V	TLP2362B H	TLP2762B H	TLP2762B(LF4) H	
	Totem Pole	Inverter Logic	2.7 V - 5.5 V AC input	TLP2391 H			
Buffer Logic		9V - 15V		TLP2735 H			
Buffer Logic		4.5 V - 30 V	TLP2345 H L	TLP2745 H L	TLP2745(LF4) H L		
~ 5 Mbps	Totem Pole	Inverter Logic	IPM Drive	TLP2348 H L	TLP2748 H L	TLP2748(LF4) H L	
		Buffer Logic	2.2 V - 5.5 V	TLP2312 H L			
		Buffer Logic	2.7 V - 5.5 V	TLP2310 H L	TLP2710 H L	TLP2710(LF4) H L	TLP2210 H L
		Buffer Logic	3.0 V - 20 V	TLP2395 H			
		Inverter Logic	AC input	TLP2398 H			
		Buffer Logic	3.0 V - 20 V	TLP2355 H L			
~ 1-2 Mbps	Open Collector	IPM Drive		TLP2358 H L			
		Inverter Logic	4.5 V - 30 V	TLP2304 H	TLP2704 H	TLP2704(LF4) H	
		Inverter Logic	~ 4.0 V - 30 V	TLP109 H TLP2309 H	TLP2719	TLP2719(LF4)	
~ 100 Kbps	Open Collector	Inverter Logic	4.5 V - 18 V	TLP2303 H	TLP2703 H		

H Photocouplers with a maximum operating temperature of 110°C

H Photocouplers with a maximum operating temperature of 125°C

L Low power - maximum input threshold current (IFLH/IFHL) of 1,6mA or less

*1 SO6L, SO8L have 8mm clearance /creepage distances