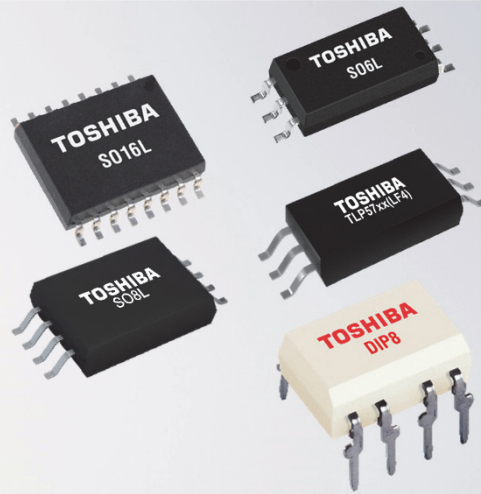


# Gate Drive Couplers



## Ideal for Tough Industrial Applications

Toshiba's IGBT / MOSFET gate drive coupler portfolio includes an extensive lineup of photocouplers with an output ranging from 0.6A to the industry's highest-level 6.0A. Thus you can select couplers that best fit your needs according to the gate capacitances of the driven IGBTs and MOSFETs.

### Applications

- Industrial automation
- FA inverter
- AC servo
- Power Supply (UPS)
- Air conditioner inverter
- Photovoltaic inverter
- Home appliances
- Induction cooking

### Features

- Wide range of gate drivers with extended temp range from -40°C up to +125°C
- Optical isolation with guaranteed internal galvanic isolation distance of minimum 0.4mm
- Package variety with excellent isolation performance
- Leading edge technology for best technical performance and fastest switching
- New Rail to Rail IGBT drivers
- Smart IGBT gate driver with desaturation detection and active Miller clamp

### Advantages

- Products are applicable in harsh environments
- Provides best in class isolation performance without creating EMI issues
- Variety of lead forming styles with 7mm & 8mm clearance/creepage
- Devices offer highest CMTI up to 40kV/μs and integrated UVLO circuit
- Improved system efficiency
- No external protection circuit needed

### Benefits

- Attractive cost effects
- Fewer field failures due to higher product reliability
  - Less EMI problems
  - 50% less mounting space for new SO6L package compared with previous DIP8 packages
- Less external components needed
- Smart performance increases
  - Strong isolation for enhanced safety and high reliability
  - Easy design for best performance

## TLP575x and TLP577x – The best choice for new drive generations

The excellent combination of Toshiba's high performance long life LEDs, low power consumption driver ICs with rail-to-rail output and the advanced, space saving SO6L package with a max. height of 2.3mm make Toshiba's gate driver couplers the ideal choice for the next generations of drives.

The TLP5771, TLP5772 and TLP5774 supply peak output currents of 1A, 2.5A, and 4A. Maximum propagation delay time and propagation delay skew are guaranteed within the defined wide operation temperature range up to 110°C, making it possible to reduce dead time in the inverter circuit, which can secure higher operating efficiency. The very low threshold input current of max. 2mA allows direct drive of the device from an MCU.

TLP5751H, TLP5752H and TLP5754H are the latest devices, available in wide lead forming version (LF4) and with an extended temperature range to +125°C.

### SO6L package

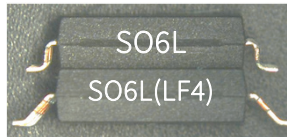
Toshiba's SO6L package with 8mm clearance and creepage distances guarantees a maximum operating insulation voltage of 1230V<sub>pk</sub>.

Its maximum height of only 2.3mm makes it suitable for mounting on the backside of a PCB, which greatly improves the design flexibility for the front side.

### 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 min. 9.35mm.

With the LF4 lead forming option, Toshiba's SO6L package can be mounted directly on footprints of similar gate-driver packages on the market.



## IGBT/ MOSFET gate driver coupler lineup

Peak output current	Propagation delay time (max.)	Supply voltage V <sub>cc</sub>	Threshold input current I <sub>FLH</sub> (max.)	Package							
				SO6	SO6L*1	SO6L*1 LF4	SO8L*1	SO16L*1	DIP8	DIP8 F type*1	
± 6 A	500 ns	15 V ~ 30 V	5 mA							TLP358H	TLP358HF
± 4 A	150 ns	15 V ~ 30 V	4 mA   6 mA		TLP5754 rail-to-rail	TLP5754(LF4) rail-to-rail			TLP5214A rail-to-rail		
		10 V ~ 30 V	2 mA		TLP5774 rail-to-rail	TLP5774(LF4) rail-to-rail					
± 2.5 A	150 ns	15 V ~ 30 V	4 mA		TLP5752 rail-to-rail	TLP5752(LF4) rail-to-rail					
		10 V ~ 30 V	2 mA		TLP5772 rail-to-rail	TLP5772(LF4) rail-to-rail					
	200 ns	15 V ~ 30 V	5 mA		TLP5702	TLP5702(LF4)	TLP5832		TLP352	TLP352F	
	500 ns	15 V ~ 30 V	5 mA						TLP350H	TLP350HF	
± 1 A	150 ns	15 V ~ 30 V	4 mA		TLP5751 rail-to-rail	TLP5751(LF4) rail-to-rail			TLP5231** dual output		
		10 V ~ 30 V	2 mA		TLP5771 rail-to-rail	TLP5771(LF4) rail-to-rail					
± 0.6 A	200 ns	10 V ~ 30 V	7.5 mA	TLP155E							
	500 ns		5 mA	TLP151A	TLP5701	TLP5701(LF4)					
	700 ns		5 mA						TLP351H	TLP351HF	

\*1 SO6L, SO8L, SO16L and F type of 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

\*\* under development

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