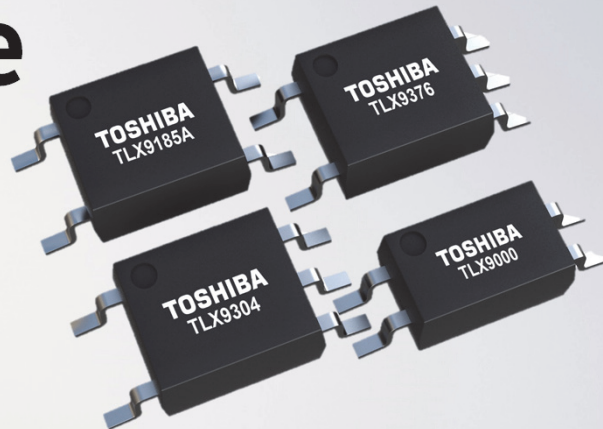


Automotive Couplers



AEC-Q101 Qualified Lineup

Toshiba offers a new generation of AEC-Q101 qualified photocouplers compliant to the requirements of most automotive applications. With more than 19 years of experience in the automotive photocouplers market, Toshiba provides suitable products for the increasing isolation requirements in today's automotive applications.

Applications

- EV/HEV
- BMS
- DC-DC converter
- Inverter

Features

- Wide range of AEC-Q qualified couplers with extended temp. range from -40°C to +125°C
- Extensive range of data rate options up to 20Mbps
- Optical isolation with guaranteed internal galvanic isolation distance of minimum 0.4mm
- Leading edge technology for highest reliability and lowest power consumption
- Packages with clearance and creepage distances of 5mm

Advantages

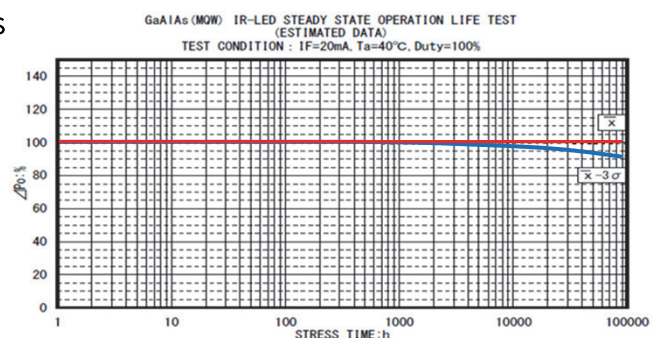
- Products are perfectly applicable for harsh automotive environments
- Free choice of speed options for various communication standards
- Provides best in class isolation performance
- Enables highest system performance and efficiency
- Packages meet the required safety standards

Benefits

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

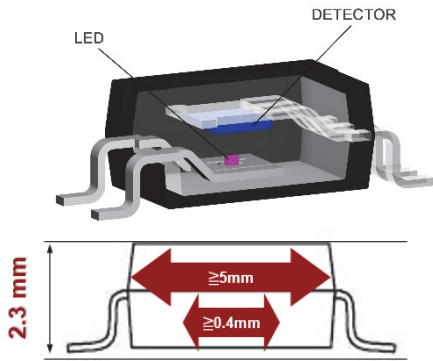
Advantages of long lifetime high temperature LEDs

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.



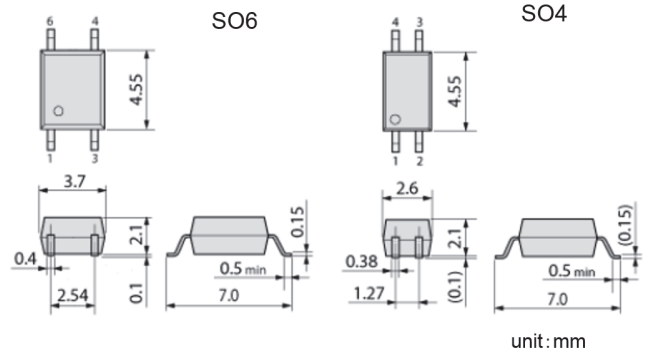
Package and construction of automotive couplers – SO6 & SO4 packages

SO6/SO4 construction:



Features:

- Creepage and clearance distances $\geq 5\text{mm}$
- Internal isolation thickness $\geq 0.4\text{mm}$
- Low-profile package $\leq 2.3\text{mm}$
- Isolation voltage = 3750Vrms (min)



IC output

Clearance and Creepage distances		5mm min.
Data rate (standard)	Output configuration	SO6
1 Mbps	Open collector (analog output)	TLX9309
1 Mbps	Open collector	TLX9304
5 Mbps	Totempole	TLX9310
10 Mbps	Open collector	TLX9378
20 Mbps	Totempole	TLX9376

Transistor output

Clearance and Creepage distances		5mm min.	
Isolation voltage BVs [Vrms]	Output configuration	SO4	SO6
3750		TLX9000	TLX9300
		TLX9291A	TLX9185A

Photovoltaic output

Clearance and Creepage distances		5mm min.
Isolation voltage BVs [Vrms]	Output configuration	SO6
3750		TLX9905
		TLX9906

Photorelay

Clearance and Creepage distances				5mm min.
Off-State voltage (max.) [V]	On-Resistance (max.) [Ω]	On-State current (max.) [A]	Output configuration	SO6
600	335	0.08		TLX9175J