

TOSHIBA

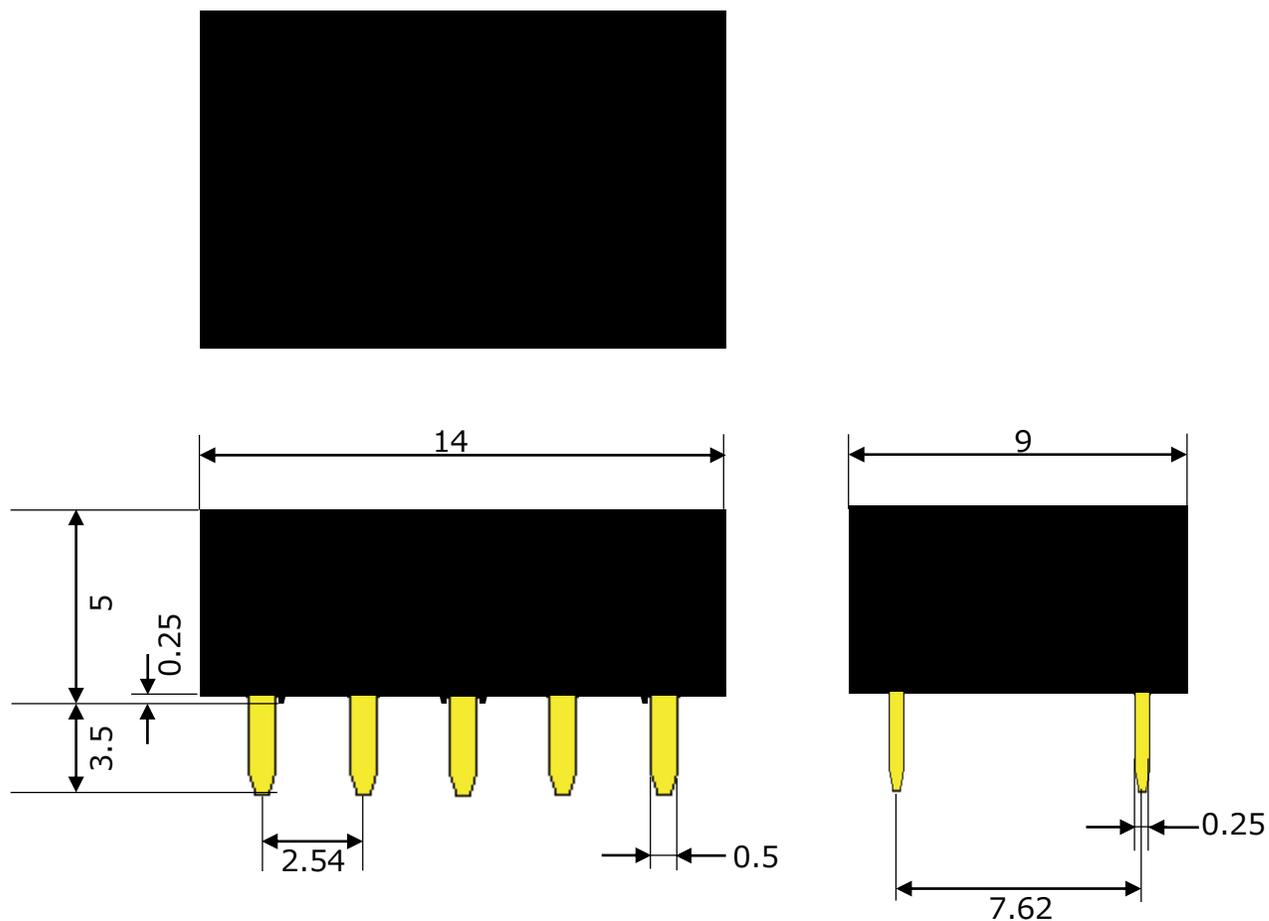
TOSHIBA Photorelay

Evaluation board guidance

2019-04
Rev. 1.0

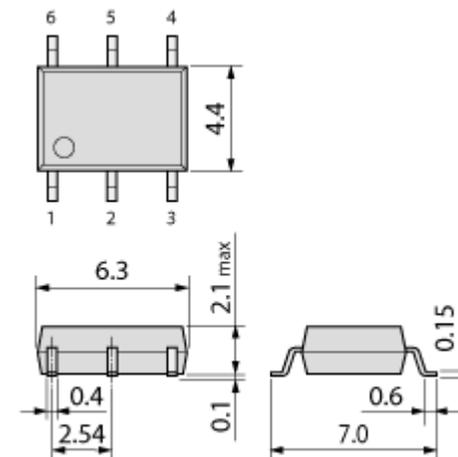
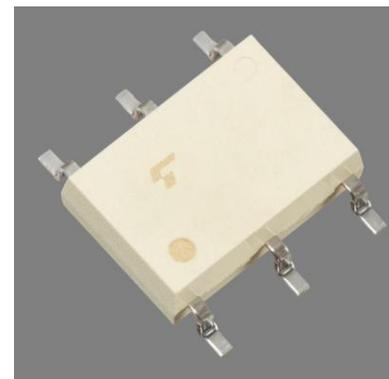
Evaluation board for checking photorelay operation

【SIP package mechanical relay】



Mounting area : 126 mm² (typ)

【Toshiba SOP6 package photorelay】



Mounting area : 44 mm² (typ)

66% miniaturization of mounting area with photorelay

Evaluation board for checking photorelay operation

Discover the benefits of replacing a mechanical relay with a Toshiba photorelay. This photorelay evaluation board replaces a mechanical relay by attaching directly to the mechanical relay mounting board (Refer to the diagram in Page 3 for the pin pattern of the compatible mechanical relay). The TLP3107 on-board is a high capacity type photorelay in a 2.54SOP6 package with VOFF 60 V / ION 3.3 A (@ Ta = 25 °C). For the detailed TLP3107 information, please download the product datasheet.

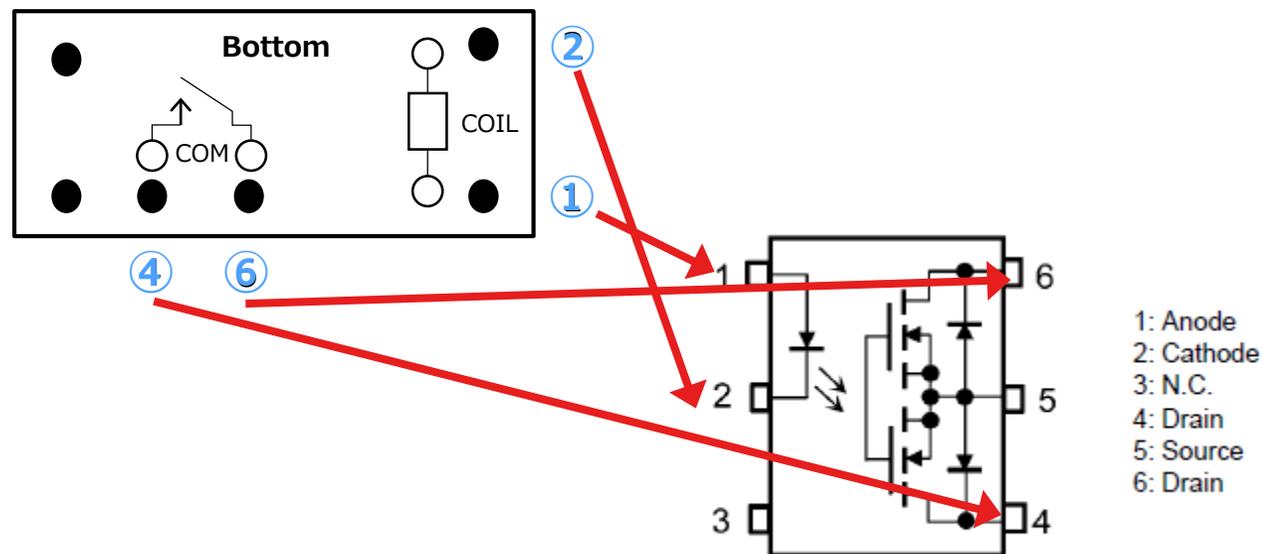
	Mechanical relay (Signal relay)	Photorelay TLP3107	Remarks (Feature of Photorelay)
Lifetime	(With contact limit)	(No contact limit)	Long life
Contact Voltage (OFF Voltage)	AC125 V、DC 60 V	AC 24~32 V DC 48~60 V	Notes : operating voltage condition is different with mechanical relay and photorelay.
Contact Capacity	2A@Ta = 25°C ~ 85°C	3.3A@Ta = 25°C 1.32A@Ta = 85°C	Notes : Photorelay need to consider degradation of on state current by temperature condition.
Contact Resistance (ON Resistance)	100 mΩ (Degraded by On/Off)	60 mΩ (Stable)	High reliability
Isolation Voltage	1.0 kVrms	1.5 kVrms	High isolation voltage
Operation / Release Time	5 ~ 10 ms	1 ~ 5 ms	High speed
Operation Sound	Exist	(no noise)	No noise
Miniaturization	126 mm ²	44 mm ²	Smaller size
Height	5 mm	2.1 mm	Smaller size
Input Power Consumption	(Coil)×100 mW~	(LED)around 0.5 mW~	Less power consumption

Evaluation board for checking photorelay operation

【Appearance of board】



【Terminal sequence】



【Driving guidance】

- Please apply the driving voltage 5V, 12V, 24V to the input side (coil side) with (+) to the pin#1 (pin#1 in TLP3107) and (-) to the pin#2 (pin#2 in TLP3107)
- The output side (contact side) is 1a contact form (AC/DC parallel using). The rating of photo relay is off voltage (60V) and on current (3.3A) at (Ta=25°C). Driving voltage is standard up to 48V DC and 32Vrms AC. The drive current should be within the maximum rating 3.3A (Ta=25°C).

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