

200 V, 0.4 A small photorelay

“TLP3145” is a photorelay featuring an OFF-state output terminal voltage of 200 V and an ON-state current of 0.4 A in the small 2.54SOP4 package.

Fabricated using the latest U-MOS^{III} trench MOSFET process, the new photorelay combines an OFF-state output terminal voltage of 200 V with a controllable ON-state current of up to 0.4 A. This makes TLP3145 a suitable replacement for a 1-Form-A mechanical relay in control of a 100 V AC circuit. Replacing a mechanical relay with a photorelay that is smaller and does not need a relay driver increases system reliability and supports space-saving design. In another plus, the TLP3145 is rated for an operating temperature (max) of 110°C, making it easier to allow for a temperature margin in system-level thermal design.

The latest Gartner market report recognizes Toshiba as the leading manufacturer of optocouplers by sales in 2015 and 2016, with 23 % of sale-based market share in CY2016. (Source: Gartner, Inc. “Market Share: Semiconductor Devices and Applications Worldwide 2016” 30 March, 2017)

Toshiba Electronic Devices & Storage Corporation will continue to develop products that meet the needs of customers by promoting the development of a diverse portfolio of photocouplers and photorelays tailored to market trends.



Features

- SOP small package: 2.54SOP4 [Height 2.1 mm (max), pin pitch 2.54 mm (typ.), 4pin package]
- OFF-state output terminal voltage: 200 V/ON-state current: 0.4 A, 1.2 A (pulsed)/
Operating temperature (max): 110°C
- Normally open (1-Form-A)

Applications

- Industrial equipment (PLC, I/O interface, etc.)
- Building automation system (HVAC^[1], etc.)
- Semiconductor tester
- Security-related equipment
- Replacement of various mechanical relays (AC100 V to AC120 V system)



PLC

Product Specifications

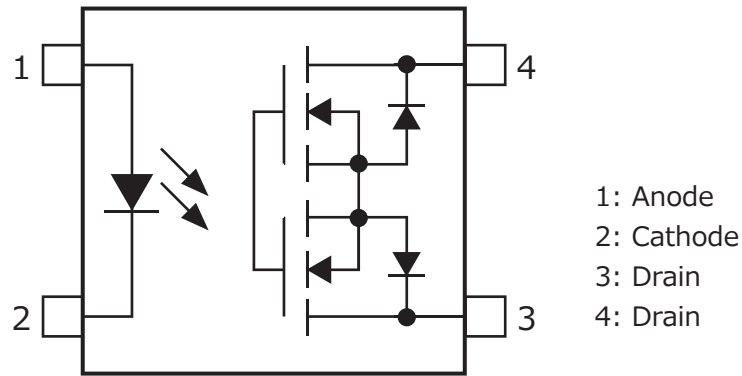
(@T_a=25°C)

Part number	Absolute maximum ratings				Trigger LED current I _{FT} max (mA)	ON-state resistance R _{ON} (Ω)		Output capacitance C _{OFF} typ. (pF)	OFF-state current I _{OFF} max @V _{OFF} =200 V (μA)	Turn-on time t _{ON} max (ms)	Turn-off time t _{OFF} max (ms)
	OFF-state output terminal voltage V _{OFF} (V)	ON-state current I _{ON} (A)	ON-state current (pulsed) I _{ONP} (A)	Operating temperature T _{opr} (°C)		typ.	max				
TLP3145	200	0.4	1.2	-40 to 110	3	1.0	2.0	100	1	0.5	0.5

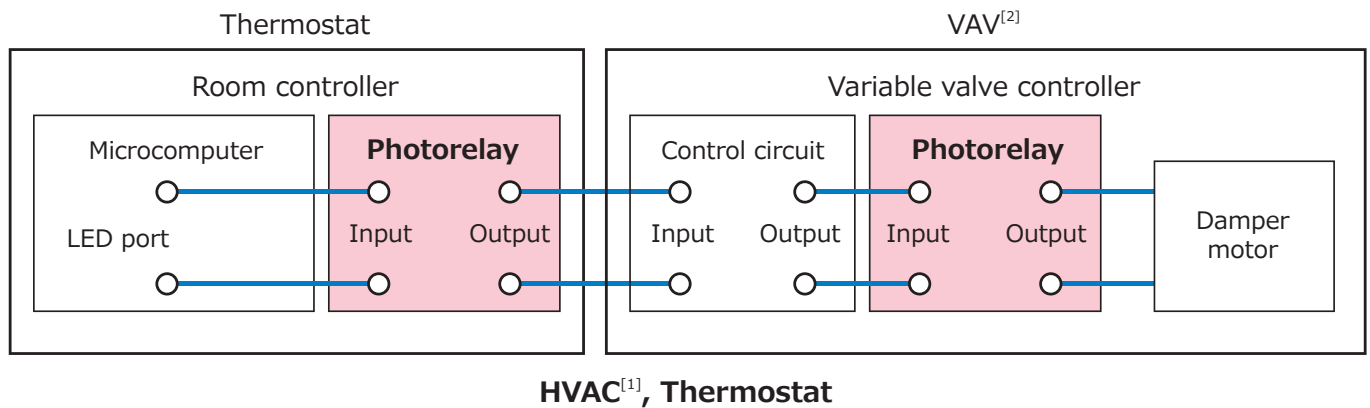
Notes:

[1] Heating, Ventilation and Air Conditioning (HVAC)

Pin Assignment



Application Circuit Example



Notes:

[2] Variable Air Volume (VAV)

The application circuits shown in this document are provided for reference purposes only. Thorough evaluation is required, especially at the mass-production design stage. Toshiba Electronic Devices & Storage Corporation does not grant any license to any industrial property rights by providing these examples of application circuits.

Before creating and producing designs and using, customers must also refer to and comply with the latest versions of all relevant information of this document and the instructions for the application that Product will be used with or for.

TOSHIBA ELECTRONIC DEVICES & STORAGE CORPORATION

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2017-12 Issue