

TOSHIBA Photocoupler GaAs Ired & Photo-Thyristor

TLP541G, TLP542G

Programmable Controllers

AC-Output Module

Solid State Relay

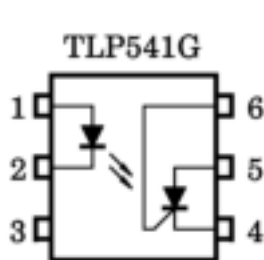
Unit in mm

The TOSHIBA TLP541G consists of a photo-thyristor optically coupled to a gallium arsenide infrared emitting diode in a six lead plastic DIP package.

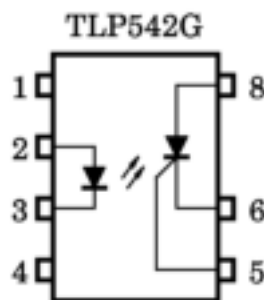
The TOSHIBA TLP542G consists of a photo-thyristor optically coupled to a gallium arsenide infrared emitting diode in a seven lead plastic DIP package.

- Peak off-state voltage: 400 V (min.)
- Trigger LED current: 7 mA (max.)
- On-state current: 150 mA (max.)
- Isolation voltage: 2500 V_{rms} (min.)
- UL recognized: UL1577, file no. E67349

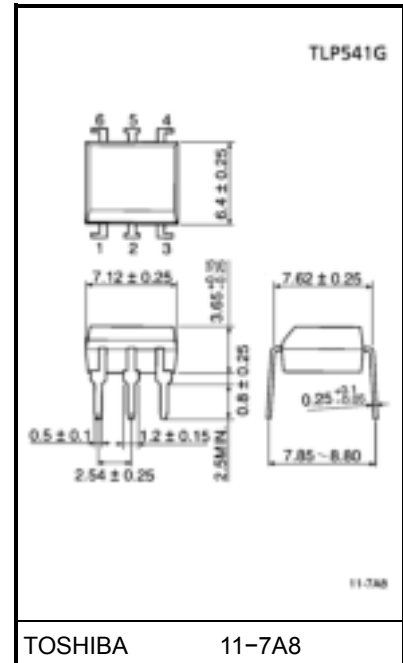
Pin Configuration (top view)



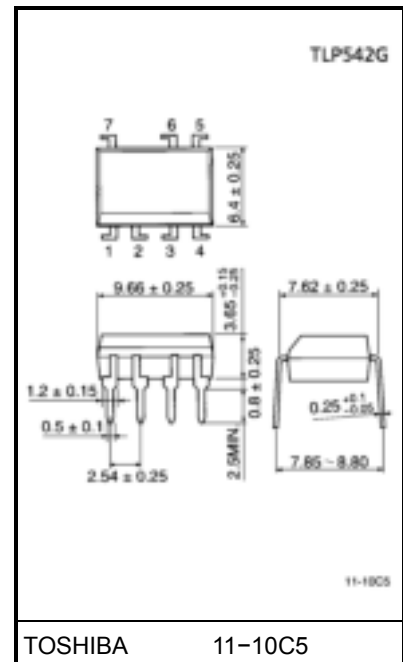
1 : ANODE
2 : CATHODE
3 : N.C.
4 : CATHODE
5 : ANODE
6 : GATE



1 : N.C.
2 : ANODE
3 : CATHODE
4 : N.C.
5 : GATE
6 : CATHODE
7 : ANODE



Weight: 0.4 g



Weight: 0.53 g

Maximum Ratings (Ta = 25°C)

Characteristic		Symbol	Rating	Unit
LED	Forward current	I_F	70	mA
	Forward current derating (Ta ≥ 25°C)	$\Delta I_F / ^\circ\text{C}$	-0.7	mA / °C
	Peak forward current (100 μs pulse, 100 pps)	I_{FP}	1	A
	Reverse voltage	V_R	5	V
	Junction temperature	T_j	125	°C
Detector	Peak forward voltage (RGK = 27kΩ)	V_{DRM}	400	V
	Peak reverse voltage (RGK = 27kΩ)	V_{RRM}	400	V
	On-state current	I_T (RMS)	150	mA
	On-state current derating (Ta ≥ 25°C)	$\Delta I_T / ^\circ\text{C}$	-2.0	mA / °C
	Peak one cycle surge current	I_{TSM}	2	A
	Peak reverse gate voltage	V_{GM}	-5	V
	Junction temperature	T_j	100	°C
Storage temperature range		T_{stg}	-55~125	°C
Operating temperature range		T_{opr}	-30~100	°C
Lead soldering temperature (10 s)		T_{sol}	260	°C
Isolation voltage (AC, 1 min., R.H. ≤ 60%) (Note)		BV_S	2500	V_{rms}

(Note) Device considered a two terminal device: LED side pins shorted together and detector side pins shorted together.

Recommended Operating Conditions

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	V_{AC}	—	—	120	V_{ac}
Forward current	I_F	10	16	25	mA
Operating temperature	T_{opr}	-30	—	85	°C
Gate to cathode resistance	R_{GK}	—	27	33	kΩ
Gate to cathode capacity	C_{GK}	—	0.01	0.1	μF