

TOSHIBA PHOTOCOUPLER GaAs IRED & PHOTO-TRIAC

TLP668J

OFFICE MACHINE.

HOUSEHOLD USE EQUIPMENT.

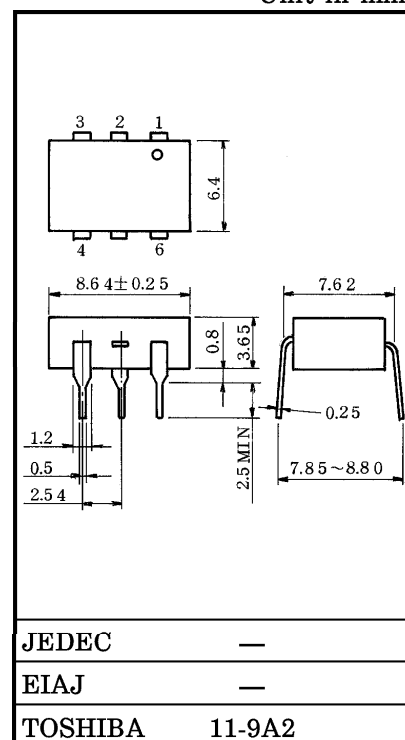
TRIAC DRIVER.

SOLID STATE RELAY.

The TOSHIBA TLP668J consists of a zero voltage crossing turn-on photo-triac optically coupled to a GaAs infrared emitting diode in a six lead plastic DIP package.

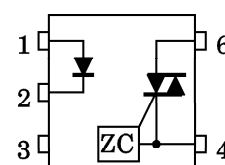
- Peak Off-State Voltage : 600V (Min.)
- Trigger LED Current : 3mA (Max.)
- On-State Current : 100mA (Max.)
- Isolation Voltage : 5000Vrms (Min.)
- UL Recognized : UL1577, File No. E67349

Unit in mm



Weight : 0.44g

PIN CONFIGURATIONS (TOP VIEW)



- 1: ANODE
- 2: CATHODE
- 3: NC
- 4: TERMINAL 1
- 5: TERMINAL 2
- 6: CATHODE

(Z, C, : Zero-cross Circuit)

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- Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.
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MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC			SYMBOL	RATING	UNIT
LED	Forward Current		I _F	30	mA
	Forward Current Derating (Ta = 25°C)		ΔI _F / °C	−0.3	mA / °C
	Peak Forward Current (100μs pulse, 100pps)		I _{FP}	1	A
	Reverse Voltage		V _R	5	V
	Junction Temperature		T _j	125	°C
DETECTOR	Off-State Output Terminal Voltage		V _{DRM}	600	V
	On-State RMS Current	Ta = 25°C	I _T (RMS)	100	mA
		Ta = 70°C		50	
	On-State Current Derating (Ta = 25°C)		ΔI _T / °C	−1.1	mA / °C
	Peak On-State Current (100μs pulse, 120pps)		I _{TP}	2	A
	Peak Nonrepetitive Surge Current (P _W = 10ms, DC = 10%)		I _{TSM}	1.2	A
	Junction Temperature		T _j	110	°C
	Storage Temperature Range		T _{stg}	−55~150	°C
Operating Temperature Range		T _{opr}	−40~100	°C	
Lead Soldering Temperature (10sec.)		T _{sold}	260	°C	
Isolation Voltage (AC, 1 min., R. H. 60%) (Note 1)		BV _S	5000	Vrms	

Note 1: Device considered a two terminal device: Pins 1, 2 and 3 shorted together and pins 4 and 6 shorted together.

INDIVIDUAL ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
LED	Forward Voltage	V_F	$I_F = 10\text{mA}$	1.2	1.4	1.7	V
	Reverse Current	I_R	$V_R = 3\text{V}$	—	—	10	μA
	Capacitance	C_T	$V = 0, f = 1\text{MHz}$	—	30	—	pF
DETECTOR	Peak Off-State Current	I_{DRM}	$V_{DRM} = 600\text{V}$	—	10	1000	nA
	Peak On-State Voltage	V_{TM}	$I_{TM} = 100\text{mA}$	—	—	3.0	V
	Holding Current	I_H	—	—	0.2	—	mA
	Critical Rate of Rise of Off-State Voltage	dv / dt	$V_{in} = 240\text{rms}$ $T_a = 85^\circ\text{C}$	—	500	—	V / μs
	Critical Rate of Rise of Commutating Voltage	$dv / dt (c)$	$V_{in} = 60\text{Vrms}$ $I_T = 15\text{mA}$	—	0.2	—	V / μs

COUPLED ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Trigger LED Current	I_{FT}	$V_T = 6V$, Resistive Load	—	—	3	mA
Inhibit Voltage	V_{IH}	$I_F = \text{Rated } I_{FT}$	—	—	50	V
Leakage in Inhibited State	I_{IH}	$I_F = \text{Rated } I_{FT}$ $V_T = \text{Rated } V_{DRM}$	—	—	600	μA
Capacitance Input to Output	C_S	$V_S = 0$, $f = 1MHz$	—	0.8	—	pF
Isolation Resistance	R_S	$V_S = 500V$, R. H. $\leq 60\%$	5×10^{10}	10^{14}	—	Ω
Isolation Voltage	BV_S	AC, 1 minute	5000	—	—	Vrms
		AC, 1 second (in oil)	—	10000	—	
		DC, 1 minute (in oil)	—	10000	—	Vdc

RECOMMENDED OPERATING CONDITIONS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V_{AC}	—	—	240	Vac
Forward Current	I_F	4.5	6	7.5	mA
Peak On-State Current	I_{TP}	—	—	1	A
Operating Temperature	T_{opr}	-10	—	85	°C

