

TOSHIBA PHOTOCOUPLER GaAs IRED & PHOTO-TRIAC

TLP3064

OFFICE MACHINE
HOUSEHOLD USE EQUIPMENT
TRIAC DRIVER
SOLID STATE RELAY

The TOSHIBA TLP3064 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.

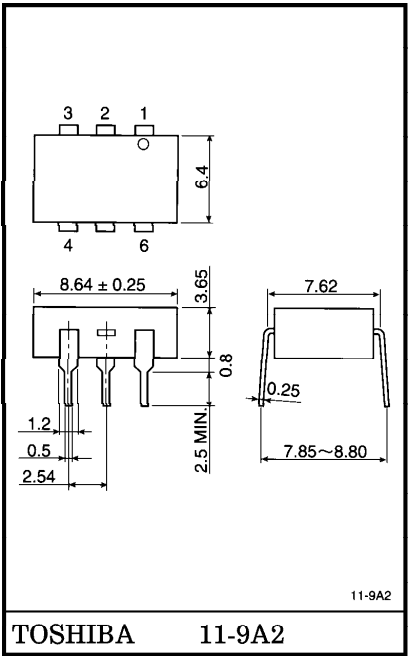
- Peak Off-State Voltage : 600V (Min.)
- Trigger LED Current : 3mA (Max.)
- On-State Current : 100mA (Max.)
- Isolation Voltage : 5000Vrms (Min.)
- UL Recognized : UL1577, File No. E67349
- Option (D4) type
VDE Approved : DIN VDE0884 / 06.92,
Certificate No. 83649

Maximum Operating Insulation Voltage : 890V_{PK}
Highest Permissible Over Voltage : 8000V_{PK}

(Note) When a VDE0884 approved type is needed,
please designate the “Option (D4)”

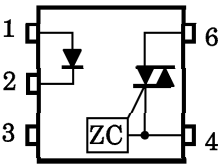
- | | 7.62mm pich
standard type | 10.16mm pich
(LF2) type |
|----------------------|------------------------------|----------------------------|
| ● Creepage Distance | : 7.0mm (Min.) | 8.0mm (Min.) |
| Clearance | : 7.0mm (Min.) | 8.0mm (Min.) |
| Insulation Thickness | : 0.5mm (Min.) | 0.5mm (Min.) |

Unit in mm



Weight : 0.44g

PIN CONFIGURATIONS (TOP VIEW)



- 1: ANODE
- 2: CATHODE
- 3: N.C.
- 4: TERMINAL 1
- 6: TERMINAL 2

(ZC : Zero-cross Circuit)

961001EBC2

● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

● 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.

● The products described in this document are subject to foreign exchange and foreign trade control laws.

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● The information contained herein is subject to change without notice.

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	I_F	30	mA
	Forward Current Derating (Ta $\geq$ 25°C)	$\Delta I_F / ^\circ\text{C}$	-0.3	mA / °C
	Peak Forward Current (100 μ s 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	$I_{T(RMS)}$	100	mA
	Ta = 25°C Ta = 70°C		50	
	On-State Current Derating (Ta $\geq$ 25°C)	$\Delta I_T / ^\circ\text{C}$	-1.1	mA / °C
	Peak On-State Current (100 μ s pulse, 120pps)	I_{TP}	2	A
	Peak Nonrepetitive Surge Current (PW = 10ms, DC = 10%)	I_{TSM}	1.2	A
	Junction Temperature	T_j	115	°C
Storage Temperature Range		T_{stg}	-55~150	°C
Operating Temperature Range		T_{opr}	-40~100	°C
Lead Soldering Temperature (10s)		T_{sol}	260	°C
Isolation Voltage (AC, 1min., R.H. $\leq$ 60%) (Note 1)		BVS	5000	Vrms

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

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

INDIVIDUAL ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
LED	Forward Voltage	V _F	I _F = 10mA	1.2	1.4	1.7	V
	Reverse Current	I _R	V _R = 3V	—	—	10	μA
	Capacitance	C _T	V = 0, f = 1MHz	—	30	—	pF
DETECTOR	Peak Off-State Current	I _{DRM}	V _{DRM} = 600V	—	10	1000	nA
	Peak On-State Voltage	V _{TM}	I _{TM} = 100mA	—	—	3.0	V
	Holding Current	I _H	—	—	0.6	—	mA
	Critical Rate of Rise of Off-State Voltage	dv / dt	V _{in} = 240rms Ta = 85°C	200	500	—	V / μs
	Critical Rate of Rise of Commutating Voltage	dv / dt (c)	V _{in} = 60Vrms I _T = 15mA _{rms}	—	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 = Rated I _{FT}	—	—	50	V
Leakage in Inhibited State	I _{IH}	I _F = Rated I _{FT} V _T = 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. ≤ 60%	1 × 10 ¹²	10 ¹⁴	—	Ω
Isolation Voltage	BV _S	AC, 1 minute	5000	—	—	V _{rms}
		AC, 1 second, in oil	—	10000	—	
		DC, 1 minute, in oil	—	10000	—	V _{dc}

