

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.

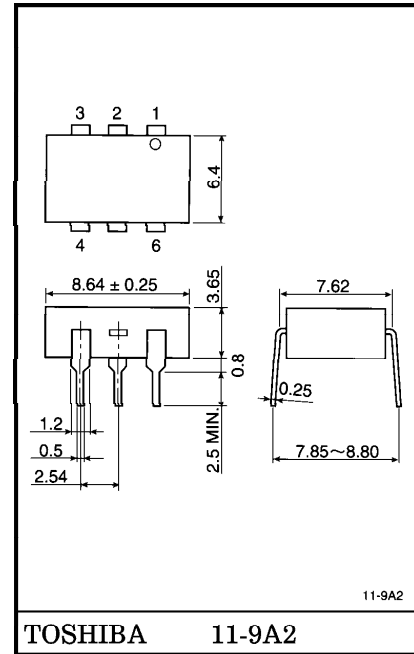
- Peak Off-State Voltage : 600V (Min.)
- Trigger LED Current : 3mA (Max.)
- On-State Current : 100mA (Max.)
- Isolation Voltage : 5000Vrms (Min.)
- UL Recognized : UL1577, File No. E67349
- Option (D4) type  
VDE Approved : DIN VDE0884 / 06.92,  
Certificate No. 83649

Maximum Operating Insulation Voltage : 890V<sub>PK</sub>  
Highest Permissible Over Voltage : 8000V<sub>PK</sub>

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

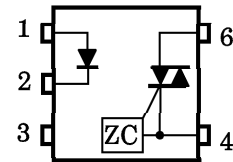
- |                      |                |                      |                   |
|----------------------|----------------|----------------------|-------------------|
|                      |                | 7.62mm pich          | 10.16mm pich      |
|                      |                | <u>standard type</u> | <u>(LF2) type</u> |
| ● 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

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MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	I <sub>F</sub>	30	mA
	Forward Current Derating (Ta ≥ 25°C)	ΔI <sub>F</sub> / °C	-0.3	mA / °C
	Peak Forward Current (100μs pulse, 100pps)	I <sub>FP</sub>	1	A
	Reverse Voltage	V <sub>R</sub>	5	V
	Junction Temperature	T <sub>j</sub>	125	°C
DETECTOR	Off-State Output Terminal Voltage	V <sub>DRM</sub>	600	V
	On-State RMS Current	Ta = 25°C	100	mA
		Ta = 70°C	50	
	On-State Current Derating (Ta ≥ 25°C)	ΔI <sub>T</sub> / °C	-1.1	mA / °C
	Peak On-State Current (100μs pulse, 120pps)	I <sub>TP</sub>	2	A
	Peak Nonrepetitive Surge Current (P <sub>W</sub> = 10ms, DC = 10%)	I <sub>TSM</sub>	1.2	A
	Junction Temperature	T <sub>j</sub>	115	°C
Storage Temperature Range	T <sub>stg</sub>	-55~150	°C	
Operating Temperature Range	T <sub>opr</sub>	-40~100	°C	
Lead Soldering Temperature (10s)	T <sub>sol</sub>	260	°C	
Isolation Voltage (AC, 1min., R.H. ≤ 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 <sub>AC</sub>	—	—	240	Vac
Forward Current	I <sub>F</sub>	4.5	6	7.5	mA
Peak On-State Current	I <sub>TP</sub>	—	—	1	A
Operating Temperature	T <sub>opr</sub>	-10	—	85	°C

## INDIVIDUAL ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
LED	Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 10mA	1.2	1.4	1.7	V
	Reverse Current	I <sub>R</sub>	V <sub>R</sub> = 3V	—	—	10	μA
	Capacitance	C <sub>T</sub>	V = 0, f = 1MHz	—	30	—	pF
DETECTOR	Peak Off-State Current	I <sub>DRM</sub>	V <sub>DRM</sub> = 600V	—	10	1000	nA
	Peak On-State Voltage	V <sub>TM</sub>	I <sub>TM</sub> = 100mA	—	—	3.0	V
	Holding Current	I <sub>H</sub>	—	—	0.6	—	mA
	Critical Rate of Rise of Off-State Voltage	dv / dt	V <sub>in</sub> = 240rms Ta = 85°C	200	500	—	V / μs
	Critical Rate of Rise of Commutating Voltage	dv / dt (c)	V <sub>in</sub> = 60Vrms I <sub>T</sub> = 15mA <sub>rms</sub>	—	0.2	—	V / μs

## COUPLED ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Trigger LED Current	I <sub>FT</sub>	V <sub>T</sub> = 6V, Resistive Load	—	—	3	mA
Inhibit Voltage	V <sub>IH</sub>	I <sub>F</sub> = Rated I <sub>FT</sub>	—	—	50	V
Leakage in Inhibited State	I <sub>IH</sub>	I <sub>F</sub> = Rated I <sub>FT</sub> V <sub>T</sub> = Rated V <sub>DRM</sub>	—	—	600	μA
Capacitance Input to Output	C <sub>S</sub>	V <sub>S</sub> = 0, f = 1MHz	—	0.8	—	pF
Isolation Resistance	R <sub>S</sub>	V <sub>S</sub> = 500V, R.H. ≤ 60%	1 × 10 <sup>12</sup>	10 <sup>14</sup>	—	Ω
Isolation Voltage	B <sub>V</sub> S	AC, 1 minute	5000	—	—	V <sub>rms</sub>
		AC, 1 second, in oil	—	10000	—	
		DC, 1 minute, in oil	—	10000	—	V <sub>dc</sub>

