

TOSHIBA PHOTOCOUPLER GaAlAs IRED & PHOTO-TRIAC

TLP668J

OFFICE MACHINE.

HOUSEHOLD USE EQUIPMENT.

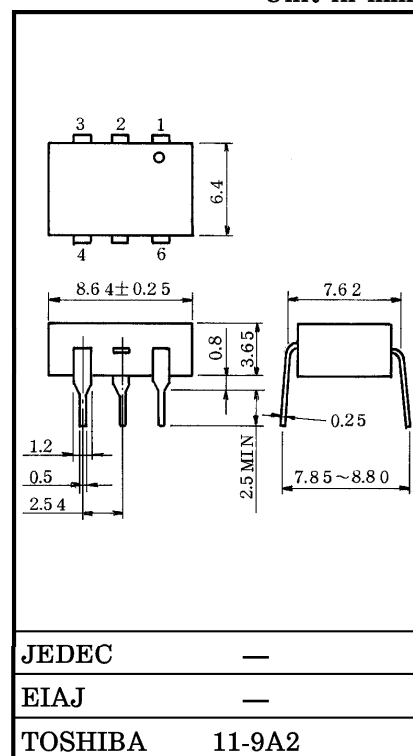
TRIAC DRIVER.

SOLID STATE RELAY.

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

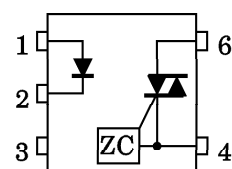
- Peak Off-State Voltage : 600V (Min.)
- Trigger LED Current : 3mA (Max.)
- On-State Current : 100mA (Max.)
- Isolation Voltage : 5000Vrms (Min.)
- UL Recognized : UL1577, File No. E67349

Unit in mm



Weight : 0.44g

PIN CONFIGURATIONS (TOP VIEW)



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

(Z, C, : Zero-cross Circuit)

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	V _{rms}

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)

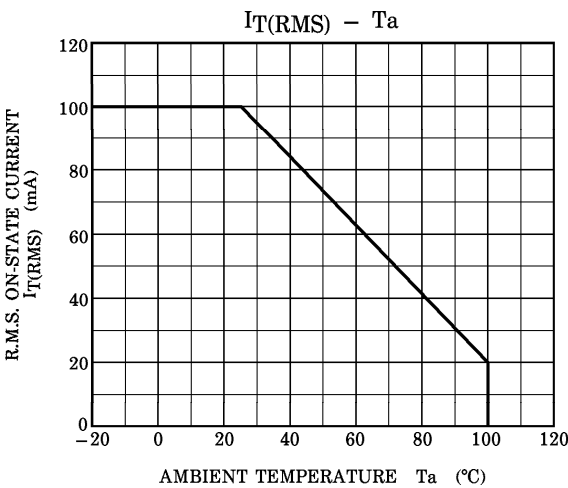
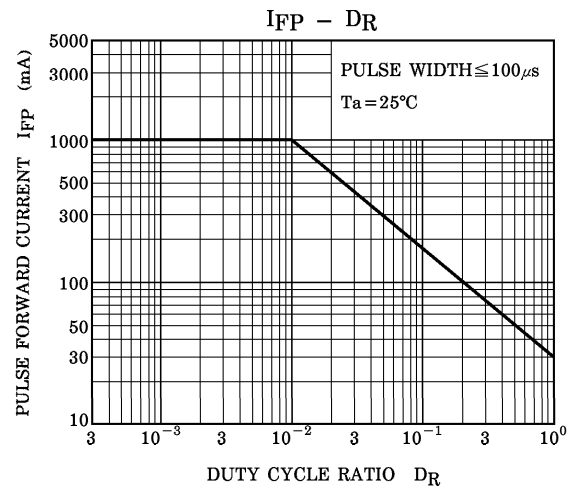
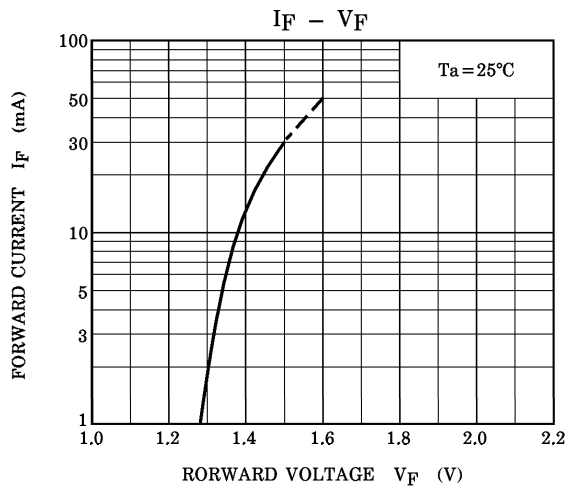
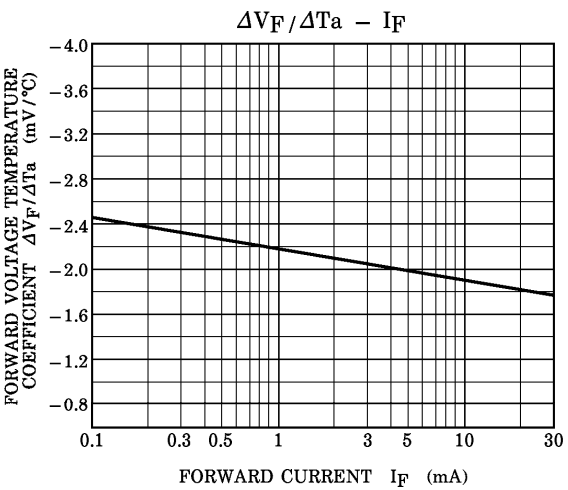
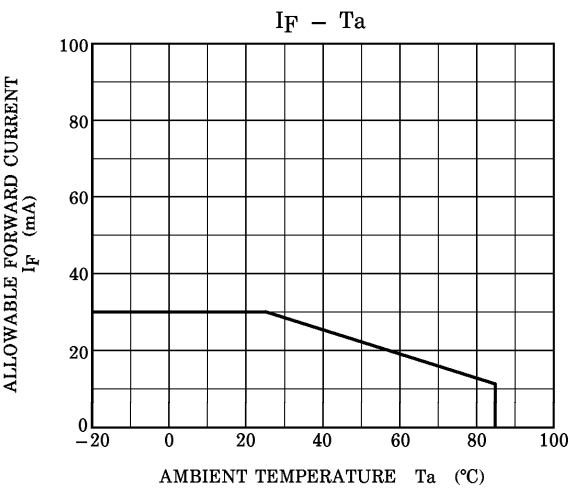
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
LED	Forward Voltage	V_F	$I_F = 10\text{mA}$	1.2	1.4	1.7	V
	Reverse Current	I_R	$V_R = 3\text{V}$	—	—	10	μA
	Capacitance	C_T	$V = 0, f = 1\text{MHz}$	—	30	—	pF
DETECTOR	Peak Off-State Current	I_{DRM}	$V_{DRM} = 600\text{V}$	—	10	1000	nA
	Peak On-State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

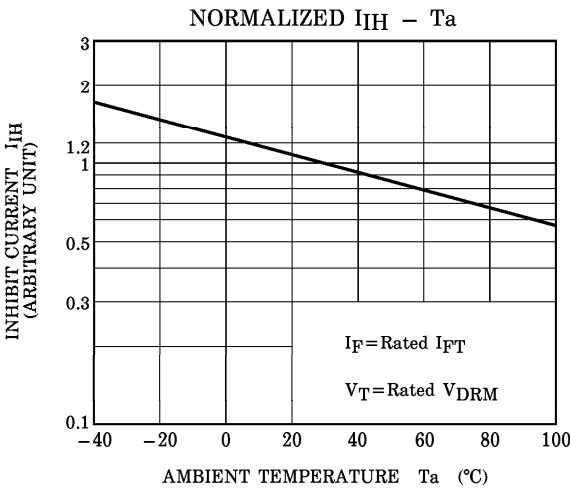
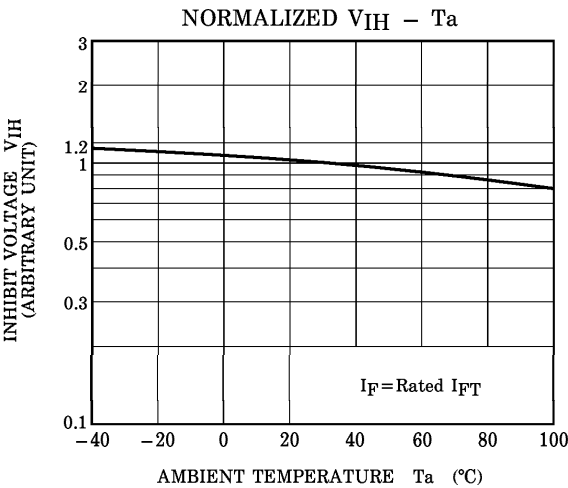
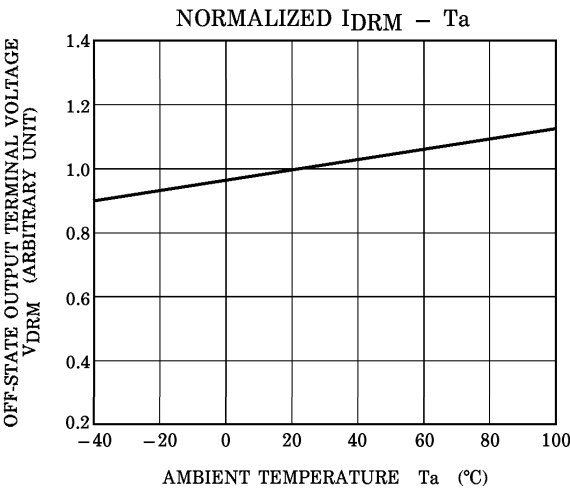
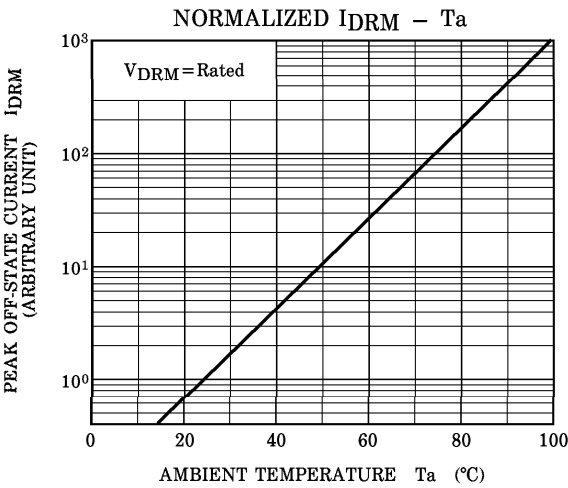
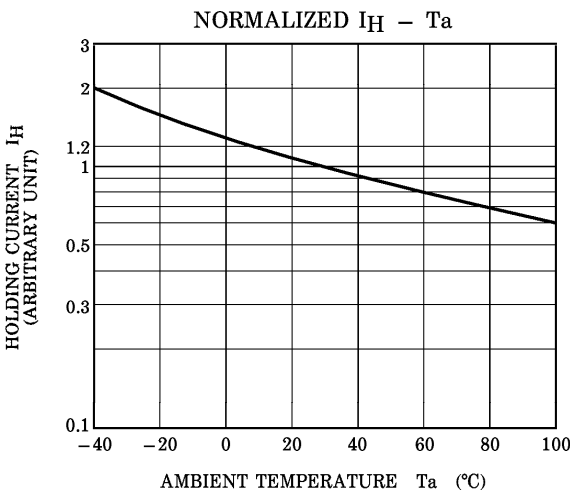
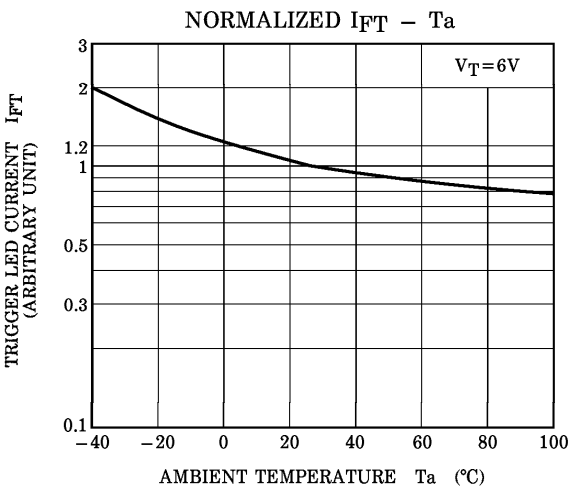
COUPLED ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Trigger LED Current	I_{FT}	$V_T = 6V$, Resistive Load	—	—	3	mA
Inhibit Voltage	V_{IH}	$I_F = \text{Rated } I_{FT}$	—	—	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	—	—	V_{rms}
		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





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