

TOSHIBA Photocoupler GaAlAs Ired & Photo-Triac

TLP668J

Unit in mm

Office Machine.

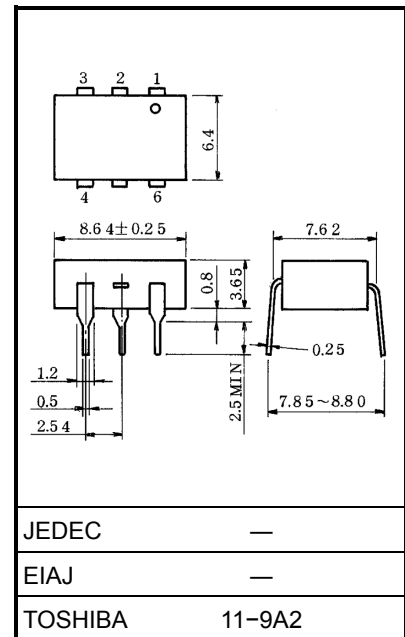
Household Use Equipment.

Triac Driver.

Solid State Relay.

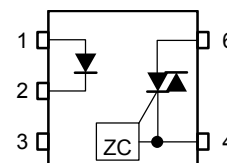
The TOSHIBA TLP668J consists of a zero voltage crossing turn-on photo-triac optically coupled to a GaAlAs infrared emitting diode in a six lead plastic DIP package.

- 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



Weight: 0.44g

Pin Configuration (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)	$\Delta I_F / ^\circ\text{C}$	-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)	$\Delta I_T / ^\circ\text{C}$	-1.1	mA / °C	
	Peak on-state current (100µs pulse, 120pps)	I_{TP}	2	A	
	Peak nonrepetitive surge current (PW = 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, 1min., R.H. 60%) (Note 1)		BV_S	5000	Vrms	

(Note 1): Device considered a two terminal device: Pins1,2 and 3 shorted together and pins 4 and 6 shorted together.

Individual Electrical Characteristics (Ta = 25°C)

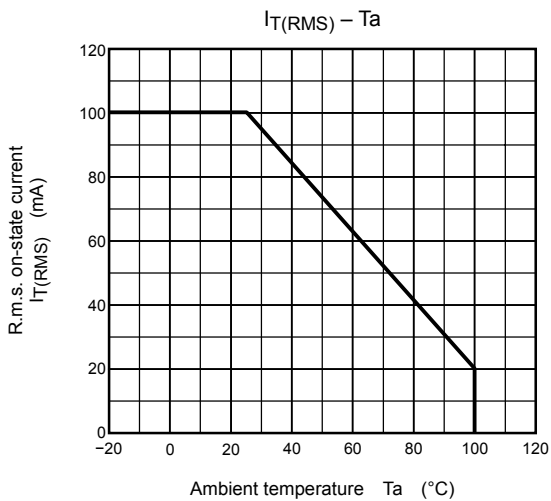
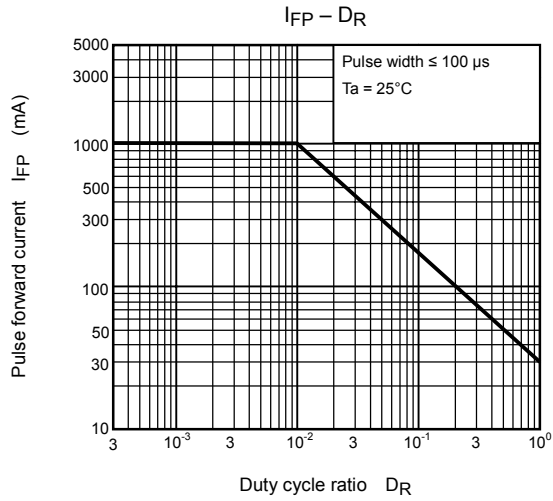
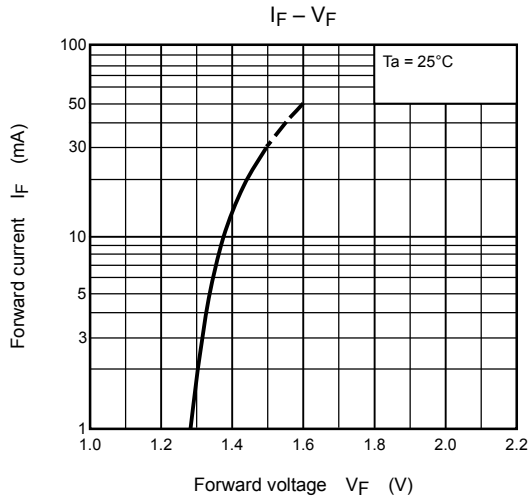
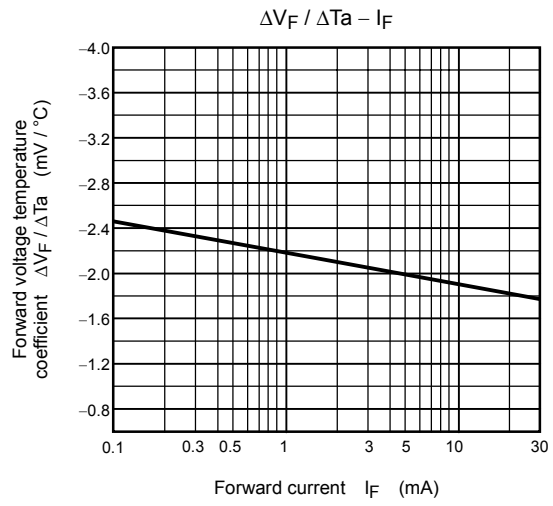
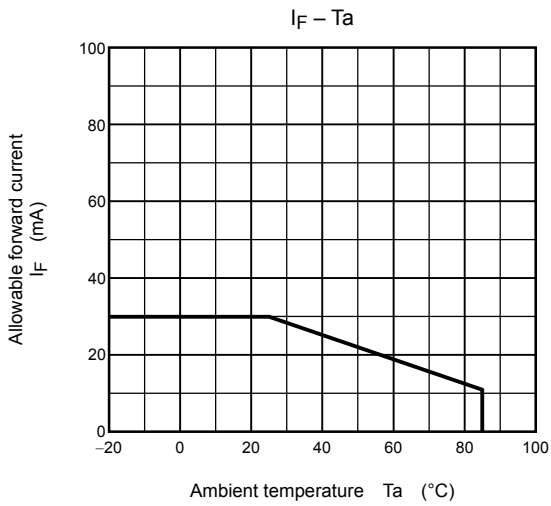
Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit
LED	Forward voltage	V_F	$I_F = 10\text{mA}$	1.2	1.4	1.7	V
	Reverse current	I_R	$V_R = 3\text{V}$	—	—	10	µA
	Capacitance	C_T	$V = 0, f = 1\text{MHz}$	—	30	—	pF
Detector	Peak off-state current	I_{DRM}	$V_{DRM} = 600\text{V}$	—	10	1000	nA
	Peak on-state 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

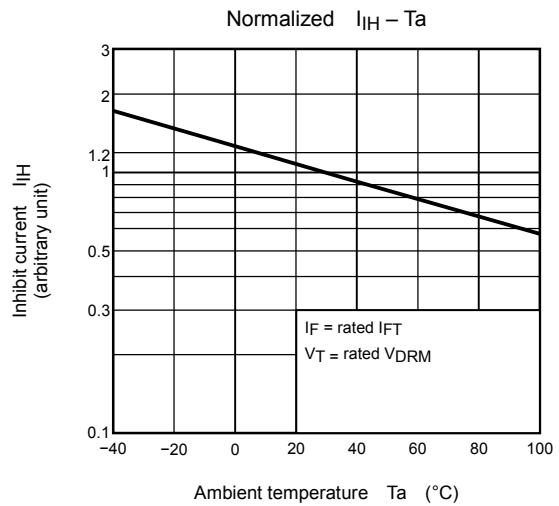
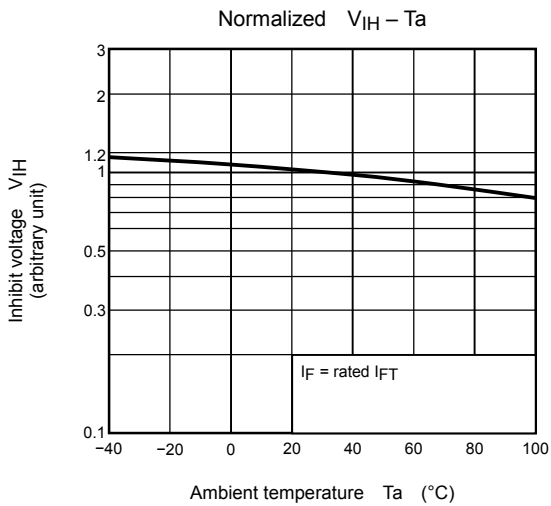
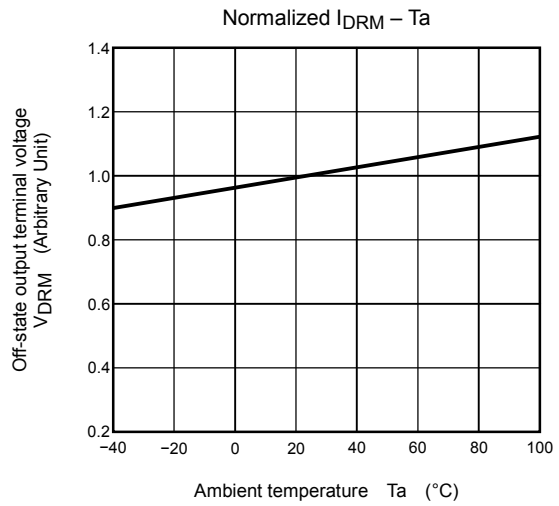
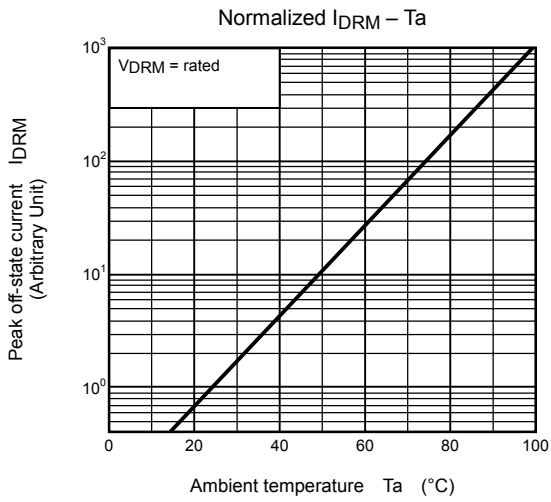
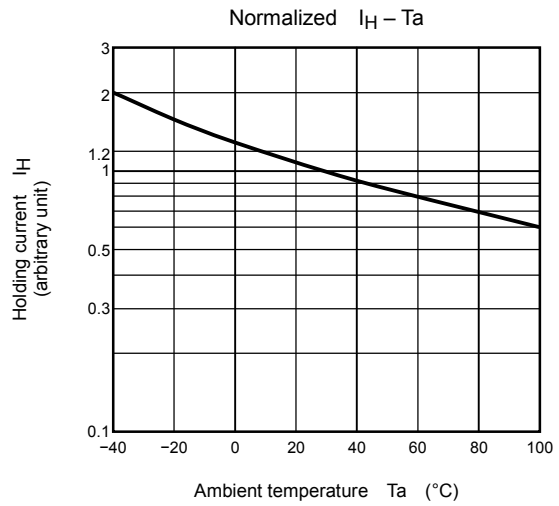
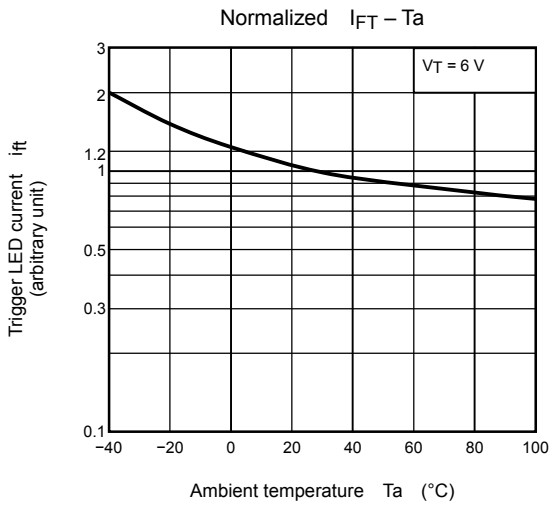
Coupled Electrical Characteristics (Ta = 25°C)

Characteristics	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	$^{\circ}C$





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