

TOSHIBA Photocoupler GaAs Ired & Photo-Triac

TLP763J

Office Machine
Household Use Equipment
Triac Driver
Solid State Relay

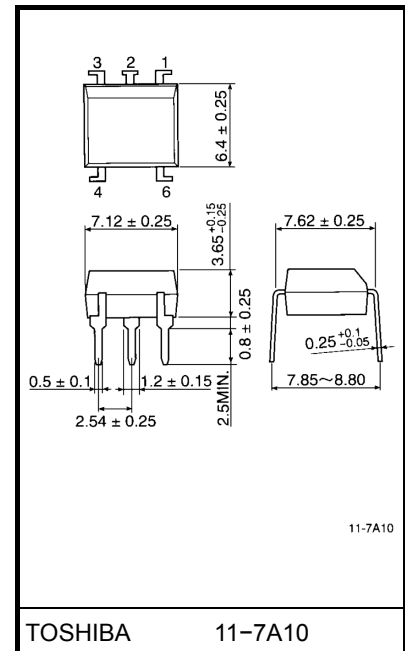
The TOSHIBA TLP763J consists of a GaAs infrared LED optically coupled to a zero voltage crossing turn-on photo-triac in a 6 lead plastic DIP.

- Peak off-state voltage: 600 V (min)
- Trigger LED current: 10 mA (max)
- On-state current: 100 mA (max)
- Isolation voltage: 4000 Vrms (min)
- UL recognized: UL1577, file No. E67349
- BSI approved: BS EN60065: 2002,
Certificate No. 8945
BS EN60950-1: 2002,
Certificate No. 8946
- SEMKO approved: SS EN60065 (EN60065, 1993)
SS EN60950 (EN60950, 1992)
SS EN60335 (EN60335, 1988)
Certificate No. 9522145
- Option (D4) type
VDE approved: DIN EN 60747-5-2
Certificate No. 40009373
Maximum operating insulation voltage : 890 V_{PK}
Highest permissible over voltage : 6000 V_{PK}

(Note) When an EN60747-5-2 approved type is needed,
please designate the "option (D4)".

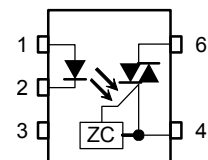
	7.62mm pitch TLP763J type	10.16mm pitch TLP763JF type
• Creepage distance	: 7.0mm (min)	8.0mm (min)
Clearance	: 7.0mm (min)	8.0mm (min)
Internal creepage path	: 4.0mm (min)	4.0mm (min)
Insulation thickness	: 0.5mm (min)	0.5mm (min)

Unit: mm



Weight: 0.42g (typ.)

Pin configuration (top view)



- 1 : Anode
- 2 : Cathode
- 3 : N.C.
- 4 : Terminal 1
- 6 : Terminal 2

Start of commercial production
1994/06

Absolute Maximum Ratings (Ta = 25°C)

Characteristic		Symbol	Rating	Unit	
LED	Forward current	I_F	50	mA	
	Forward current derating (Ta ≥ 53°C)	$\Delta I_F/^\circ\text{C}$	-0.7	mA/°C	
	Peak forward current (100 μs pulse, 100 pps)	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	$I_{T(RMS)}$	Ta = 25°C	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 non-repetitive surge current (PW = 10 ms)	I_{TSM}	1.2	A	
	Junction temperature	T_j	115	°C	
Storage temperature range	T_{stg}	-55 to 125	°C		
Operating temperature range	T_{opr}	-40 to 100	°C		
Lead soldering temperature (10s)	T_{sol}	260	°C		
Isolation voltage (AC, 1 minute, R.H. ≤ 60%)	BV_S	4000	Vrms		

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc.).

Recommended Operating Conditions

Characteristic	Symbol	Min	Typ.	Max	Unit
Supply voltage	V_{AC}	—	—	240	V_{ac}
Forward current	I_F	15	20	25	mA
Peak on-state current	I_{TP}	—	—	1	A
Operating temperature	T_{opr}	-25	—	85	°C

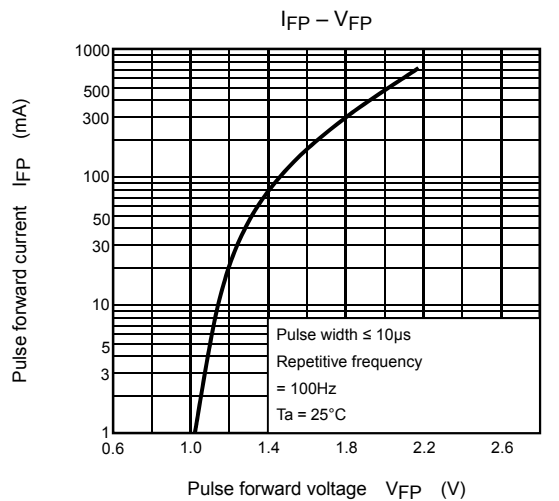
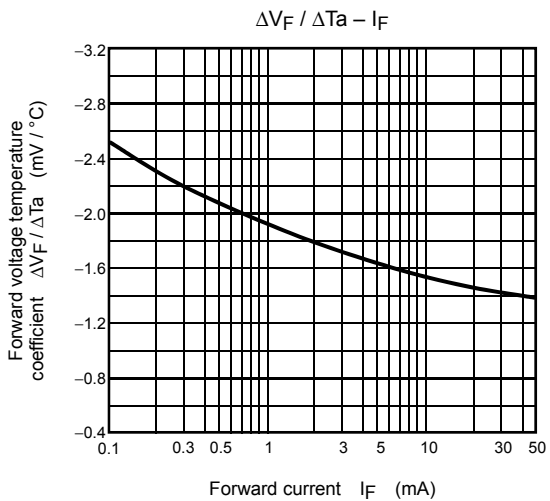
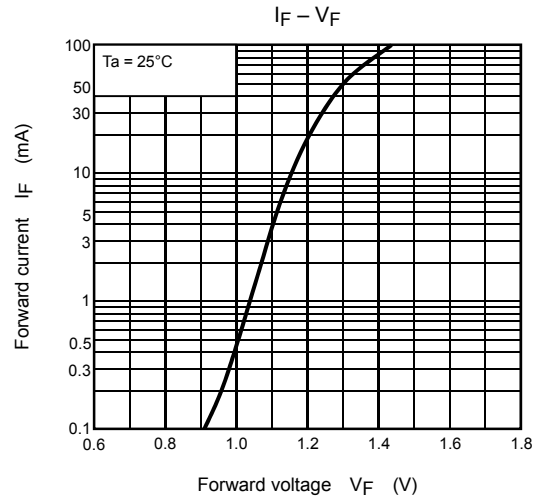
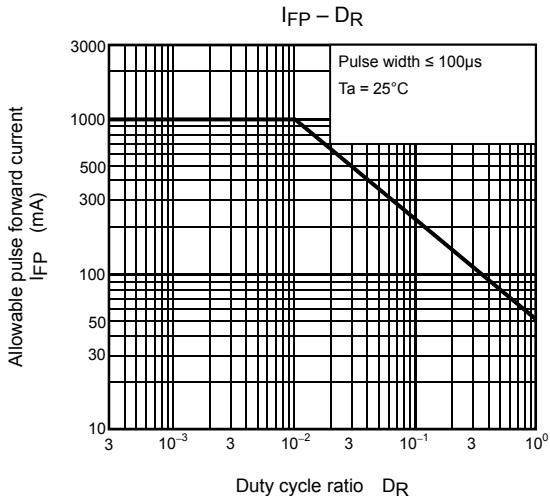
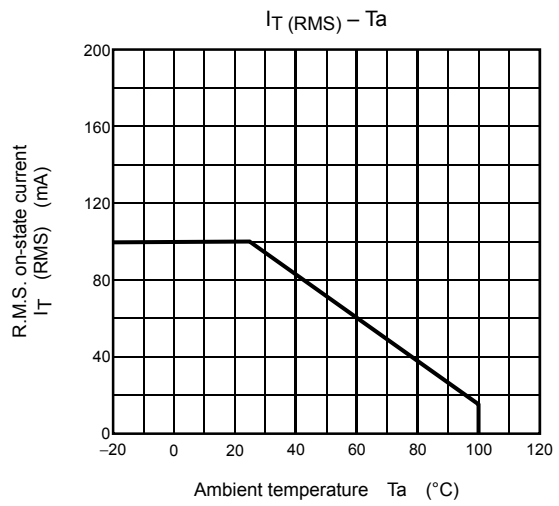
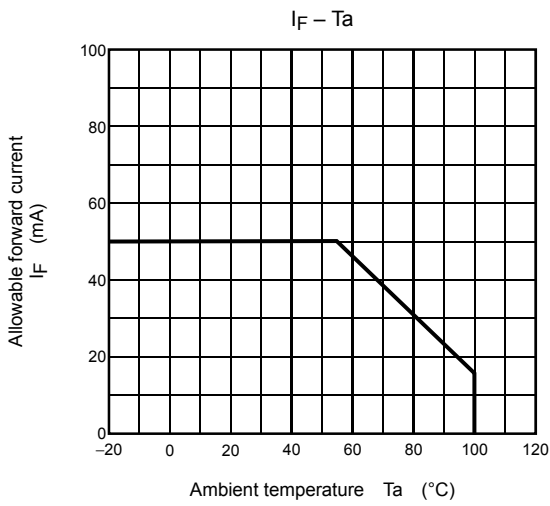
Note: Recommended operating conditions are given as a design guideline to obtain expected performance of the device. Additionally, each item is an independent guideline respectively. In developing designs using this product, please confirm specified characteristics shown in this document.

Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
LED	Forward voltage	V_F	$I_F = 10 \text{ mA}$	1.0	1.15	1.3	V
	Reverse current	I_R	$V_R = 5 \text{ V}$	—	—	10	μA
	Capacitance	C_T	$V_F = 0, f = 1 \text{ MHz}$	—	30	—	pF
Detector	Peak off-state current	I_{DRM}	$V_{DRM} = 600 \text{ V}$	—	10	1000	nA
	Peak on-state voltage	V_{TM}	$I_{TM} = 100 \text{ mA}$	—	1.7	3.0	V
	Holding current	I_H	—	—	0.6	—	mA
	Critical rate of rise of off-state voltage	dv / dt	$V_{in} = 240 \text{ V}, T_a = 85^\circ\text{C}$	—	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}	$V_T = 6 \text{ V}$	—	—	10	mA
Inhibit voltage	V_{IH}	$I_F = \text{rated } I_{FT}$	—	—	50	V
Leakage in inhibited state	I_{IH}	$I_F = \text{rated } I_{FT}$ $V_T = \text{Rated } V_{DRM}$	—	200	600	μA
Capacitance (input to output)	C_S	$V_S = 0, f = 1 \text{ MHz}$	—	0.8	—	pF
Isolation resistance	R_S	$V_S = 500 \text{ V}$	1×10^{12}	10^{14}	—	Ω
Isolation voltage	BV_S	AC, 1 minute	4000	—	—	Vrms
		AC, 1 second, in oil	—	10000	—	
		DC, 1 minute, in oil	—	10000	—	V _{dc}



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