

## TLP763J

Office Machine  
Household Use Equipment  
Triac Driver  
Solid State Relay

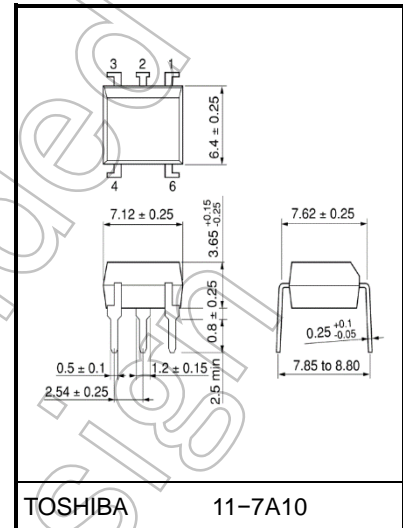
The TOSHIBA TLP763J consists of an infrared emitting diode optically coupled to a zero voltage crossing turn-on photo-triac in a 6 lead plastic DIP.

- 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: UL 1577, File No.E67349
- cUL-recognized: CSA Component Acceptance Service No.5A  
File No.E67349
- VDE-approved : EN 60747-5-5 (Note 1)

Note 1 : When a VDE approved type is needed,  
please designate the **Option(D4)**.

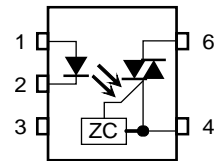
	7.62mm pitch TLP763J type	10.16mm pitch TLP763JF type
• Creepage distance	: 7.0mm (min)	8.0mm (min)
Clearance	: 7.0mm (min)	8.0mm (min)
Internal creepage path	: 4.0mm (min)	4.0mm (min)
Insulation thickness	: 0.5mm (min)	0.5mm (min)

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	
	Diode power dissipation	$P_D$	100	mW	
	Diode power dissipation derating (Ta ≥ 53°C)	$\Delta P_D / ^\circ\text{C}$	-1.4	mW/°C	
	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	
	Output power dissipation	$P_O$	300	mW	
	Output power dissipation derating (Ta ≥ 25°C)	$\Delta P_O / ^\circ\text{C}$	-3.0	mW / °C	
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 (10 s)		$T_{sol}$	260	°C	
Isolation voltage (AC, 60 s, R.H. ≤ 60 %)		$BVS$	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

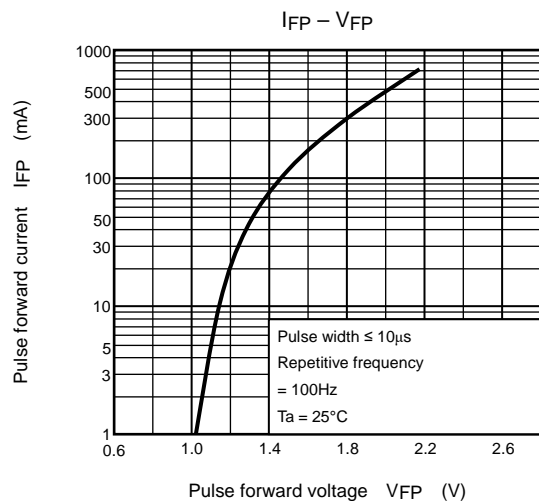
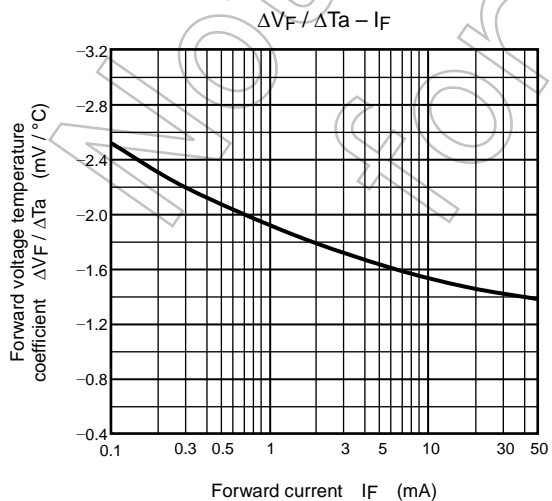
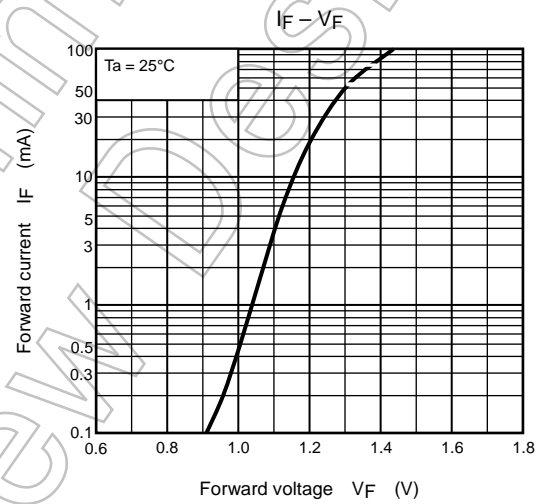
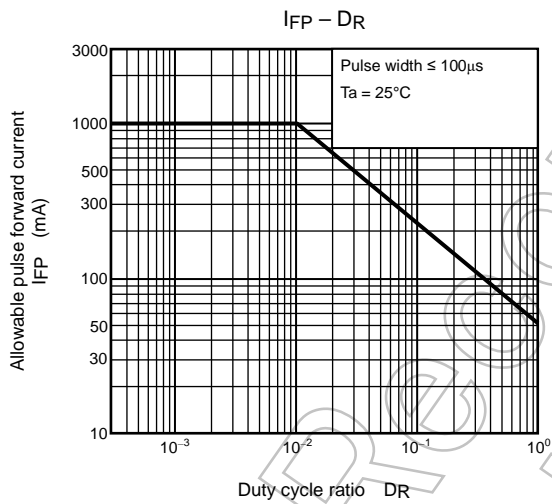
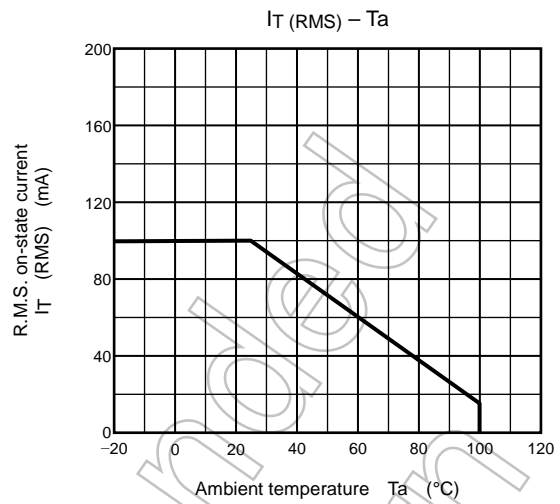
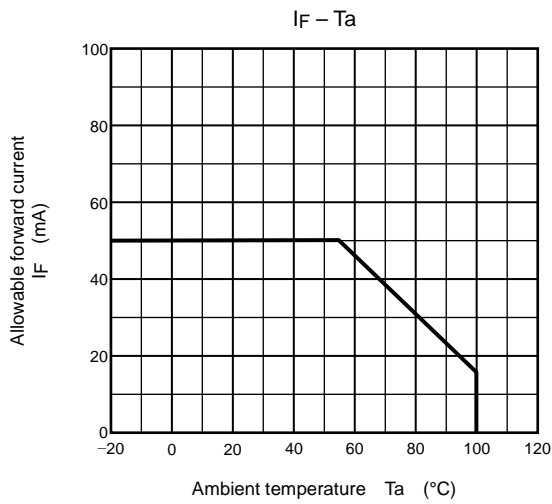
Note: Recommended operating conditions are given as a design guideline to obtain expected performance of the device. Additionally, each item is an independent guideline respectively. In developing designs using this product, please confirm specified characteristics shown in this document.

### Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
LED	Forward voltage	V <sub>F</sub>	I <sub>F</sub> = 10 mA	1.0	1.15	1.3	V
	Reverse current	I <sub>R</sub>	V <sub>R</sub> = 5 V	—	—	10	μA
	Capacitance	C <sub>T</sub>	V <sub>F</sub> = 0 V, f = 1 MHz	—	30	—	pF
Detector	Peak off-state current	I <sub>DRM</sub>	V <sub>DRM</sub> = 600 V	—	10	1000	nA
	Peak on-state voltage	V <sub>TM</sub>	I <sub>TM</sub> = 100 mA	—	1.7	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> = 240 V, Ta = 85 °C	—	500	—	V/μs
	Critical rate of rise of commutating voltage	dv / dt (c)	V <sub>in</sub> = 60Vrms, I <sub>T</sub> = 15 mA	—	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> = 6 V	—	—	10	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>	—	200	600	μA
Capacitance (input to output)	C <sub>S</sub>	V <sub>S</sub> = 0 V, f = 1 MHz	—	0.8	—	pF
Isolation resistance	R <sub>S</sub>	V <sub>S</sub> = 500 V, R.H. ≤ 60 %	1×10 <sup>12</sup>	10 <sup>14</sup>	—	Ω
Isolation voltage	BV <sub>S</sub>	AC, 60 s	4000	—	—	Vrms



NOTE: The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

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