TOSHIBA Photocoupler GaAs Ired & Photo−Triac

TLP763J

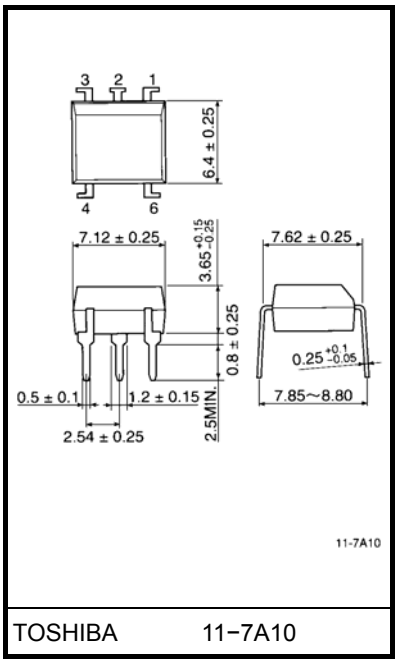
Office Machine

Household Use Equipment

Triac Driver

Solid State Relay

Unit: mm



TOSHIBA 11−7A10

Weight: 0.42g (Typ.)

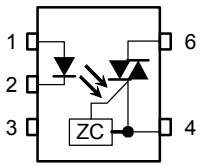
The TOSHIBA TLP763J consists of a GaAs infrared LED optically coupled to a zero voltage crossing turn-on photo-triac in a 6 lead plastic DIP.

- Peak off-state voltage: 600 V (Min.)
- Trigger LED current: 10 mA (Max.)
- On-state current: 100 mA (Max.)
- Isolation voltage: 4000Vrms (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 pich TLP763J type	10.16mm pich 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.)

Pin configuration (top view)



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

Absolute Maximum Ratings (Ta = 25°C)

Characteristic			Symbol	Rating	Unit
LED	Forward current		I_F	50	mA
	Forward current derating (Ta ≥ 53°C)		ΔI_F/°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	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 (PW = 10 ms, DC = 10%)		I_{TSM}	1.2	A
	Junction temperature		T_j	115	°C
Storage temperature range			T_{stg}	−55~125	°C
Operating temperature range			T_{opr}	−40~100	°C
Lead soldering temperature (10s)			T_{sol}	260	°C
Isolation voltage (AC, 1 min., 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.

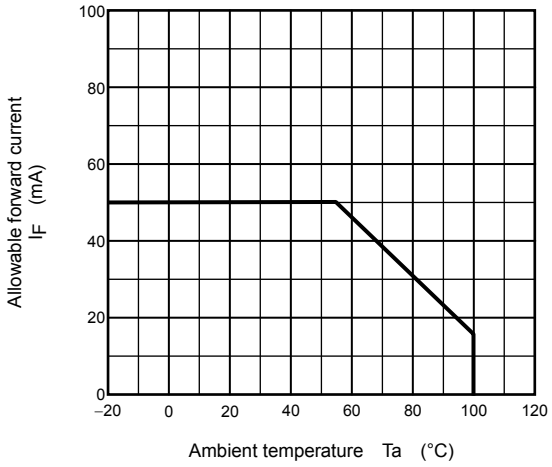
Electrical Characteristics (Ta = 25°C)

Characteristic		Symbol	Test Condition	Min.	Typ.	Max.	Unit
LED	Forward voltage	V_F	I_F = 10 mA	1.0	1.15	1.3	V
	Reverse current	I_R	V_R = 5 V	—	—	10	μA
	Capacitance	C_T	V = 0, f = 1 MHz	—	30	—	pF
Detector	Peak off−state current	I_{DRM}	V_{DRM} = 600 V	—	10	1000	nA
	Peak on−state voltage	V_{TM}	I_{TM} = 100 mA	—	1.7	3.0	V
	Holding current	I_H	—	—	0.6	—	mA
	Critical rate of rise of off−state voltage	dv / dt	Vin = 240 V, Ta = 85°C	—	500	—	V/μs
	Critical rate of rise of commutating voltage	dv / dt (c)	Vin = 60Vrms , I_T = 15 mA	—	0.2	—	V/μs

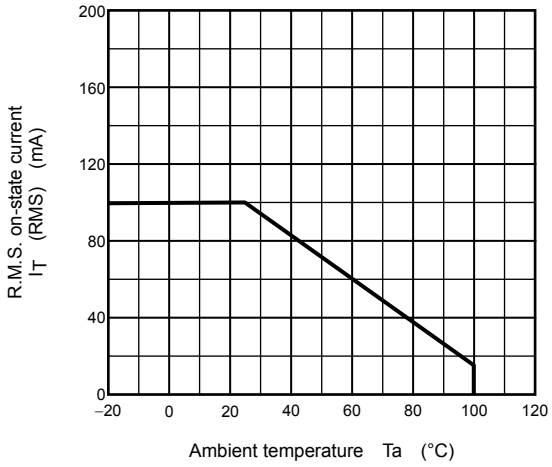
Coupled Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Trigger LED current	I_{FT}	V_T = 6 V	—	—	10	mA
Inhibit voltage	V_{IH}	I_F = rated I_{FT}	—	—	50	V
Leakage in inhibited state	I_{IH}	I_F = rated I_{FT} V_T = Rated V_{DRM}	—	200	600	μA
Capacitance (input to output)	C_S	V_S = 0, f = 1 MHz	—	0.8	—	pF
Isolation resistance	R_S	V_S = 500 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}

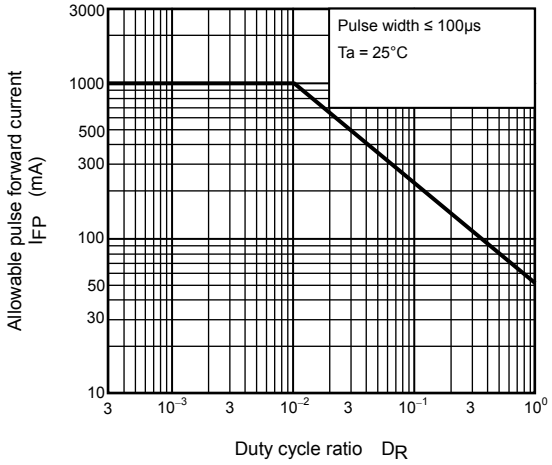
I_F – Ta



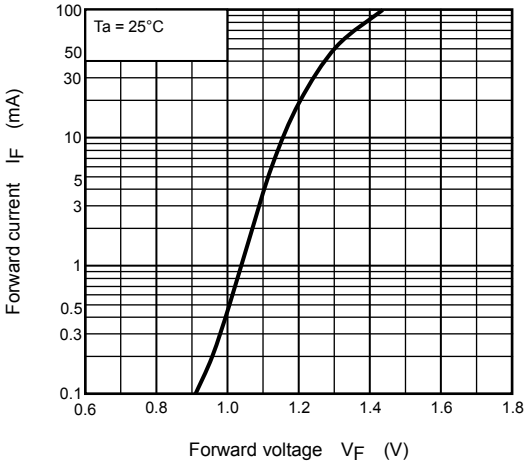
$I_{T\ (RMS)}$ – Ta



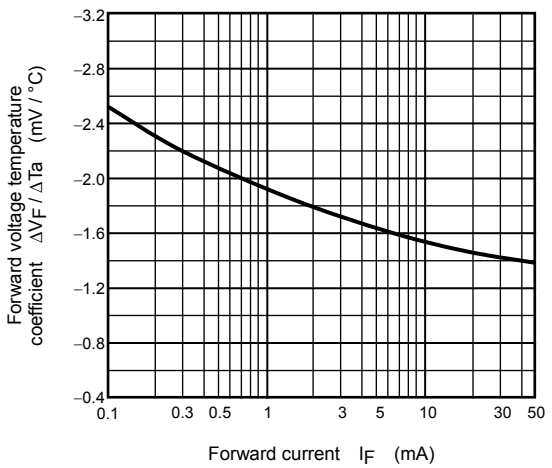
I_{FP} – D_R



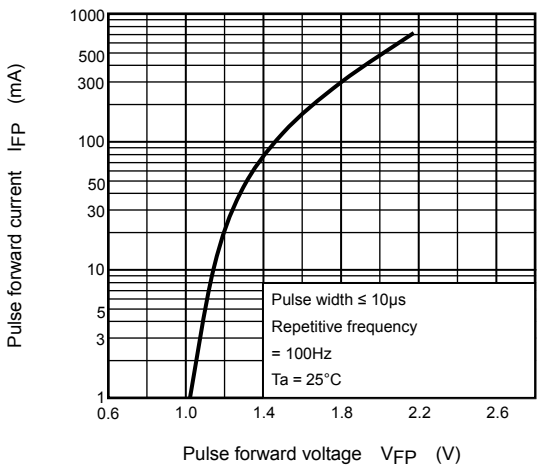
I_F – V_F



ΔV_F / ΔTa – I_F



I_{FP} – V_{FP}



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