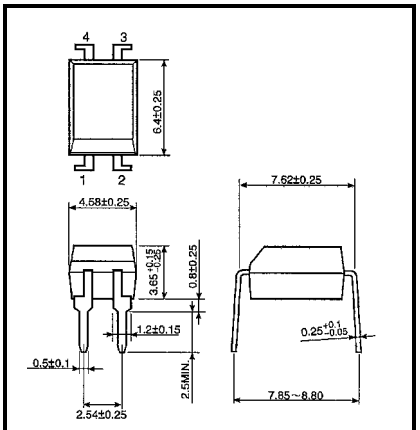
Preliminary TOSHIBA Photocoupler GaAs IRED & PHOTO-TRIAC

TLP361J

Triac Driver
Programmable Controllers
AC-Output Module
Solid State Relay

Unit : mm



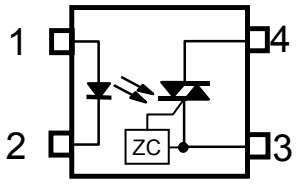
JEDEC	
TOSHIBA	11-5B2

Weight: 0.26 g

TOSHIBA TLP361J consists of a zero voltage crossing turn-on photo-triac optically coupled to a gallium arsenide infrared emitting diode in a four lead plastic DIP package.

- Peak Off-State Voltage : 600V(Min)
- Trigger LED Current : 10mA(Max)
- On-State Current : 70mA(Max)
- Isolation Voltage : 5000Vrms(Min)

PIN CONFIGURATION (TOP VIEW)



1: ANODE
2: CATHODE
3: TERMINAL1
4: TERMINAL2

•Construction Mechanical Rating

	7.62 mm pich standard type	10.16 mm pich TLPXXXF type
Creepage Distance	7.0 mm (Min)	8.0 mm (Min)
Clearance	7.0 mm (Min)	8.0 mm (Min)
Insulation Thickness	0.4 mm (Min)	0.4 mm (Min)

•Trigger LED Current

Classification*	Trigger LED Current (mA) V_T=6V, Ta=25°C		Marking Of Classification
	Min.	Max.	
(IFT7)	—	7	T7
Standard	—	10	T7, blank

*Ex. (IFT7); TLP361J(IFT7)

(Note) Application type name for certification test, please use standard product type name, i.e.
TLP361J(IFT7): TLP361J

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 (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	$I_{T(RMS)}$	70	mA
		Ta = 70°C		40	
	On-State Current Derating (Ta≥25°C)		ΔI_T/°C	-0.67	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	100	°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,1min. , R.H.≤60%) (Note 1)			BV_S	5000	Vrms

(Note 1) : Pins1 and 2 shorted together and pin3 and pin4 shorted together.

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

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 = 1MHz	—	30	—	pF
DETECTOR	Peak Off-State Current	I_{DRM}	V_{DRM} = 600V	—	10	1000	nA
	Peak On-State Voltage	V_{TM}	I_{TM} = 70mA	—	1.7	2.8	V
	Holding Current	I_H	—	—	0.6	—	mA
	Critical Rate of Rise of Off-State Voltage	dv/dt	Vin = 240Vrms , Ta = 85°C (Note2)	—	500	—	V/μs
	Critical Rate of Rise of Commutating Voltage	dv/dt(c)	Vin = 60Vrms , I_T = 15mA (Note2)	—	0.2	—	V/μs

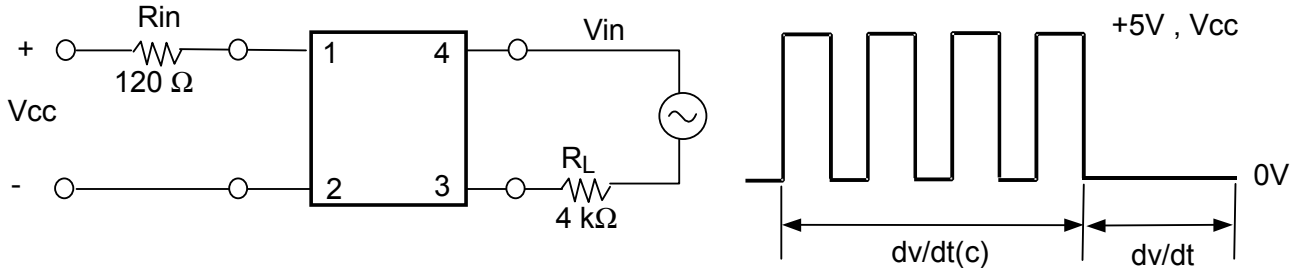
Coupled Electrical Characteristics (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Trigger LED Current	I_{FT}	V_T = 6V	—	—	10	mA
Inhibit Voltage	V_{IH}	I_F = Rated I_{FT}	—	—	20	V
Leakage in Inhibited State	I_{IH}	I_F = Rated I_{FT} V_T = Rated V_{DRM}	—	200	600	μA
Turn-on Time	t_{ON}	V_D = 6 → 4V , R_L = 100Ω I_F = Rated I_{FT}X1.5	—	30	100	μs

Isolation Characteristics (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Capacitance (Input to Output)	C_S	V_S=0 , f=1MHz	—	0.8	—	pF
Isolation Resistance	R_S	V_S=500V, R.H.≤60%	1×10^{12}	10^{14}	—	Ω
Isolation Voltage	BV_S	AC , 1minute	5000	—	—	Vrms
		AC , 1second,in oil	—	10000	—	
		DC , 1minute,in oil	—	10000	—	Vdc

(Note 2) : dv/dt TEST CIRCUIT



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