TLP741G

OFFICE MACHINE.
HOUSEHOLD USE EQUIPMENT.
SOLID STATE RELAY.
SWITCHING POWER SUPPLY.

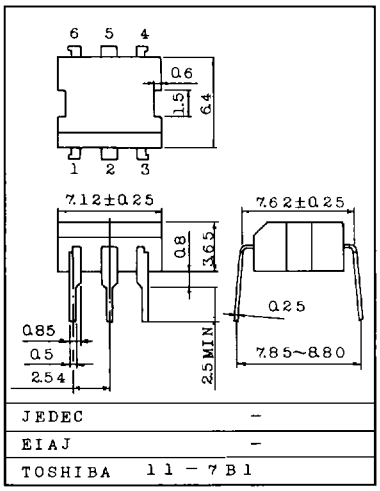
The TOSHIBA TLP741G consists of a photo-thyristor optically coupled to a gallium arsenide infrared emitting diode in a six lead plastic DIP package.

- Peak Off-State Voltage : 400V Min.
- Trigger LED Current : 10mA Max.
- On-State Current : 150mA Max.
- UL Recognized : UL1577, File No. E67349
- BSI Approved : BS415:1990, BS7002:1989 (EN60950)
  Certificate No. 6617
  Isolation Voltage : 4000V_{rms} (Min)
- Option (D4) type
  VDE Approved : DIN VDE0884/08.87, Certificate No. 65640
  Maximum Operating Insulation Voltage : 630V_{PK}
  Highest Permissible Over Voltage : 6000V_{PK}

(Note) When a VDE0884 approved type is needed, please designate the " Option (D4) "

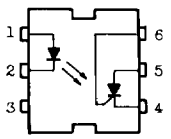
		7.62mm pich standard type	10.16mm pich (LF2) type
. Creepage Distance	:	7.0mm (Min)	8.0mm (Min)
Clearance	:	7.0mm (Min)	8.0mm (Min)
Insulation Thickness	:	0.5mm (Min)	0.5mm (Min)

Unit in mm



Weight: 0.35g

PIN CONFIGURATIONS (TOP VIEW)



1: ANODE
2: CATHODE
3: NC
4: CATHODE
5: ANODE
6: GATE

MAXIMUM RATING (Ta=25°C)

	CHARACTERISTIC	SYMBOL	RATING	UNIT
LED	Forward Current	I_F	60	mA
	Forward Current Derating (Ta≧39°C)	ΔI_F/°C	-0.7	mA/°C
	Peak Forward Current (100μs pulse, 100pps)	I_{FP}	1	A
	Power Dissipation	P_D	100	mW
	Power Dissipation Derating (Ta≧25°C)	ΔP_D/°C	-1.0	mW/°C
	Reverse Voltage	V_R	5	V
	Junction Temperature	Tj	125	°C
DETECTOR	Peak Forward Voltage (R_{GK}=27KΩ)	V_{DRM}	400	V
	Peak Reverse Voltage (R_{GK}=27KΩ)	V_{RRM}	400	V
	On-State Current	$I_{T(RMS)}$	150	mA
	On-State Current Derating (Ta≧25°C)	ΔI_T/°C	-2.0	mA/°C
	Peak On-State Current (100μs pulse, 120pps)	I_{TP}	3	A
	Peak One Cycle Surge Current	I_{TSM}	2	A
	Peak Reverse Gate Voltage	V_{GM}	5	V
	Power Dissipation	P_D	150	mW
	Power Dissipation Derating (Ta≧25°C)	ΔP_D/°C	-2.0	mW/°C
	Junction Temperature	Tj	100	°C
Storage Temperature Range		Tstg	-55~150	°C
Operating Temperature Range		Topr	-55~100	°C
Lead Soldering Temperature (10sec.)		Tsold	260	°C
Total Package Power Dissipation		P_T	250	mW
Total Package Power Dissipation Derating (Ta≧25°C)		ΔP_T/°C	-3.3	mW/°C
Isolation Voltage (AC, 1 min, RH≦60%)		BVS	4000	Vrms

INDIVIDUAL ELECTRICAL CHARACTERISTICS (Ta=25°C)

	CHARACTERISTIC	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
LED	Forward Voltage	V_F	I_F=10mA		1.0	1.15	1.3	V
	Reverse Current	I_R	V_R=5V		-	-	10	μA
	Capacitance	C_T	V=0, f=1MHz		-	30	-	pF
DETECTOR	Off-State Current	I_{DRM}	V_{AK}=400V, R_{GK}=27kΩ	Ta=25°C	-	10	5000	nA
				Ta=100°C	-	1	100	μA
	Reverse Current	I_{RRM}	V_{KA}=400V, R_{GK}=27kΩ	Ta=25°C	-	10	5000	nA
				Ta=100°C	-	1	100	μA
	On-State Voltage	V_{TM}	I_{TM}=100mA		-	0.9	1.3	V
	Holding Current	I_H	R_{GK}=27kΩ		-	0.2	-	mA
	Off-State dv/dt	dv/dt	V_D=280V, R_{GK}=27kΩ		5	10	-	V/μs
	Capacitance	C_j	V=0, f=1MHz					
			Anode to Gate		-	20	-	pF
			Gate to Cathode		-	350	-	

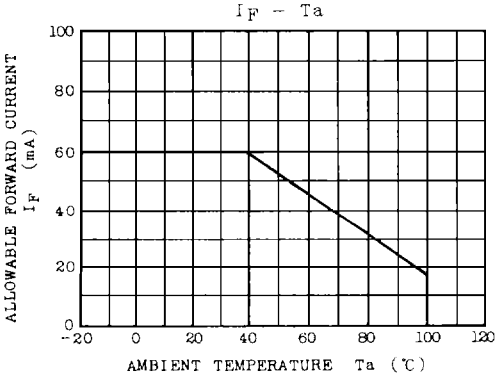
COUPLED CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Trigger LED Current	I_{FT}	V_{AK}=6V, R_{GK}=27kΩ	-	4	10	mA
Turn-on Time	t_{on}	I_F=30mA, V_{AA}=50V, R_{GK}=27kΩ	-	10	-	μs
Coupled dv/dt	dv/dt	V_S=500V, R_{GK}=27kΩ	500	-	-	V/μs
Capacitance Input to Output	C_S	V_S=0, f=1MHz	-	0.8	-	pF
Isolation Resistance	R_S	V_S=500V	5×10^{10}	10^{14}	-	Ω
Isolation Voltage	BV_S	AC, 1 minute	4000	-	-	Vrms
		AC, 1 second	-	10000	-	
		DC, 1 minute	-	10000	-	Vdc

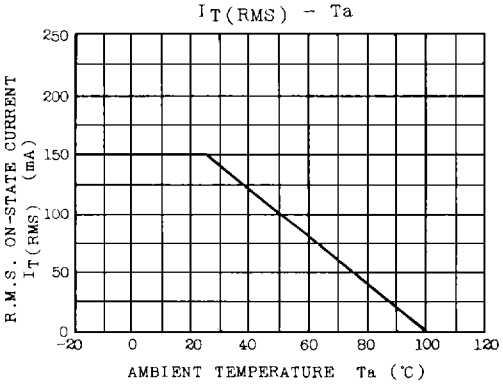
RECOMMENDED OPERATING CONDITIONS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V_{AC}	-	-	120	Vac
Forward Current	I_F	15	20	25	mA
Operating Temperature	Topr	-25	-	85	°C
Gate to Cathode Resistance	R_{GK}	-	27	33	kΩ
Gate to Cathode Capacity	C_{GK}	-	0.01	0.1	μF

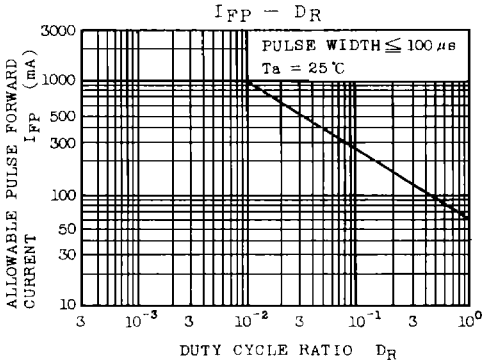
I_F – Ta



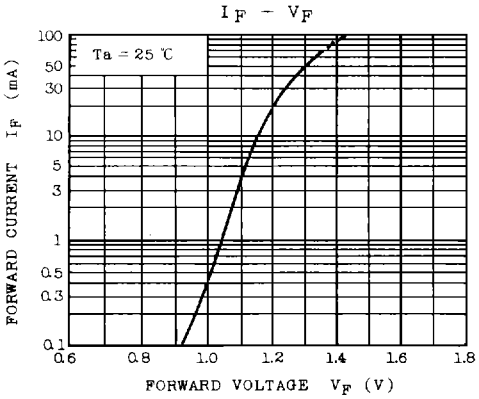
$I_{T(RMS)}$ – Ta



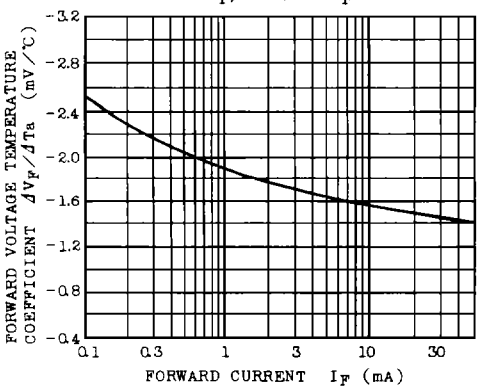
I_{FP} – D_R



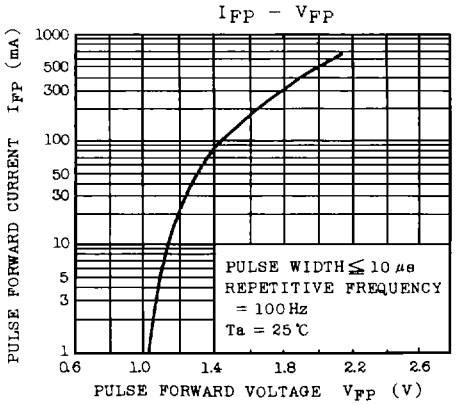
I_F – V_F



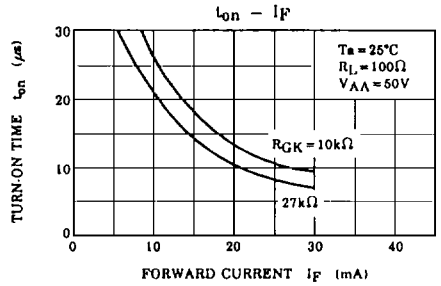
$\Delta V_F/\Delta Ta$ – I_F



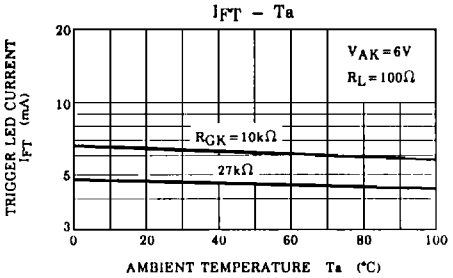
I_{FP} – V_{FP}



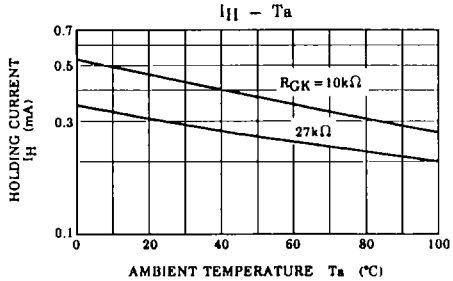
t_{on} – I_F



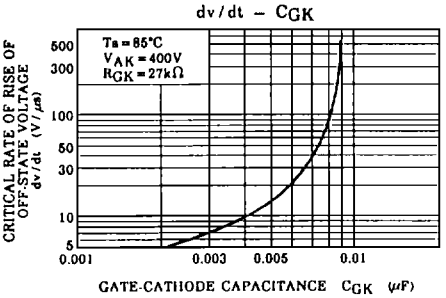
I_{FT} – Ta



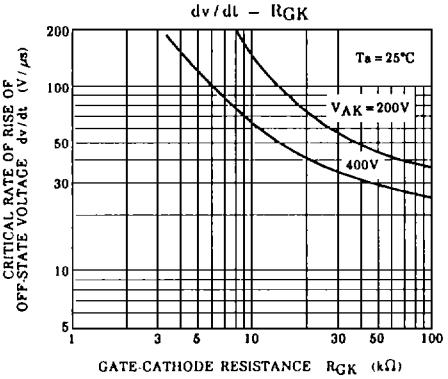
I_H – Ta



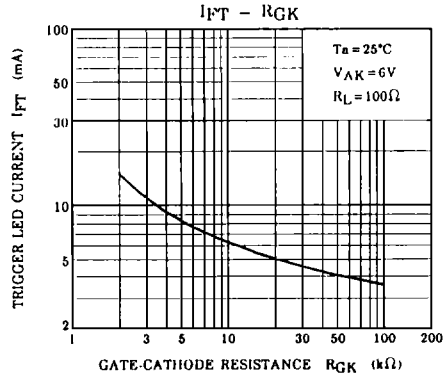
dv/dt – C_{GK}



dv/dt – R_{GK}



I_{FT} – R_{GK}



I_H – R_{GK}