

TOSHIBA PHOTO DIODE SILICON PN

TPS721A

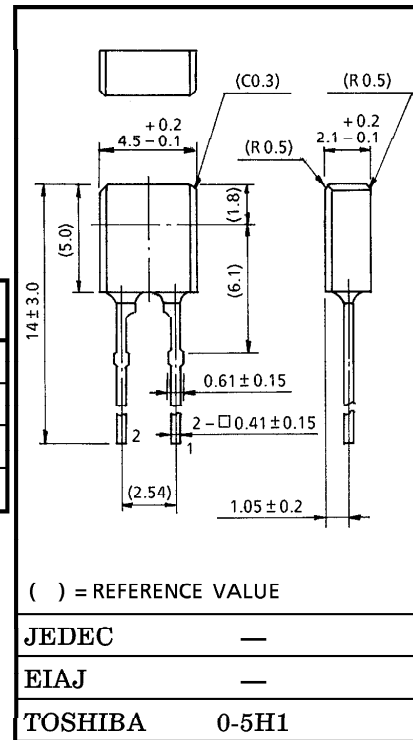
LIGHT RECEIVING DEVICE FOR PLASTIC FIBER / POLYMER CLAD FIBER

Unit in mm

- Small dark current : $I_D = 0.5 \text{ nA (Typ.)}$
- High current transfer ratio : $S_f = 0.36 \text{ A / W (Typ.)}$
- High speed application is possible : $f_c = 70 \text{ MHz (Typ.)}$

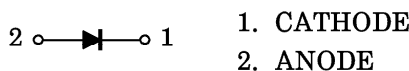
MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Reverse Voltage	V_R	50	V
Power Dissipation	P_D	150	mW
Operating Temperature Range	T_{opr}	-30~85	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40~100	$^\circ\text{C}$



Weight : 0.12g (Typ.)

PIN CONNECTION



ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Dark Current	I_D	$V_R = 10 \text{ V}$	—	0.5	8	nA
Fiber Coupling Sensitivity (Note)	S_f	$V_R = 10 \text{ V}, \lambda = 660 \text{ nm}, P_f = 1 \mu\text{W}$	0.33	0.36	—	A / W
Peak Sensitivity Wavelength	λ_P	$V_R = 10 \text{ V}$	—	840	—	nm
Directional Angle Half Value Width	$\theta_{\frac{1}{2}}$	$V_R = 10 \text{ V}$	—	± 65	—	$^\circ$
Capacitance Between Terminals	C_T	$V_R = 10 \text{ V}, f = 1 \text{ MHz}$	—	10	—	pF
Switching Time	Rise Time	$V_R = 10 \text{ V}, R_L = 50 \Omega$	—	4	—	ns
	Fall Time		—	4	—	
Cut-off Frequency	f_c	$V_R = 10 \text{ V}, R_L = 50 \Omega$	—	70	—	MHz

Note : Plastic fiber used : Fiber length 0.5m, Core diameter 980 μm , NA 0.5.

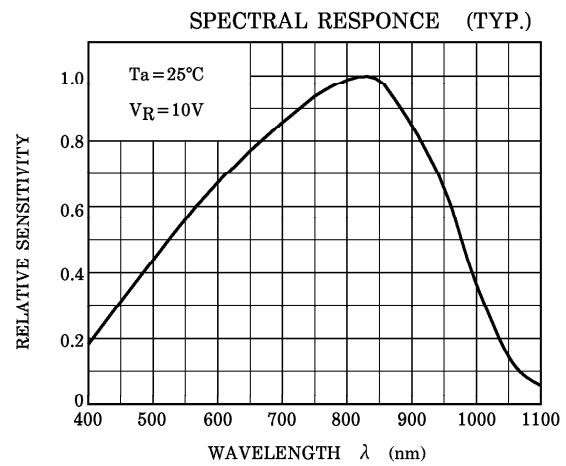
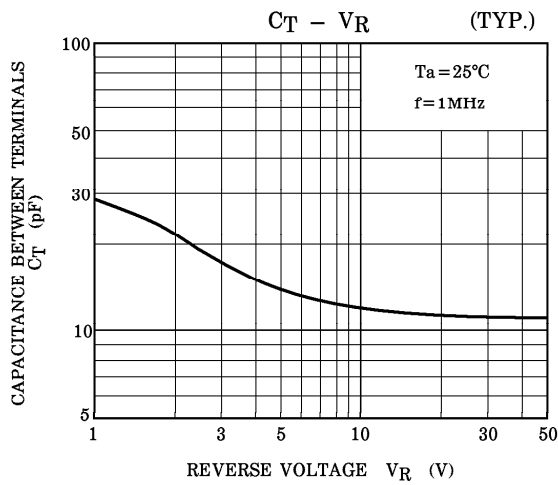
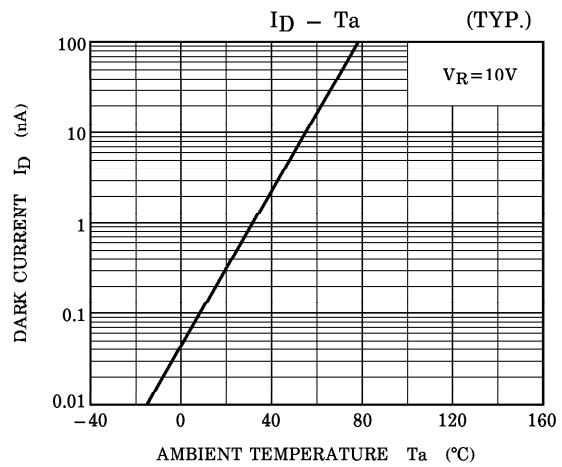
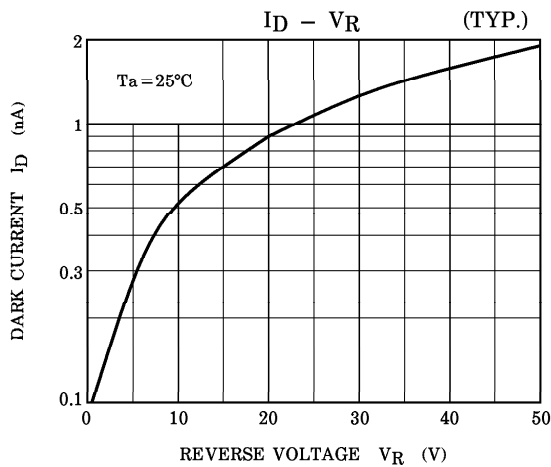
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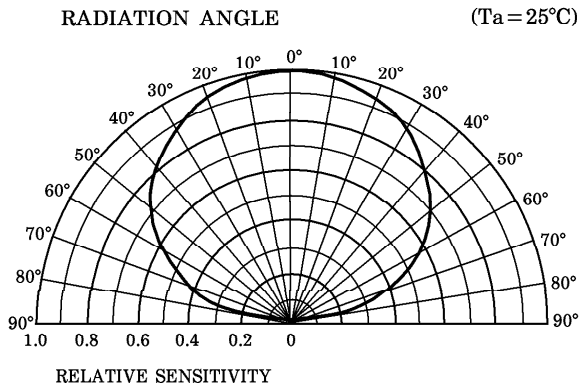
PRECAUTION

Please be careful of the followings.

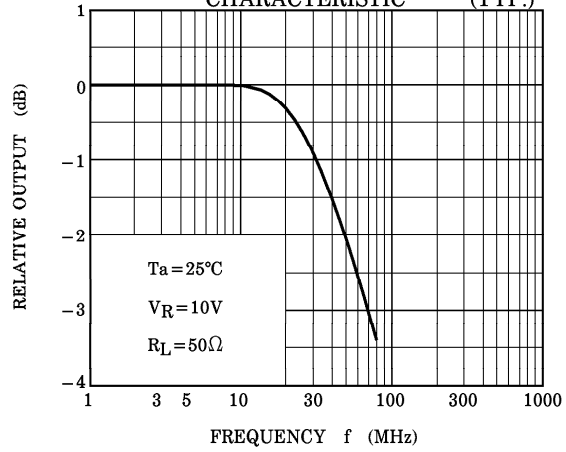
1. Soldering temperature : 260°C MAX. Soldering time : 3s MAX.
(Soldering portion of lead : above 2.5mm from the body of the device)
2. If the lead is formed, the lead should be formed at a distance of 2.5mm from the body of the device.
Soldering shall be performed after lead forming.



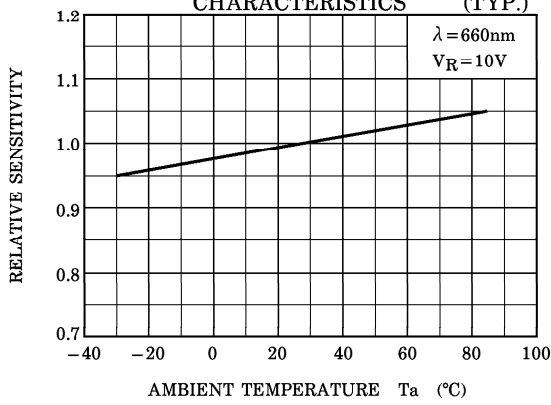
DIRECTIONAL SENSITIVITY CHARACTERISTIC (TYP.)



FREQUENCY RESPONSE CHARACTERISTIC (TYP.)



LIGHT SENSITIVITY TEMPERATURE CHARACTERISTICS (TYP.)



IL - Pf (TYP.)

