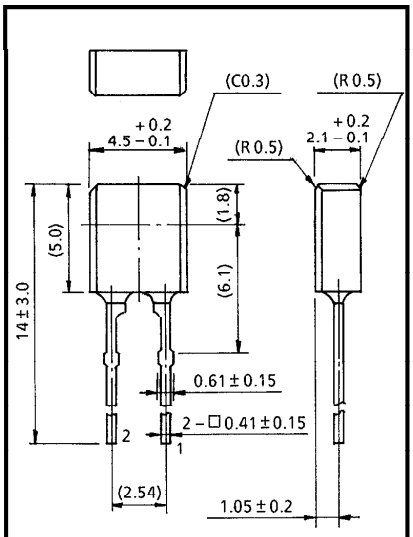
TOSHIBA PHOTO DIODE SILICON PN

TPS721A

LIGHT RECEIVING DEVICE FOR PLASTIC FIBER / POLYMER CLAD FIBER

Unit in mm

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



( ) = REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	0-5H1

Weight : 0.12g (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Reverse Voltage	V_R	50	V
Power Dissipation	P_D	150	mW
Operating Temperature Range	T_{opr}	−30~85	°C
Storage Temperature Range	T_{stg}	−40~100	°C

PIN CONNECTION

1. CATHODE
2. ANODE

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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

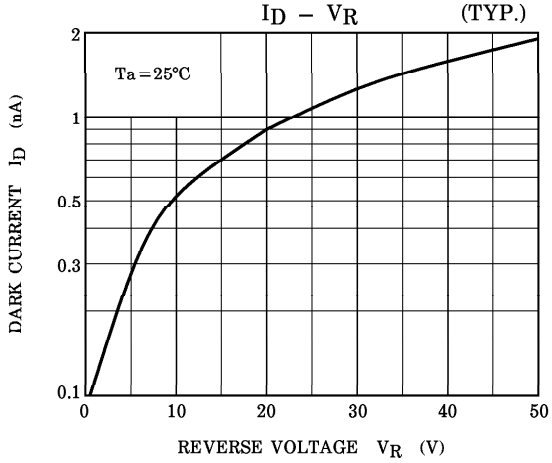
Note : Plastic fiber used : Fiber length 0.5m, Core diameter 980μm, NA 0.5.

PRECAUTION

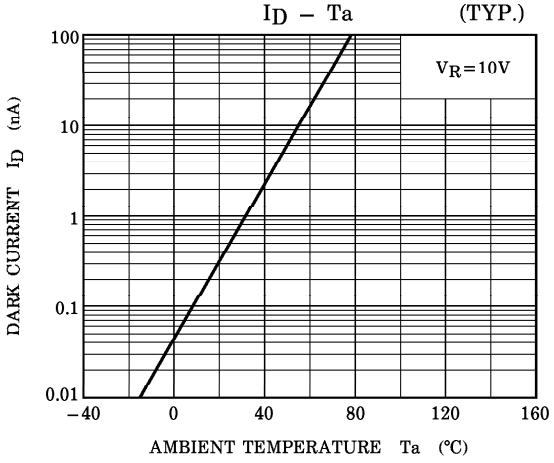
Please be careful of the followings.

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.

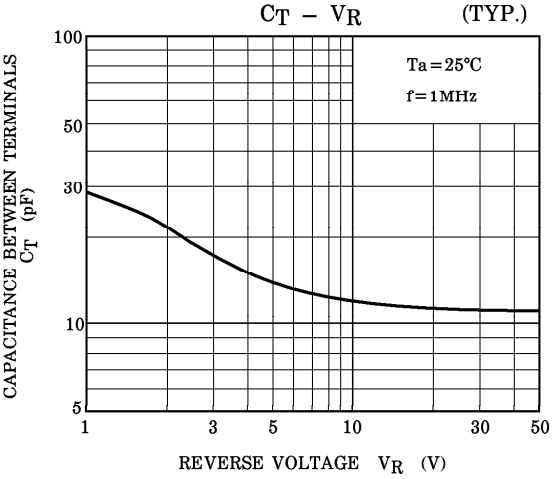
I_D – V_R (TYP.)



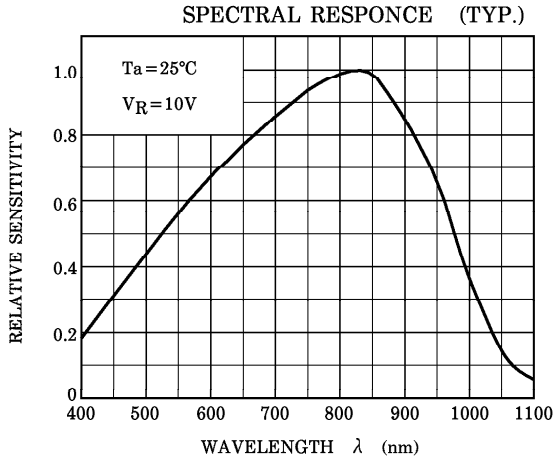
I_D – Ta (TYP.)



C_T – V_R (TYP.)

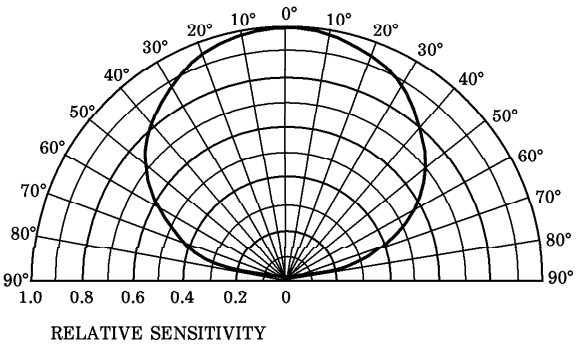


SPECTRAL RESPONCE (TYP.)

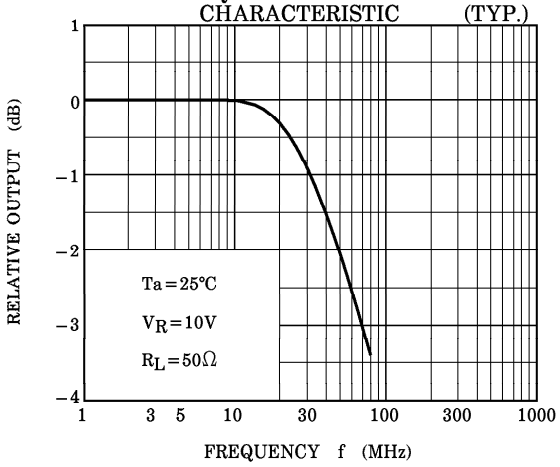


DIRECTIONAL SENSITIVITY CHARACTERISTIC (TYP.)

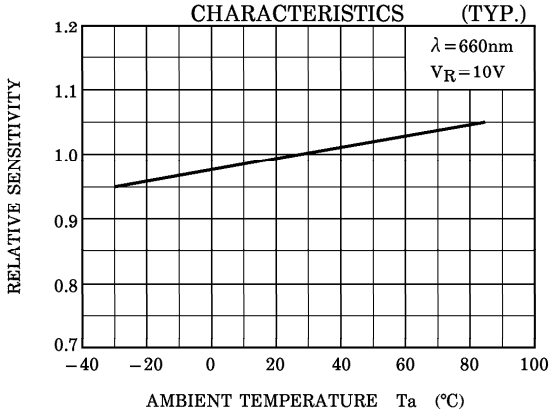
RADIATION ANGLE (Ta = 25°C)



FREQUENCY RESPONSE CHARACTERISTIC (TYP.)



LIGHT SENSITIVITY TEMPERATURE CHARACTERISTICS (TYP.)



I_L − Pf (TYP.)