

TOSHIBA Photodiode Silicon PIN

TPS721A(F)

Lead Free Product

Light-Receiving Device For Plastic Fiber / Polymer-Clad Fiber

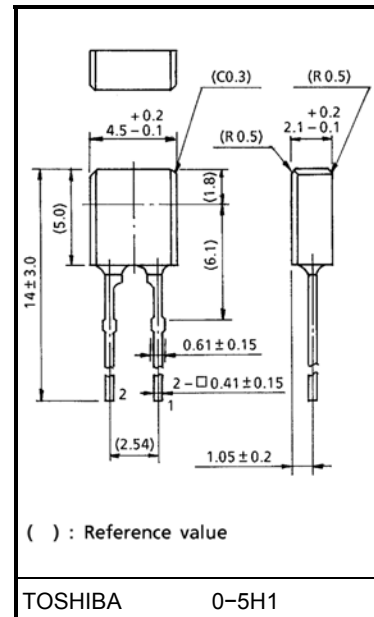
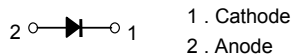
Unit: mm

- Low dark current: $I_D = 0.5\text{nA}$ (typ.)
- High current transfer ratio: $S_f = 0.36\text{A} / \text{W}$ (typ.)
- High-speed applications 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}	$-30 \sim 85$	$^\circ\text{C}$
Storage temperature range	T_{stg}	$-40 \sim 100$	$^\circ\text{C}$

Pin Connection



Weight: 0.12g (typ.)

Optical And Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Characteristic		Symbol	Test Condition	Min	Typ.	Max	Unit
Dark current		$I_D (I_{CEO})$	$V_{CE} = 10\text{V}, E = 0$	—	0.5	8	nA
Fiber coupling sensitivity (Note)		S_f	$V_{CE} = 10\text{V}, \lambda = 660\text{nm}, P_f = 1\mu\text{W}$	0.33	0.36	—	A / W
Peak sensitivity wavelength		λ_P	$V_R = 10\text{V}$	—	840	—	nm
Half value angle		$\theta \frac{1}{2}$	$V_R = 10\text{V}$	—	± 65	—	$^\circ$
Capacitance between terminal		C_T	$V_R = 10\text{V}, f = 1\text{MHz}$	—	10	—	pF
Switching time	Rise time	t_r	$V_R = 10\text{V}, R_L = 50\Omega$	—	4	—	ns
	Fall time	t_f		—	4	—	
Cut-off frequency		f_c	$V_R = 10\text{V}, R_L = 50\Omega$	—	70	—	MHz

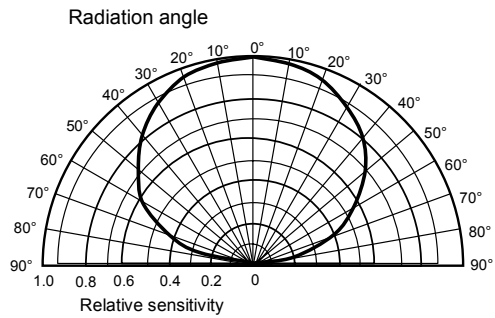
(Note): Plastic fiber used: Fiber length 0.5m, core diameter 980 μm , NA 0.5

Precaution

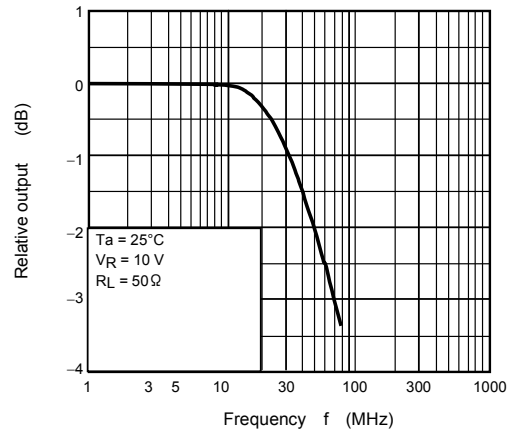
Please be careful of the followings

1. Soldering temperature : 260°C max
Soldering time : 3s max
(Soldering must be performed 2.5mm under the package body.)
2. When forming the leads, bend each lead under the 2.5mm from the body of the device.
Soldering must be performed after the leads have been formed.

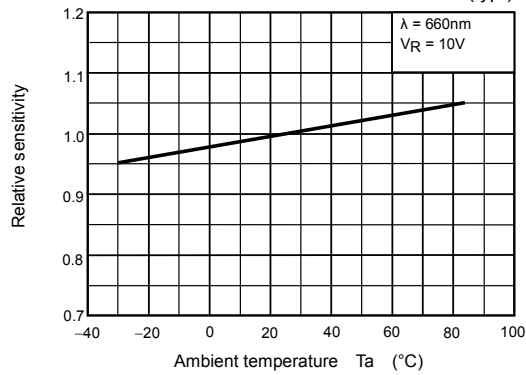
Radiation Pattern Characteristic
(typ.)
 $T_a = 25^\circ\text{C}$



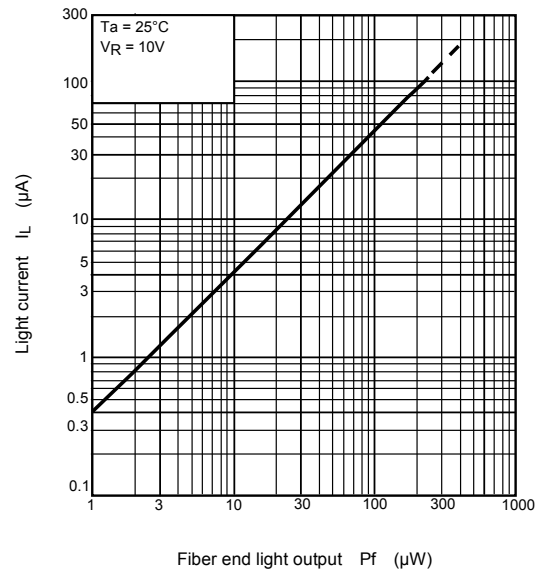
Frequency Response
Characteristic (typ.)



Light Sensitivity Temperature
Characteristics (typ.)



$I_L - P_f$ (typ.)



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