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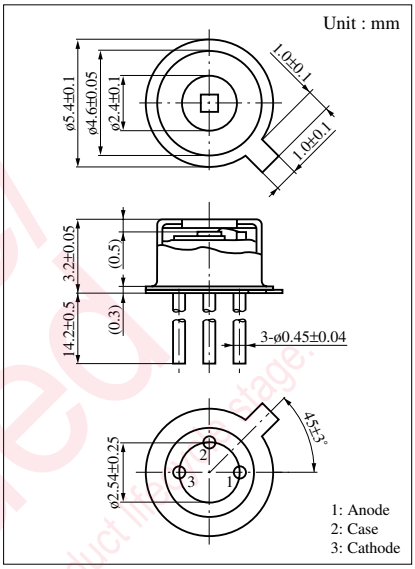
PNZ331F (PN331F)

PIN Photodiode

For optical fiber communication systems



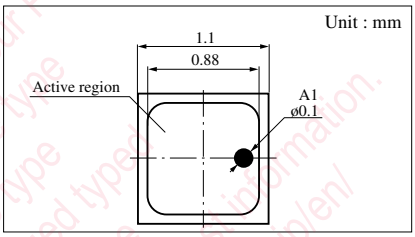
Features

- Metal package with shield pin
- High coupling capability suitable for plastic fiber and glass fiber
- High quantum efficiency
- High-speed response

Absolute Maximum Ratings (Ta = 25˚C)

Parameter	Symbol	Ratings	Unit
Reverse voltage (DC)	V_R	30	V
Power dissipation	P_D	50	mW
Operating ambient temperature	T_{opr}	–25 to +100	˚C
Storage temperature	T_{stg}	–40 to +100	˚C

Dimensions of detection area



Electro-Optical Characteristics (Ta = 25˚C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Dark current	I_D	V_R = 10V		0.1	10	nA
Photo current	I_L	V_R = 10V, L = 1000 lx*1	4	7		μA
Peak sensitivity wavelength	λ_P	V_R = 10V		900		nm
Frequency characteristics	f_C*2	V_R = 10V, R_L = 50Ω		50		MHz
Capacitance between pins	C_t	V_R = 10V		3		pF
Photodetection sensitivity	R	V_R = 10V, λ = 800nm	0.45	0.55		A/W
Acceptance half angle	θ	Measured from the optical axis to the half power point		40		deg.
Photodetection surface shape	D	Effective photodetection area		□0.88		mm

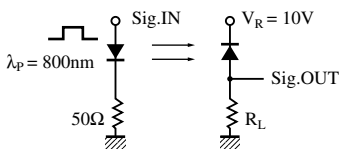
Note 1) Spectral sensitivity : Sensitivity at wavelengths exceeding 400 nm as a percentage, is 100% to maximum sensitivity.

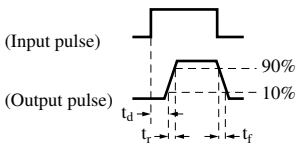
Note 2) This product is not designed to withstand electromagnetic radiation or heavy-charge particles.

Note 3) The glass strength of this product cannot withstand loads of 0.5 kg or greater. This fact needs to be taken into consideration if optical fibers are to be mounted on the product.

*1 Measurements were made using a tungsten lamp (color temperature T = 2856K) as a light source.

*2 Switching time measurement circuit (see figure below) Note : Detection photo current –3 dB

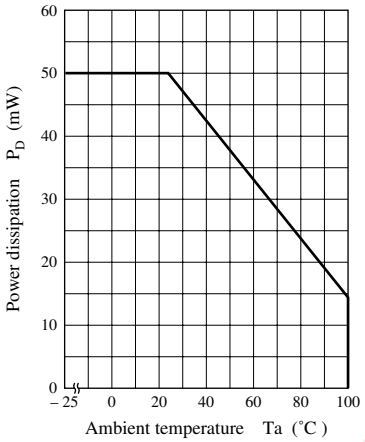




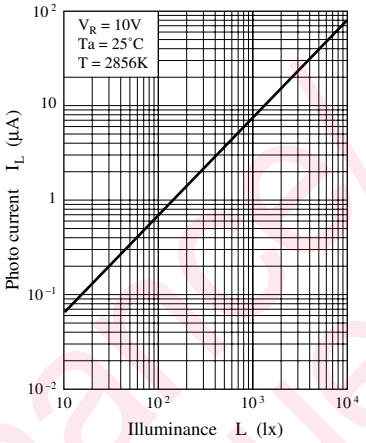
t_d : Delay time
t_r : Rise time (Time required for the collector photo current to increase from 10% to 90% of its final value)
t_f : Fall time (Time required for the collector photo current to decrease from 90% to 10% of its initial value)

Note) The part number in the parenthesis shows conventional part number.

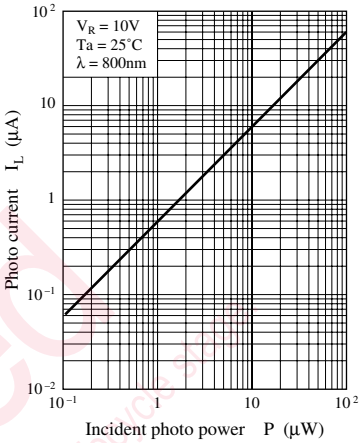
P_D — Ta



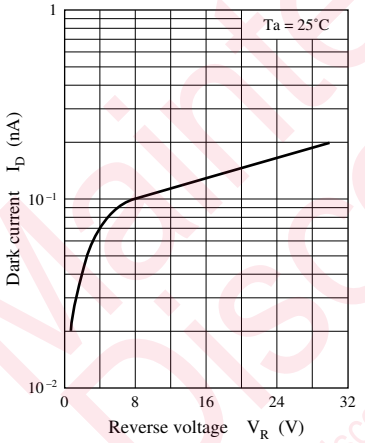
I_L — L



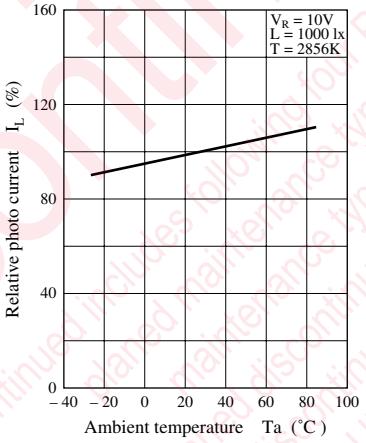
I_L — P



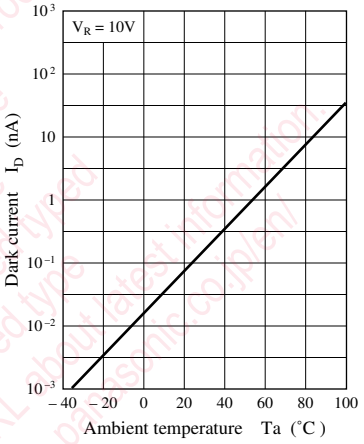
I_D — V_R



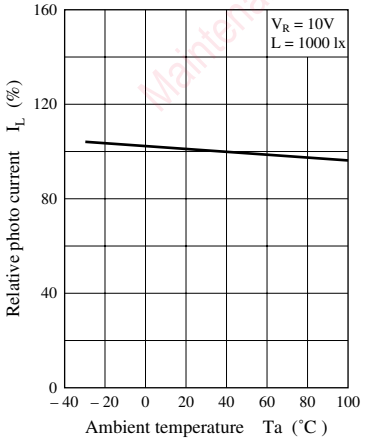
I_L — Ta



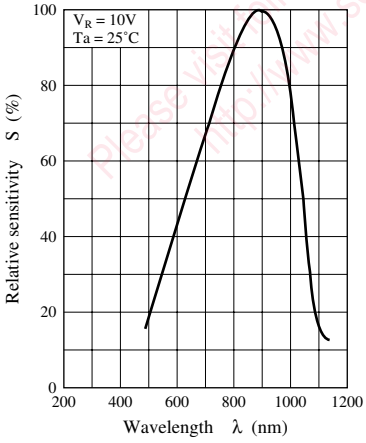
I_D — Ta



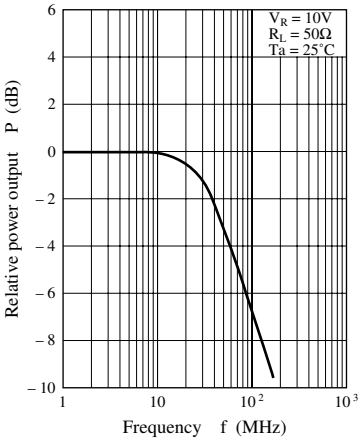
I_L — Ta



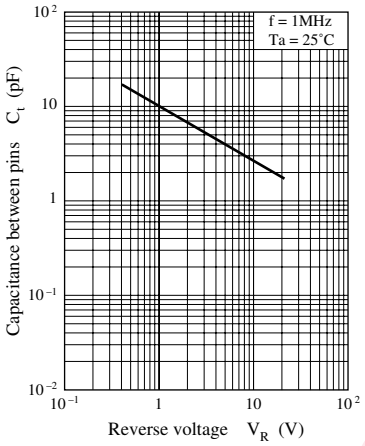
Spectral sensitivity characteristics



Frequency characteristics

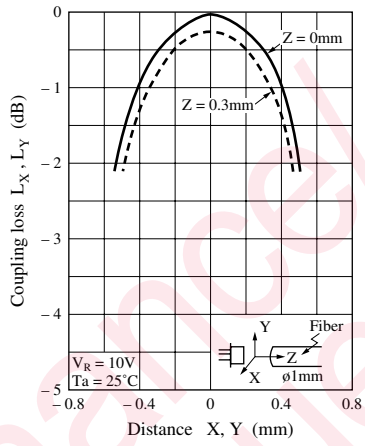


C_t — V_R



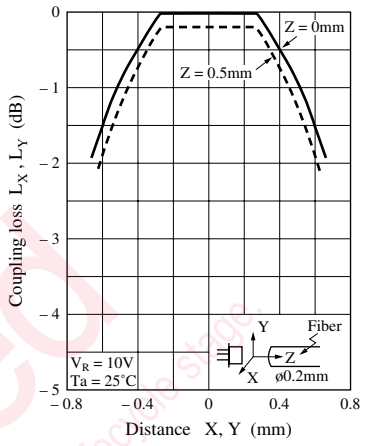
Coupling loss characteristics

L_X , L_Y — X, Y

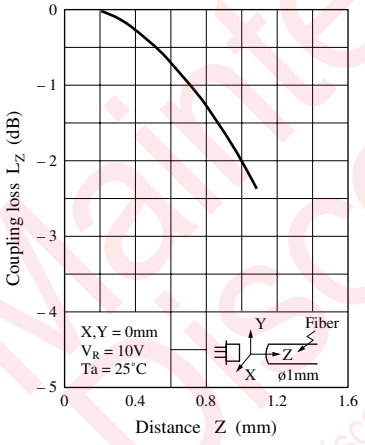


Coupling loss characteristics

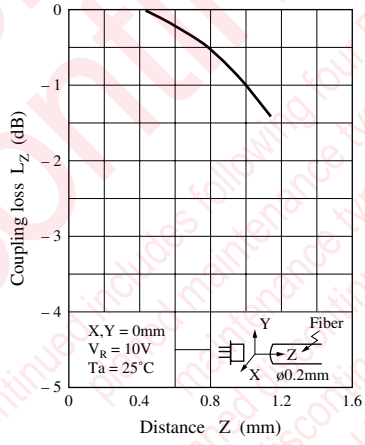
L_X , L_Y — X, Y



Coupling loss characteristics



Coupling loss characteristics



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