# **Panasonic**

# **PNZ327** (PN327)

## **PIN Photodiode**

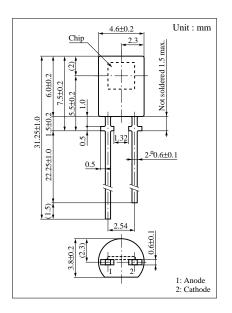
#### For optical control systems

#### Features

- Fast response which is well suited to high speed modulated light detection: t<sub>r</sub>, t<sub>f</sub> = 50 ns (typ.)
- High sensitivity, high reliability
- Peak sensitivity wavelength matched with infrared light emitting diodes:  $\lambda_P = 900 \text{ nm}$  (typ.)
- Wide detection area, wide acceptance half angle :  $\theta = 70$  deg. (typ.)

### ■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Reverse voltage (DC)	$V_R$	30	V
Power dissipation	$P_{D}$	100	mW
Operating ambient temperature	T <sub>opr</sub>	-30 to +85	°C
Storage temperature	$T_{stg}$	-40 to +100	°C

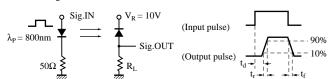


### ■ Electro-Optical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Dark current	$I_{\mathrm{D}}$	$V_R = 10V$		5	50	nA
Photo current	$I_L$	$V_R = 10V, L = 1000 lx^{*1}$		70		μΑ
Sensitivity to infrared emitters	S <sub>IR</sub> *2	$V_R = 5V, H = 0.1 \text{ mW/cm}^2$	4.5			μΑ
Peak sensitivity wavelength	$\lambda_{\mathrm{P}}$	$V_R = 10V$		900		nm
Response time	$t_r, t_f^{*3}$	$V_R = 10V, R_L = 1k\Omega$		50		ns
Response time	$t_r, t_f^{*3}$	$V_R = 10V, R_L = 100k\Omega$		5		μs
Capacitance between pins	C <sub>t</sub>	$V_R = 0V, f = 1MHz$		70		pF
Acceptance half angle	θ	Measured from the optical axis to the half power point		70		deg.

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

<sup>\*3</sup> Switching time measurement circuit

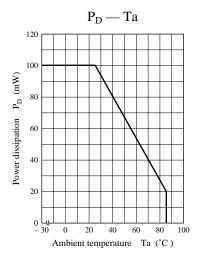


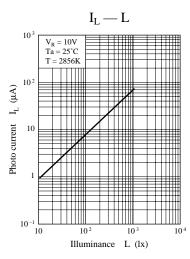
- t<sub>d</sub>: Delay time
- t<sub>r</sub>: Rise time (Time required for the collector photo current to increase from 10% to 90% of its final value)
- ${\rm t_f}\colon$  Fall time (Time required for the collector photo current to decrease from 90% to 10% of its initial value)

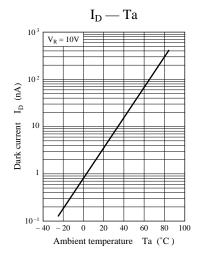
Note) The part number in the parenthesis shows conventional part number.

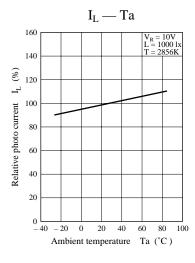
<sup>\*2</sup> Light source :  $\lambda = 940 \text{ nm}$ 

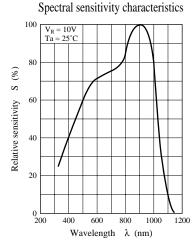
PIN Photodiodes PNZ327

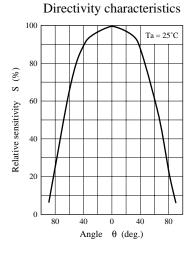


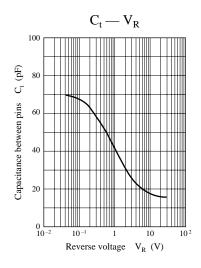


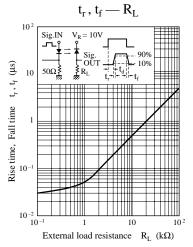


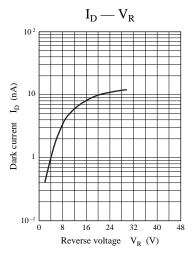












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