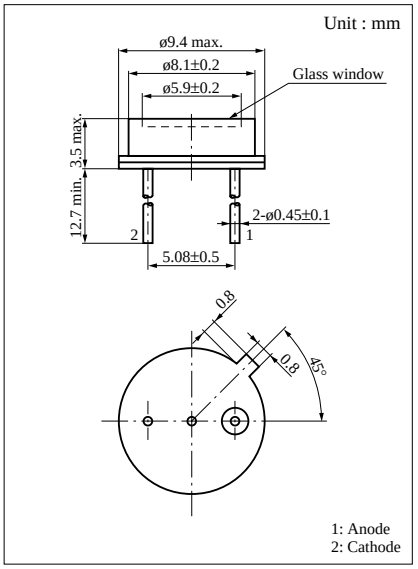
PNZ303 (PN303)

PIN Photodiode

For optical control systems



Features

- Fast response which is well suited to high speed modulated light detection : t_r, t_f = 50 ns (typ.)
- High photodetection sensitivity and wide dynamic sensitivity
- Peak sensitivity wave length is 900 nm and wide spectral sensitivity
- Wide photodetection area and wide directional angle
- Highly reliable TO-5 standard type package

Absolute Maximum Ratings (Ta = 25˚C)

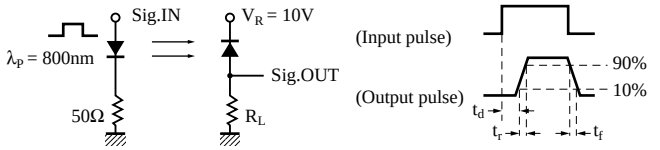
Parameter	Symbol	Ratings	Unit
Reverse voltage (DC)	V_R	30	V
Power dissipation	P_D	100	mW
Operating ambient temperature	T_{opr}	– 30 to +100	˚C
Storage temperature	T_{stg}	– 40 to +100	˚C

Electro-Optical Characteristics (Ta = 25˚C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Dark current	I_D	V_R = 10V		5	50	nA
Photo current	I_L	V_R = 10V, L = 1000 lx*1	50	70		µA
Peak sensitivity wavelength	λ_P	V_R = 10V		900		nm
Response time	t_r, t_f*2	V_R = 10V, R_L = 1kΩ		50		ns
Response time	t_r, t_f*2	V_R = 10V, R_L = 100kΩ		5		µs
Capacitance between pins	C_t	V_R = 0V, f = 1MHz		70		pF
Acceptance half angle	θ	Measured from the optical axis to the half power point		55		deg.

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

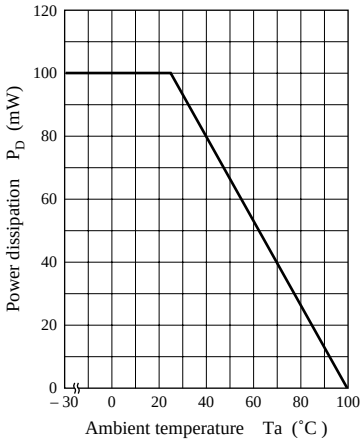
*2 Switching time measurement circuit



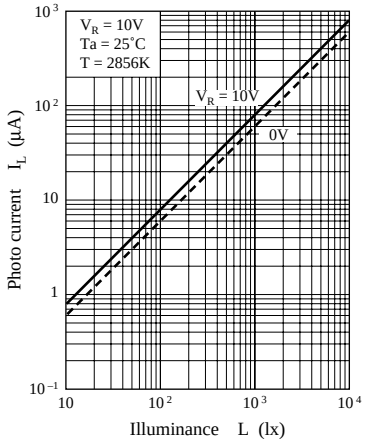
t_d: Delay time
t_r: Rise time (Time required for the collector photo current to increase from 10% to 90% of its final value)
t_f: Fall time (Time required for the collector photo current to decrease from 90% to 10% of its initial value)

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

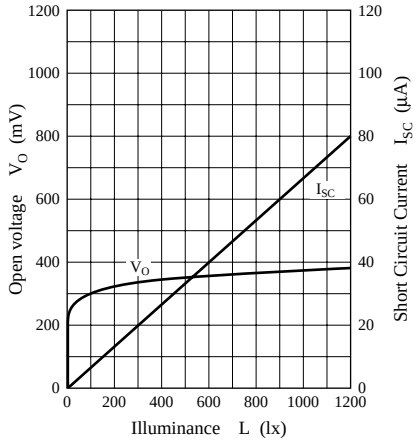
P_D — Ta



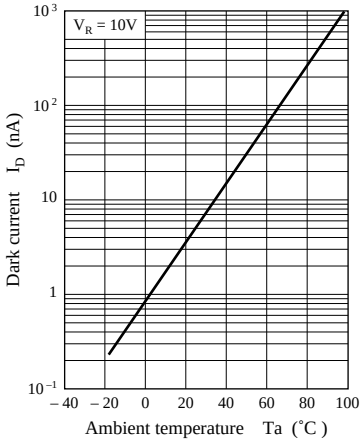
I_L — L



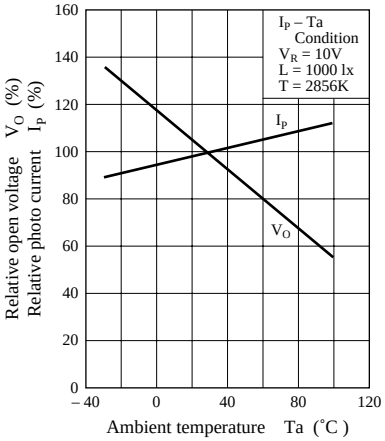
V_O, I_{SC} — L



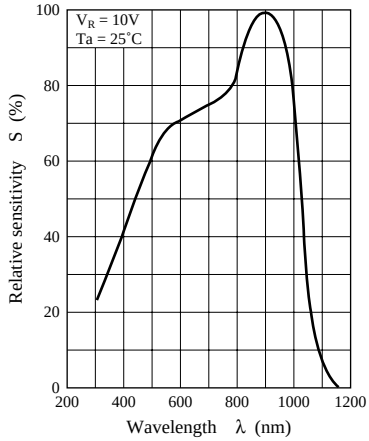
I_D — Ta



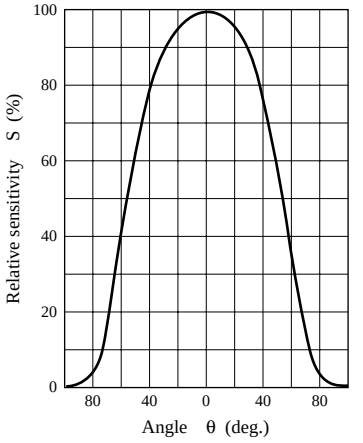
V_O, I_P — Ta



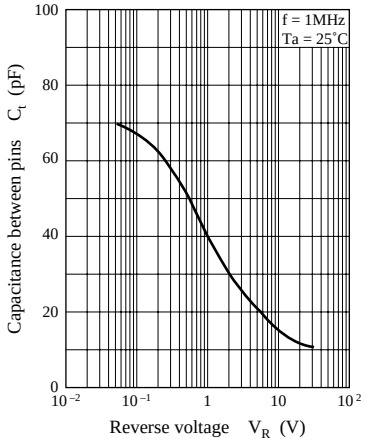
Spectral sensitivity characteristics



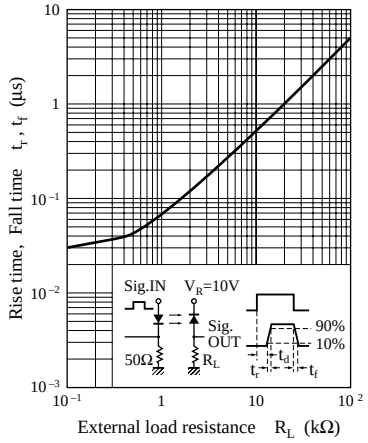
Directivity characteristics



C_t — V_R



t_r , t_f — R_L



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