

PNZ300, PNZ300F (PN300, PN300F)

Silicon PIN Photodiodes

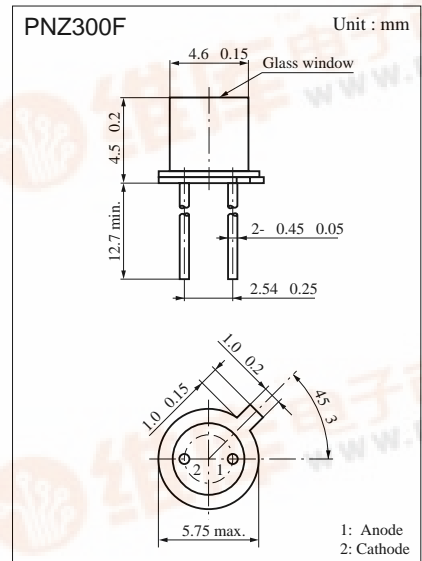
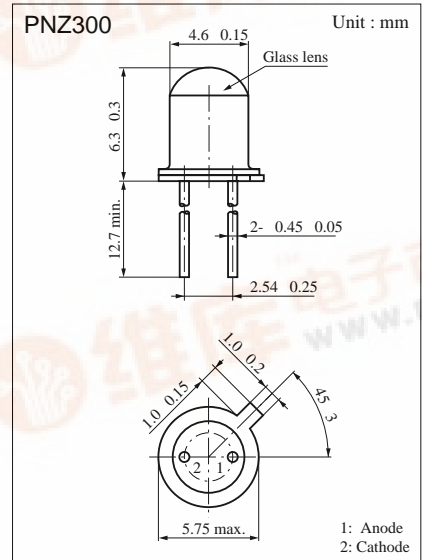
For optical control systems

Features

- Fast response which is well suited to high speed modulated light detection
- Wide spectral sensitivity
- Low dark current and low noise
- Good photo current linearity and wide dynamic sensitivity
- Narrow directivity (PNZ300)
- Wide directivity (PNZ300F)

Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Reverse voltage (DC)	V_R	50	V
Power dissipation	P_D	100	mW
Operating ambient temperature	T_{opr}	-25 to +85	°C
Storage temperature	T_{stg}	-30 to +100	°C

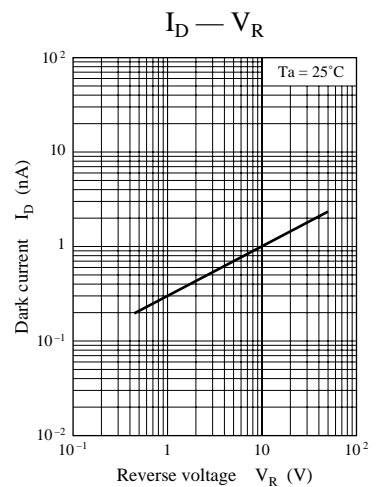
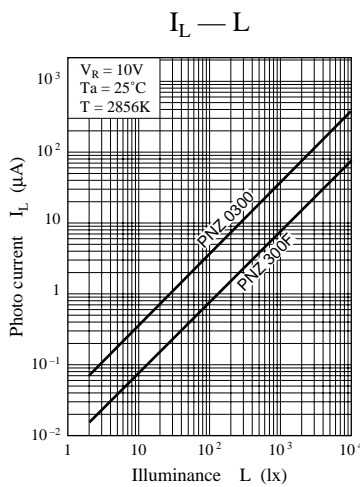
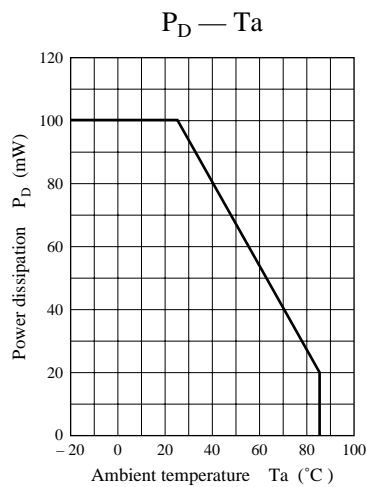
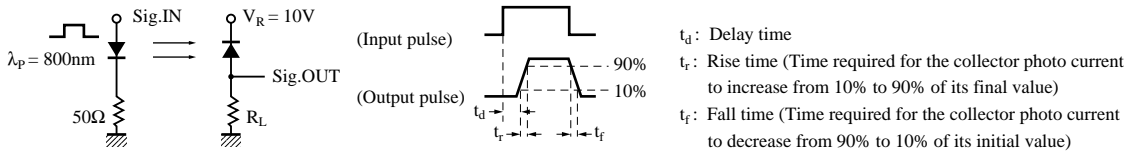


■ Electro-Optical Characteristics (Ta = 25°C)

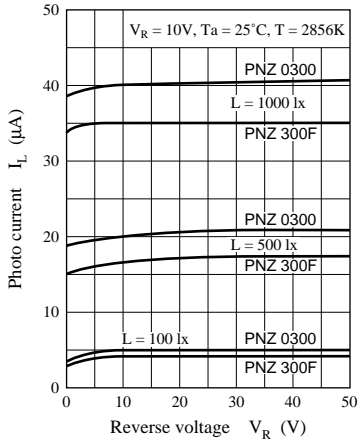
Parameter	Symbol	Conditions	min	typ	max	Unit
Dark current	I_D	$V_R = 10V$		0.1	10	nA
Photo current	I_L	$V_R = 10V, L = 1000 \text{ lx}^{*1}$	30	55		μA
			5	7		μA
Peak sensitivity wavelength	λ_p	$V_R = 10V$		800		nm
Response time	t_r, t_f^{*2}	$V_R = 20V, R_L = 50\Omega$		1		ns
Capacitance between pins	C_t	$V_R = 10V, f = 1\text{MHz}$		7		pF
Acceptance half angle	θ	Measured from the optical axis to the half power point		10		deg.
				40		deg.

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

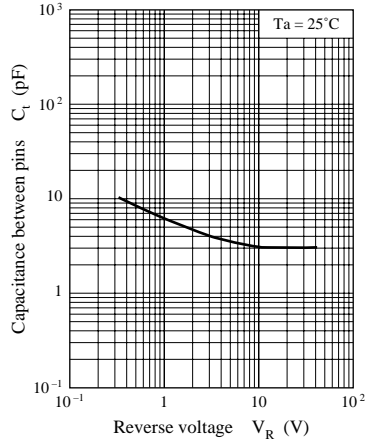
*2 Switching time measurement circuit



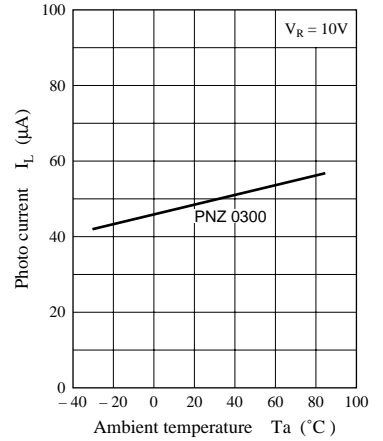
$I_L - V_R$



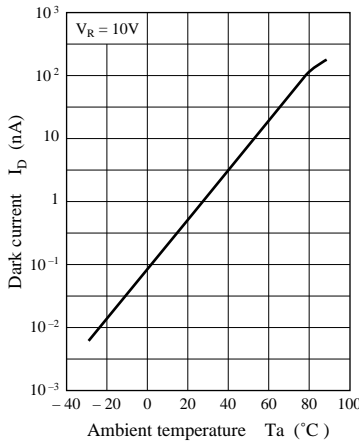
$C_t - V_R$



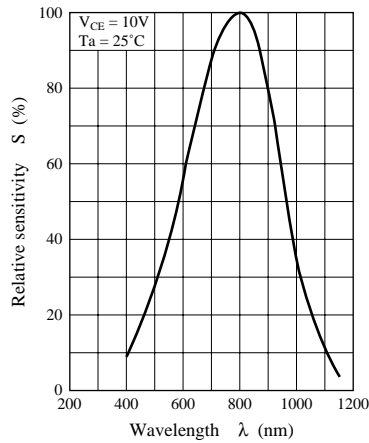
$I_L - T_a$



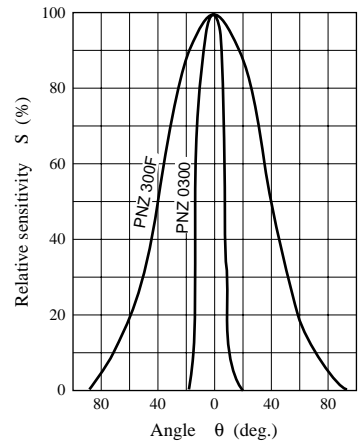
$I_D - T_a$



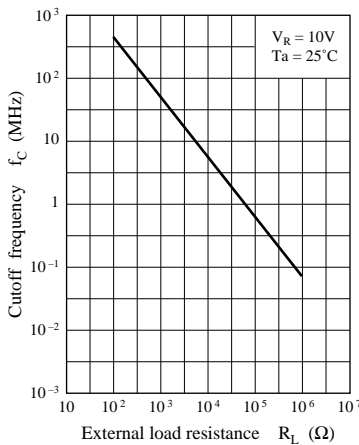
Spectral sensitivity characteristics



Directivity characteristics



$f_c - R_L$



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