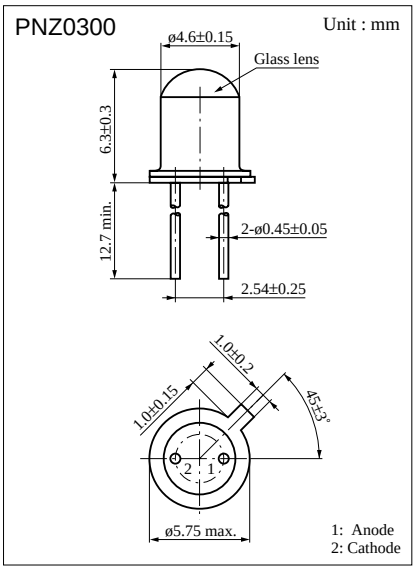
PNZ0300, PNZ300F

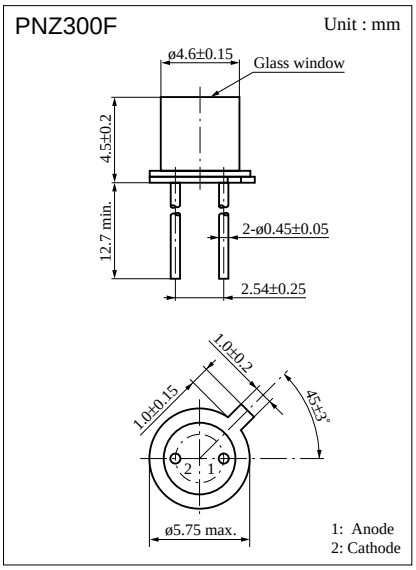
Silicon PIN Photodiodes

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 (PNZ0300)
- Wide directivity (PNZ300F)



Absolute Maximum Ratings (Ta = 25˚C)

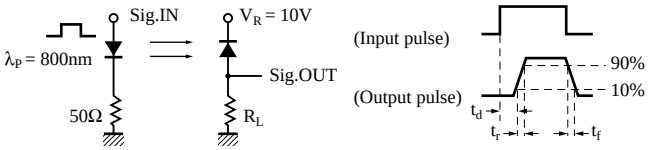
Parameter	Symbol	Ratings	Unit
Reverse voltage (DC)	V_R	50	V
Power dissipation	P_D	100	mW
Operating ambient temperature	T_{opr}	–25 to +85	˚C
Storage temperature	T_{stg}	–30 to +100	˚C

■ 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	PNZ0300	I_L	V_R = 10V, L = 1000 lx*1	30	55		μA
	PNZ300F			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 = 50Ω		1		ns
Capacitance between pins		C_t	V_R = 10V, f = 1MHz		7		pF
Acceptance half angle	PNZ0300	θ	Measured from the optical axis to the half power point		10		deg.
	PNZ300F				40		deg.

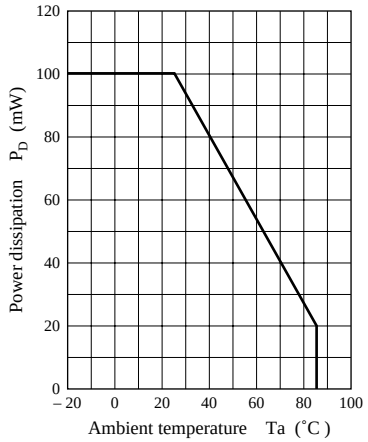
*1 Measurements were made using a tungsten lamp (color temperature T = 2856K) as a light source.

*2 Switching time measurement circuit

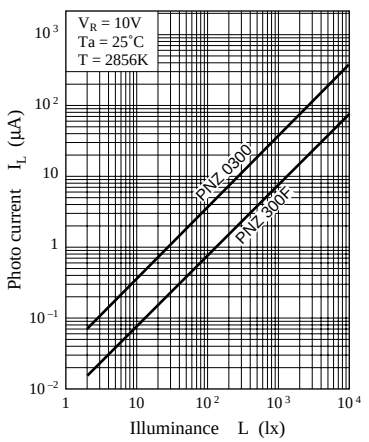


t_d: Delay time
t_r: Rise time (Time required for the collector photo current to increase from 10% to 90% of its final value)
t_f: Fall time (Time required for the collector photo current to decrease from 90% to 10% of its initial value)

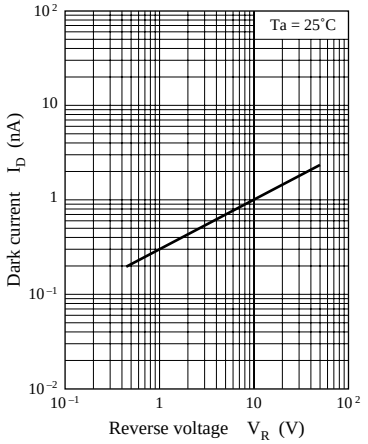
P_D — Ta



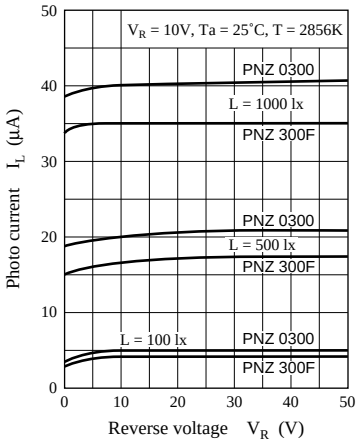
I_L — L



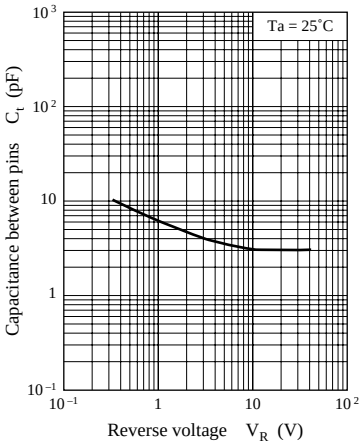
I_D — V_R



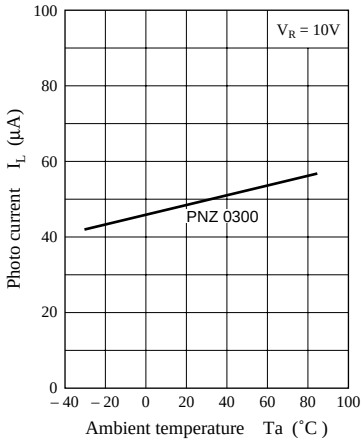
I_L — V_R



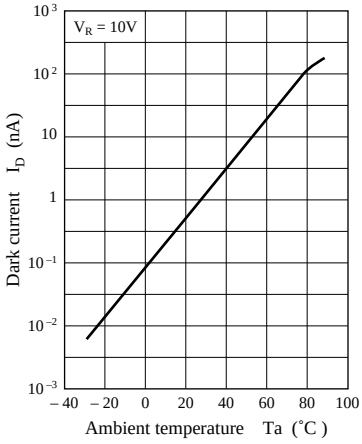
C_t — V_R



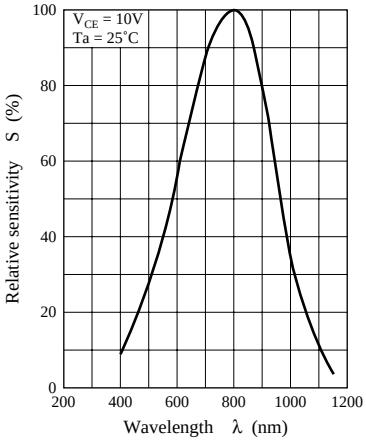
I_L — Ta



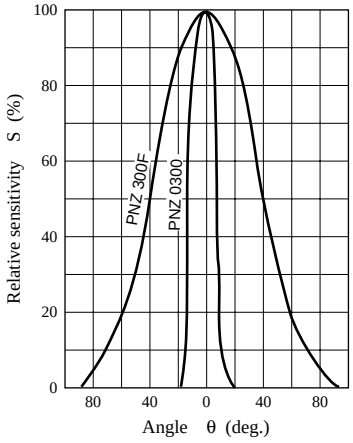
I_D — Ta



Spectral sensitivity characteristics



Directivity characteristics



f_C — R_L