

Part number notation

The part number noted on the following pages is a conventional part number.

The new Matsushita global number is:

PNZ312DN

PN312D(N)

Silicon PIN Dual Photodiode

For optical information systems

■ Features

- Fast response : $t_r, t_f = 10 \text{ ns (typ.)}$
- Good photo current linearity
- Low dark current : $I_D = 20 \text{ nA (max.)}$
- Small size plastic package (flat type)
- Adoption of visible light cutoff resin

■ Applications

- Auto focus sensor for still cameras and video cameras etc.
- Distance measuring systems
- Position sensor for automatic assembly lines
- Eye sensor for industrial robots

■ Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Rated	Unit
Reverse voltage (DC)	V_R	30	V
Power dissipation	P_D	30	mW
Operating ambient temperature	T_{opr}	-25 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}	-30 to +100	$^\circ\text{C}$

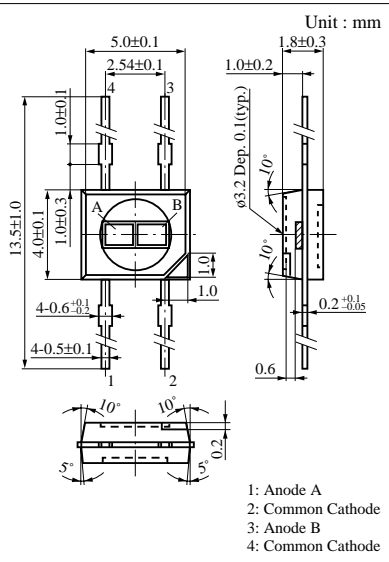
■ Electro-Optical Characteristics ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Reverse voltage (DC)	V_R	$I_R = 10\mu\text{A}$	30			V
Dark current	I_D	$V_R = 10\text{V}$			20	nA
Photo current	I_L^{*3}	$V_R = 10\text{V}, L = 1000 \text{ lx}^{*1}$	8	12		μA
Peak sensitivity wavelength	λ_p	$V_R = 10\text{V}$		940		nm
Response time	t_r, t_f^{*2}	$V_R = 10\text{V}, R_L = 1\text{k}\Omega$		10		ns
Capacitance between pins	C_t	$V_R = 10\text{V}, f = 1\text{MHz}$		5		pF
Acceptance half angle	θ	Measured from the optical axis to the half power point		65		deg.

Note) The indicated values for absolute maximum ratings and electro-optical characteristics are the values corresponding to individual elements.

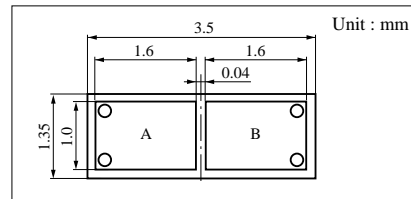
*1 Measurements were made using a white tungsten lamp (color temperature $T = 2856\text{K}$) as a light source.

*2 Semiconductor laser light source ($\lambda = 800 \text{ nm}$)

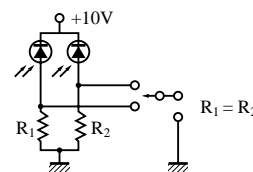


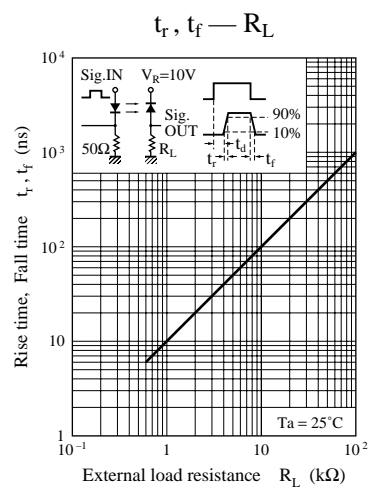
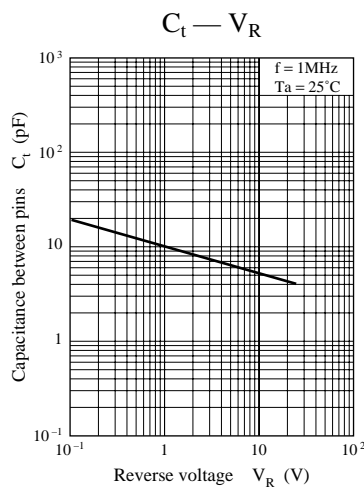
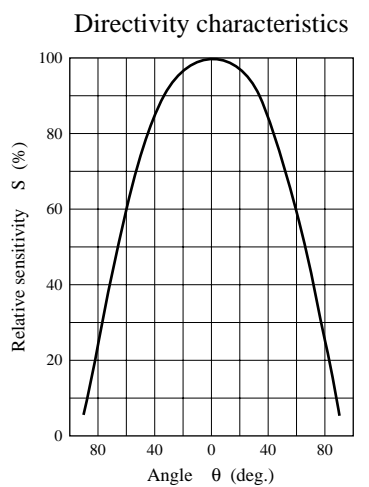
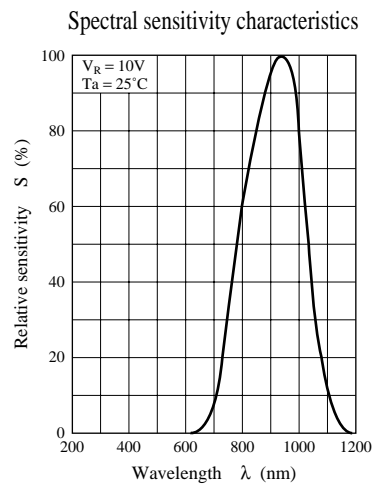
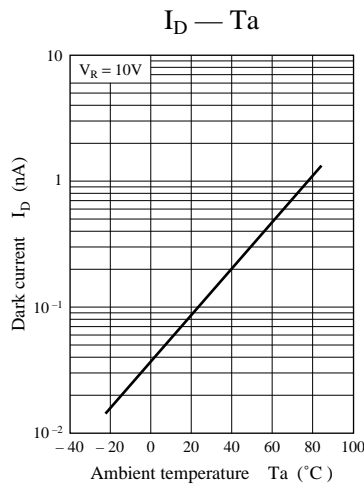
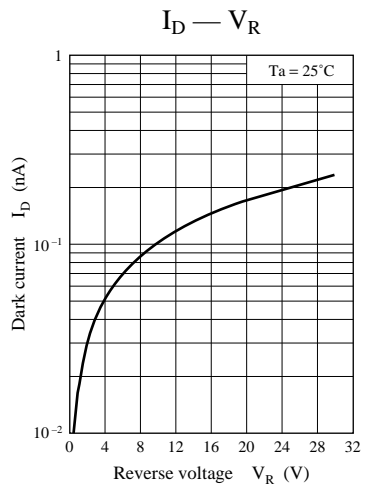
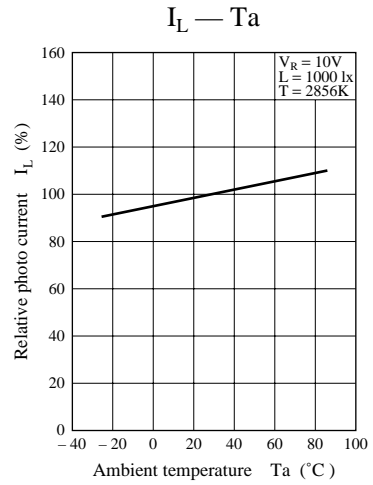
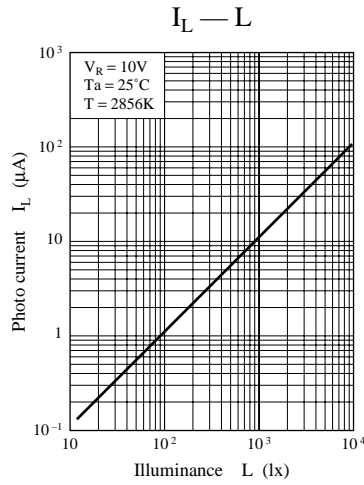
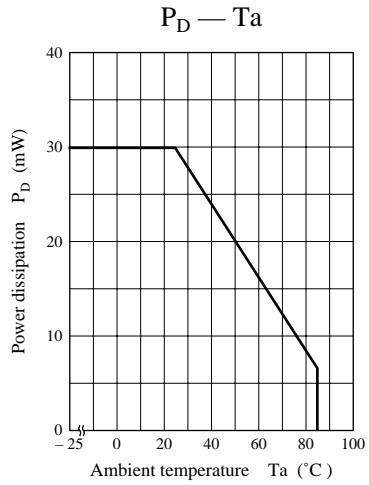
Note) The PN312D(N) package consists of a visible light cutoff resin. Therefore the chips (A and B) shown in the drawing cannot actually be seen.

■ Dimensions of detection area



*3 Photo current measurement circuit





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