

## 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	$^\circ\text{C}$

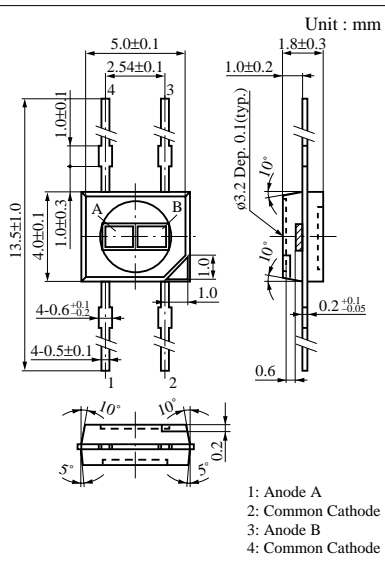
### ■ Electro-Optical Characteristics ( $T_a = 25^\circ\text{C}$ )

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		$\mu\text{A}$
Peak sensitivity wavelength	$\lambda_p$	$V_R = 10\text{V}$		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	$\theta$	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.

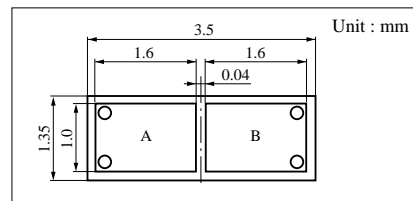
\*1 Measurements were made using a white tungsten lamp (color temperature  $T = 2856\text{K}$ ) as a light source.

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

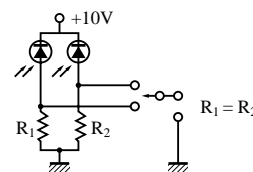


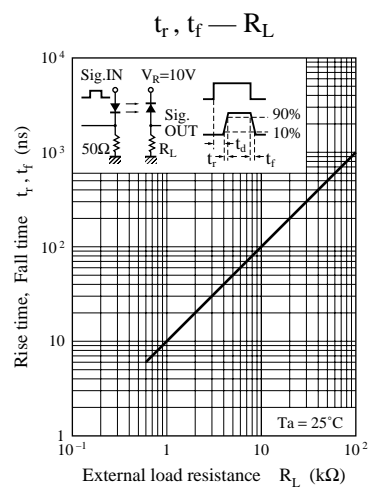
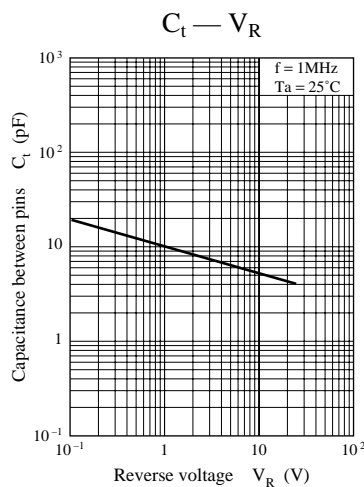
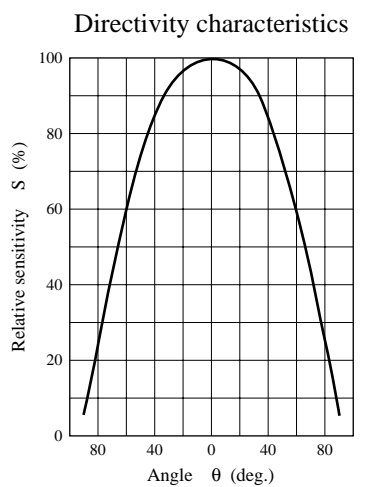
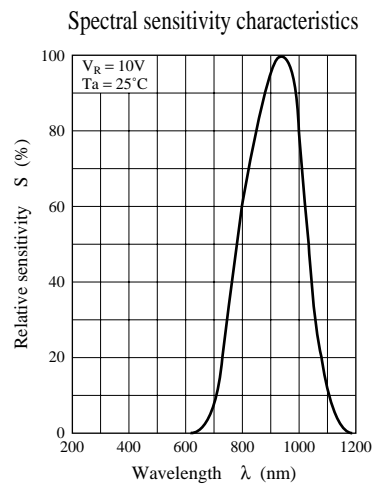
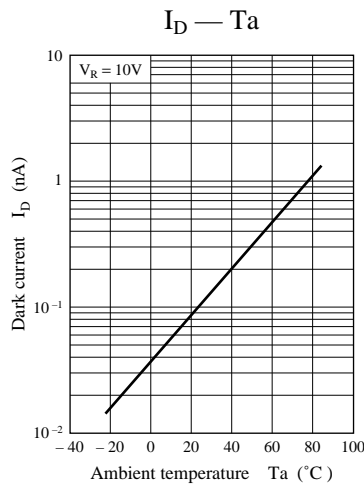
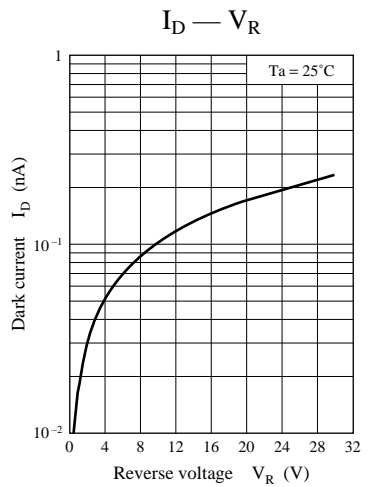
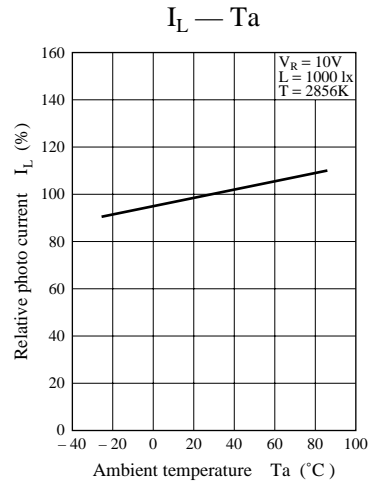
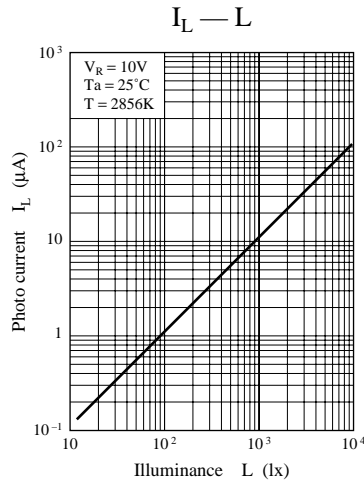
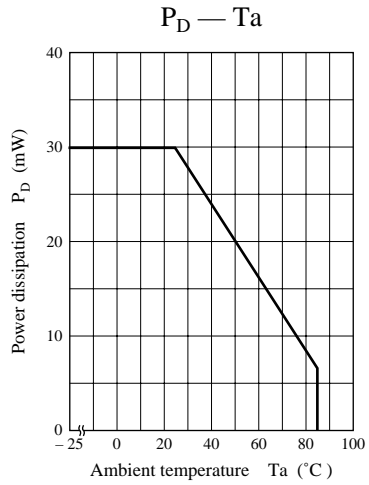
Note) The PN312D(N) package consists of a visible light cutoff resin. Therefore the chips (A and B) shown in the drawing cannot actually be seen.

### ■ Dimensions of detection area



\*3 Photo current measurement circuit





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