

# PNZ121S

## Silicon NPN Phototransistor

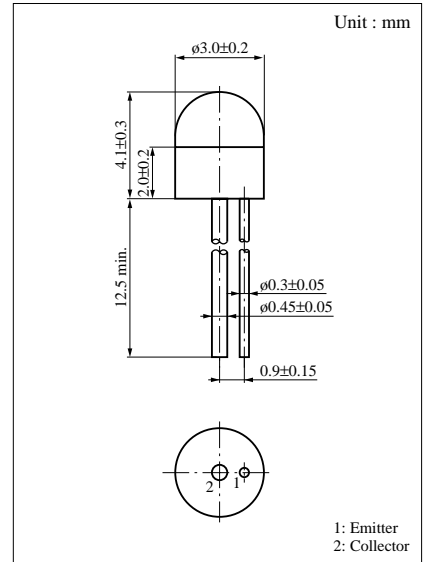
For optical control systems

### ■ Features

- Stable operations in high illuminance region
- Low dark current
- Fast response :  $t_r = 1 \mu\text{s}$  (typ.)
- Small size ( $\phi 3$ ) ceramic package

### ■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Collector to emitter voltage	$V_{CEO}$	20	V
Emitter to collector voltage	$V_{ECO}$	5	V
Collector current	$I_C$	10	mA
Collector power dissipation	$P_C$	50	mW
Operating ambient temperature	$T_{opr}$	-25 to +85	°C
Storage temperature	$T_{stg}$	-30 to +100	°C

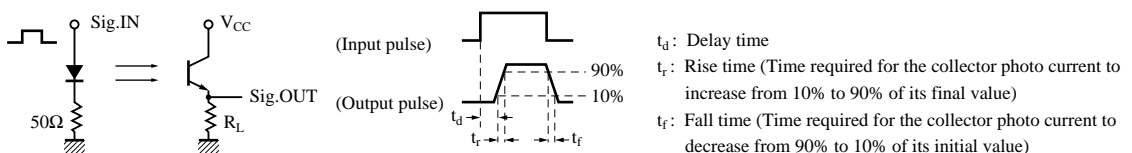


### ■ Electro-Optical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Dark current	$I_{CEO}$	$V_{CE} = 10V$		1	100	nA
Collector photo current	$I_{CE(L)}^{*3}$	$V_{CE} = 10V, L = 1000 \text{ lx}^{*1}$	120		280	$\mu\text{A}$
Peak sensitivity wavelength	$\lambda_p$	$V_{CE} = 10V$		800		nm
Acceptance half angle	$\theta$	Measured from the optical axis to the half power point		30		deg.
Rise time	$t_r^{*2}$	$V_{CC} = 10V, I_{CE(L)} = 1\text{mA}, R_L = 100\Omega$		1		$\mu\text{s}$
Fall time	$t_f^{*2}$			1.3		$\mu\text{s}$

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

\*2 Switching time measurement circuit



\*3  $I_{CE(L)}$  Classifications

Class	Q	R	S	T
$I_{CE(L)}$ ( $\mu\text{A}$ )	120 to 180	160 to 200	180 to 235	210 to 280
Color indication	Black	Red	Green	—

