

# PNZ150L

## Silicon NPN Phototransistor

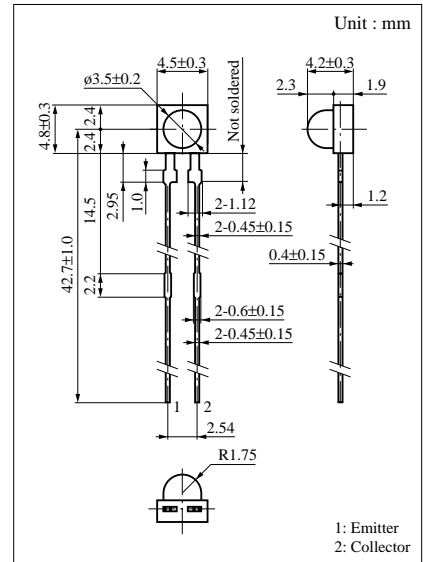
For optical control systems

### ■ Features

- High sensitivity
- Wide spectral sensitivity, suited for detecting GaAs LEDs
- Low dark current
- Small size, thin side-view type package

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

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

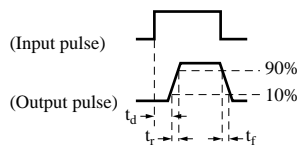
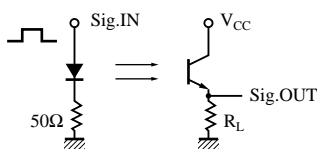


### ■ Electro-Optical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Dark current	$I_{CEO}$	$V_{CEO} = 10V$		0.01	0.2	$\mu A$
Sensitivity to infrared emitters	$S_{IR}^{*1}$	$V_{CE} = 10V, H = 15\mu W/cm^2$	16			$\mu A$
Collector saturation voltage	$V_{CE(sat)}$	$V_{CE} = 10V, H = 15\mu W/cm^2$		0.2	0.5	V
Peak sensitivity wavelength	$\lambda_P$	$V_{CEO} = 10V$		800		nm
Response time	$t_r, t_f^{*2}$	$V_{CC} = 10V, I_{CE(L)} = 5mA, R_L = 100\Omega$		4		$\mu s$
Acceptance half angle	$\theta$	Measured from the optical axis to the half power point		35		deg.

\*1 Measurements were made using infrared light ( $\lambda = 940\text{ nm}$ ) as a light source.

\*2 Response 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)

