

# PN3104, PN3105

## PIN Photodiodes

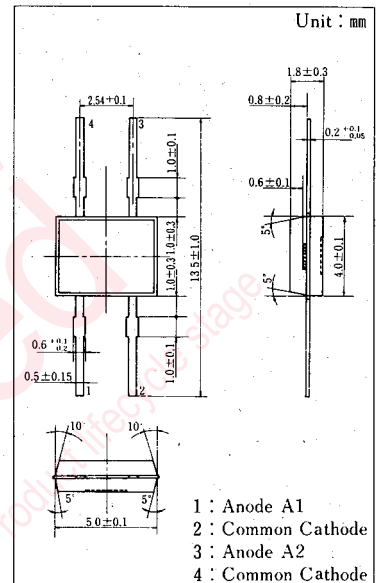
### For Optical Control Systems

#### ■ Features

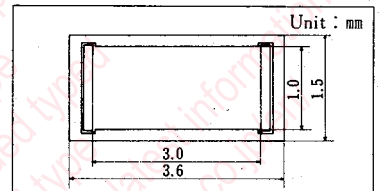
- High sensitivity, low dark current
- One dimensional position sensitive photodetector
- High linearity of position sensing
- Small package (Flat type)
- Clear type (PN3104)
- Using plastic to cut-off visible light (PN3105)

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

Item	Symbol	Value	Unit
Reverse Voltage (DC)	$V_R$	30	V
Power Dissipation	$P_D$	30	mW
Operating Ambient Temperature	$T_{opr}$	-25~+85	°C
Storage Temperature	$T_{stg}$	-30~+100	°C



#### ■ Dimensions



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

Item	Symbol	Condition	min.	typ.	max.	Unit
Reverse Voltage (DC)	$V_R$	$I_R=10\mu A$	30			V
Dark Current	$I_D$	$V_R=1V$			5.0	nA
Photo Current	PN3104	$V_R=1V, L=1000lx$	20	30		$\mu A$
	PN3105		14	20		$\mu A$
Peak Sensitivity Wavelength	$\lambda_P$	$V_R=1V$		940		nm
Response Time	$t_r, t_f^{*2}$	$V_R=1V, R_L=1k\Omega$		10		$\mu s$
Capacitance between Terminals	$C_t$	$V_R=1V, f=1MHz$		12		pF
Resistance between Electrodes	$R_S^{*3}$	$V_R=1V, V_a=0.5V$		250		k $\Omega$
Gradient of Position Sensing Signal	$a^{*4}$	$V_R=1V$		0.066		

\*1  $I_L=I_1+I_2$

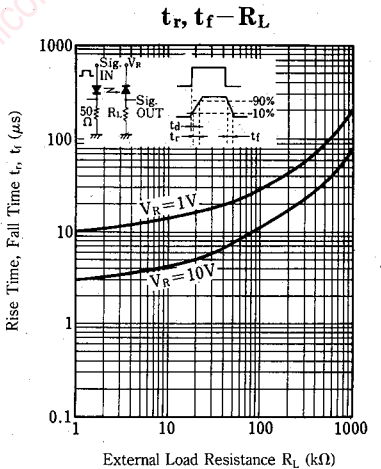
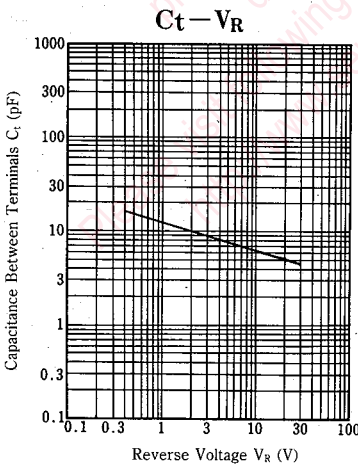
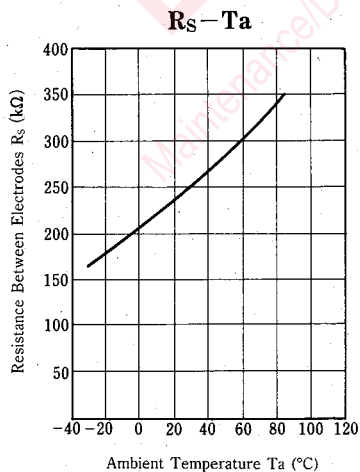
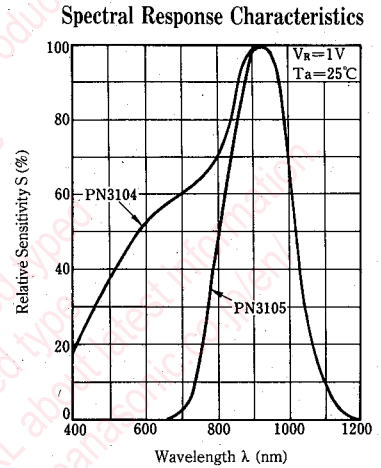
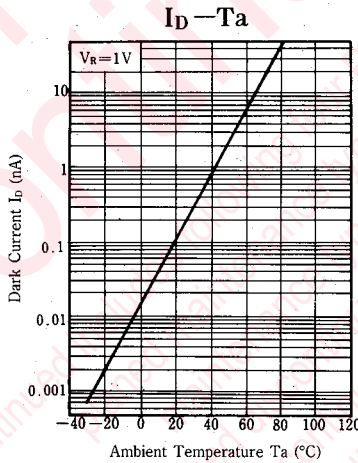
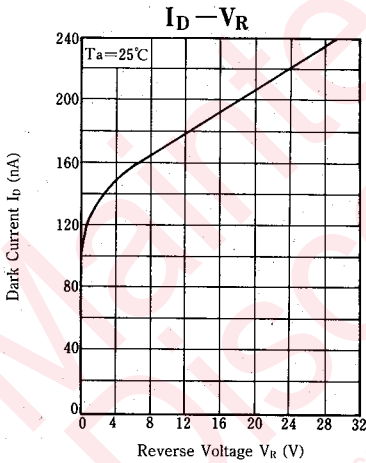
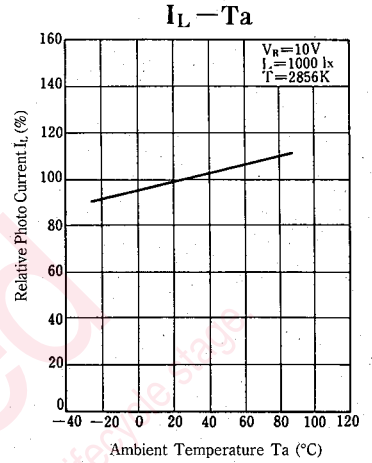
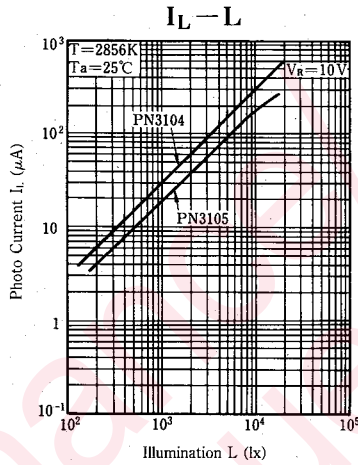
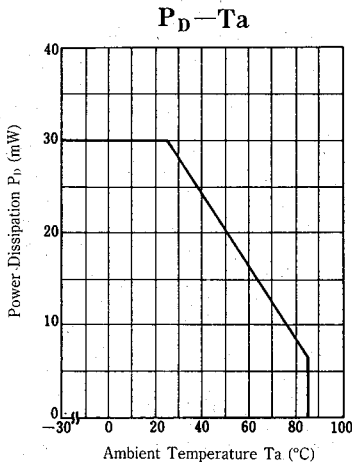
Photo Current of Anode A1, A2  
Source: Tungsten 2856K

\*2 Source: GaAs LED ( $\lambda=800nm$ )

\*3  $V_a$ : Applied Voltage between A1 and A2

\*4  $a=|(I_1-I_2)/(I_1+I_2)|$

The Incident Light is illuminated at 100 $\mu m$  distance from the standard position where  $I_1=I_2$ .



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