NEC
NEC Electronics Inc.

PH201A
PHOTO DETECTOR
GaAsP PHOTO DIODE
NEPOC SERIES

Description

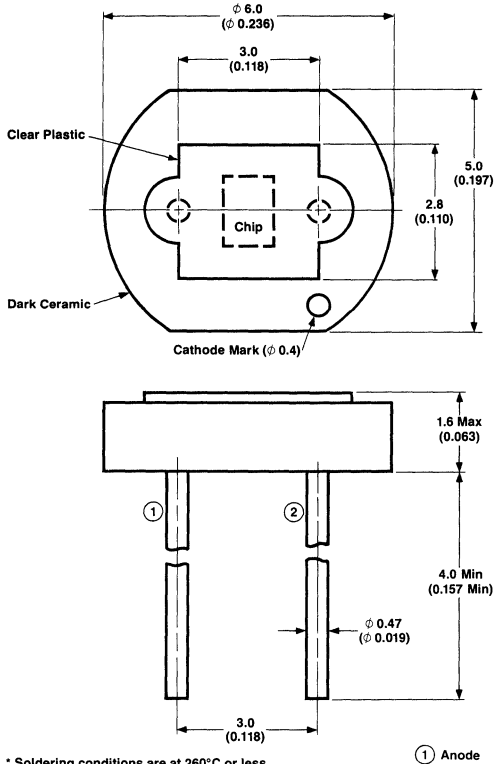
The PH201A is a GaAsP (Gallium Arsenide Phosphide) photo diode designed for use as a photo detector in electronic cameras.

It features a wide active area, spectral response close to that of the human eye and a wide photo current range.

Features

- ☐ Suitable for photo detector application in cameras
- ☐ No filter is required, the spectral response matches that of the human eye
- ☐ Low dark current

Package Dimensions



* Soldering conditions are at 260°C or less within 10s at 0.5mm or farther from the case.

① Anode
② Cathode

Package Dimensions in Millimeters (Inches)

83-000454A

Absolute Maximum Ratings

T_A = +25°C

Reverse Voltage, V_R	5.0V
Forward Current, I_F	1.0mA
Operating Temperature, T_{OPT}	−30°C to +60°C
Storage Temperature, T_{STG}	−40°C to +80°C

Electro-Optical Characteristics

T_A = +25°C

Parameters	Symbol	Limits Min	Typ	Max	Unit	Test Conditions
Photo Current	I_{SH}	60	90	120	nA	100lx[3]
Dark Current	I_D		0.3	3.0	pA	V_R = 2.0V
Photo Current Ratio	R[1]		10^6			0.001 ~ 1,000 lx[3]
Relative Spectral Response			See Fig.1			
Rise Time	t_r		150		μs	See rise time test circuit
Variation of Photo Current	Δ[2]		13		%	100lx[3, 4]

Notes: 1. $R = \frac{I_{SH} \text{ at } 1000 \text{ lx}}{I_{SH} \text{ at } 0.001 \text{ lx}}$

2. Δ = (I_{SH} at a color temperature of 2854K − I_{SH} at a color temperature of 4870K)/(I_{SH} at a color temperature of 2854K) × 100(%).
3. Measured with a tungsten filament lamp operated at a color temperature of 2854K.
4. Measured at a color temperature of 4870K.

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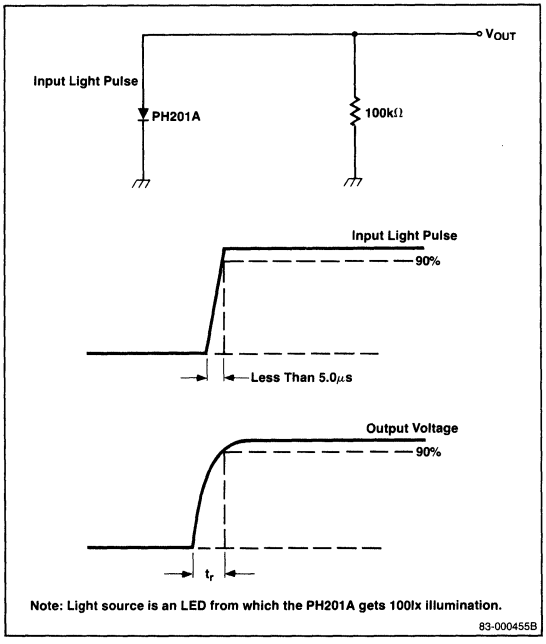
Rise Time Test Circuit



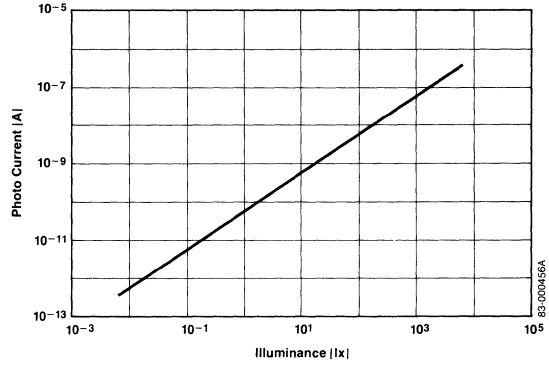
Note: Light source is an LED from which the PH201A gets 100lx illumination.

83-000455B

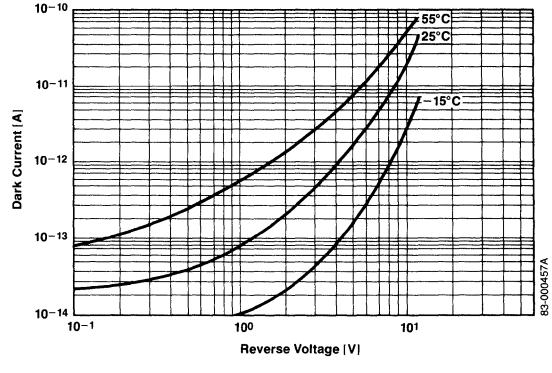
Typical Characteristics

T_A = +25°C

Photo Current vs Illuminance



Dark Current vs Reverse Voltage



Relative Spectral Response