PH302B
PIN PHOTO DIODE

NEPOC SERIES

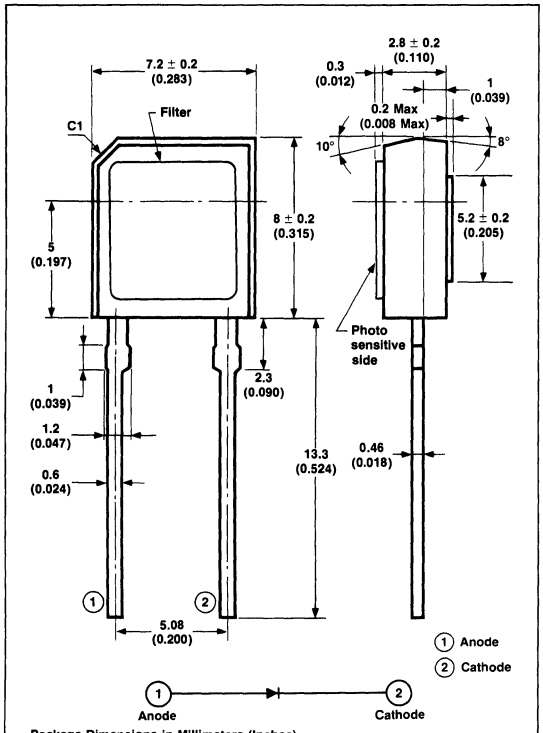
Description

The PH302B is a PIN photo diode similar to the PH302 but with an added filter which filters out visible light. The narrow spectral response range beginning at 840nm prevents any malfunction under fluorescent light. The large sensitive area and fast response make it suitable for various remote control applications.

Features

- ☐ Ultrahigh-speed response (t_r, t_f = 50ns)
- ☐ The maximum sensitive wavelength matches that of an infrared LED ($\lambda_{S\text{-}MAX}$ = 940nm)
- ☐ High sensitivity (34nA/lx)
- ☐ Wide dynamic range
- ☐ Visible light filtration (minimum sensitive wavelength: 840nm)

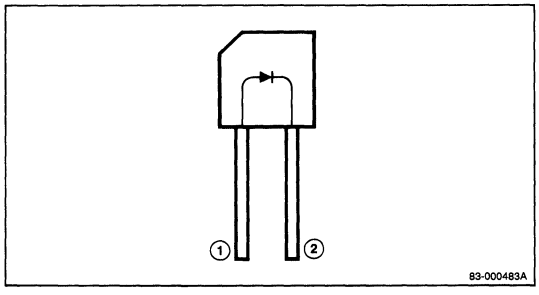
Package Dimensions



Package Dimensions in Millimeters (Inches)

83-000471A

Pin Connection



83-000483A

Absolute Maximum Ratings

T_A = +25°C

Reverse Voltage, V_R	32V
Power Dissipation, P_D	150mW
Junction Temperature, T_J[1]	80°C
Storage Temperature, T_{STG}[1]	−40°C~ +80°C

Note: 1. The maximum ratings of T_J and T_{STG} are those of the PH302. Because of the adhesive between the filter and diode, storage and operating temperature should be kept between −20°C and +60°C.

Electrical Characteristics

T_A = +25°C

Parameters	Symbol	Limits Min	Typ	Max	Unit	Test Conditions
Dark Current	I_R			30	nA	V_R = 10V
Maximum Sensitivity Wavelength	λ_{MAX}		940		nm	
Quantum Efficiency	η		0.88			λ = 940nm
Spectral Sensitivity	S	22	32		nA/lx[1]	V_R = 5V
Spectral Sensitivity	S		0.6		A/W	λ = 940nm
Rise and Fall Time	t_r, t_f		125		ns	R_L = kΩ, V_R = 0, λ = 940nm
	t_r, t_f		50		ns	R_L = kΩ, V_R = 5V, λ = 940nm
Capacitance	C_T		14		pF	V_R = 5V, f = 1MHz
Radiant Sensitive Area	A		9		mm^2	

Note: 1. Measured at a color temperature of 2854K.

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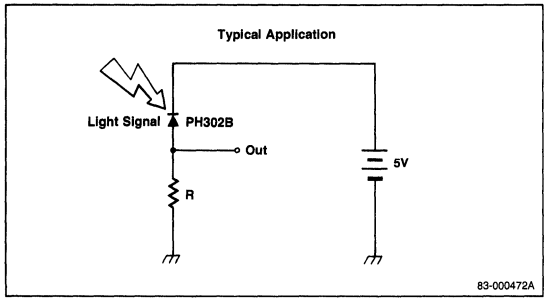
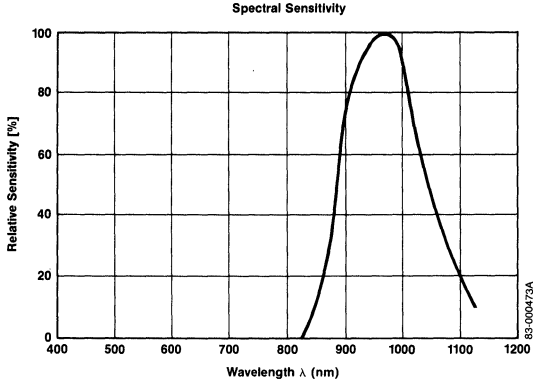
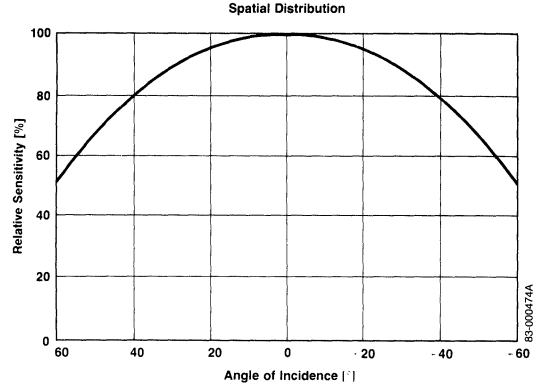
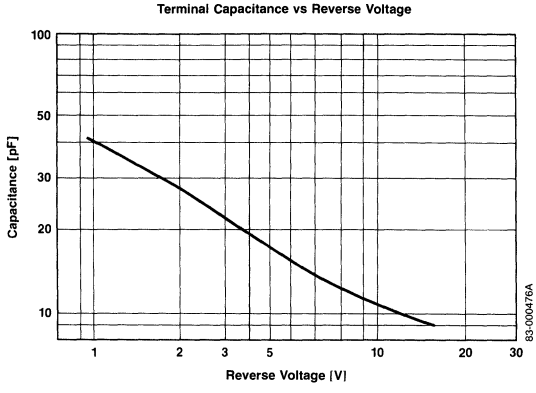


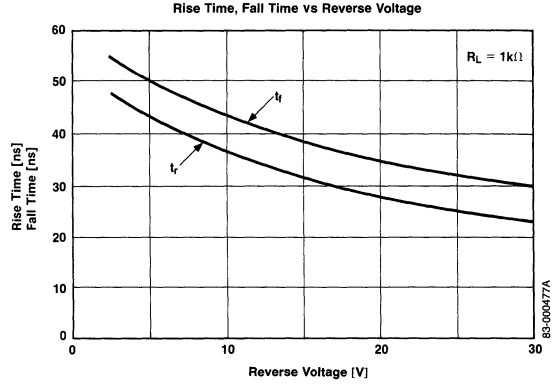
Typical Characteristics

T_A = +25°C





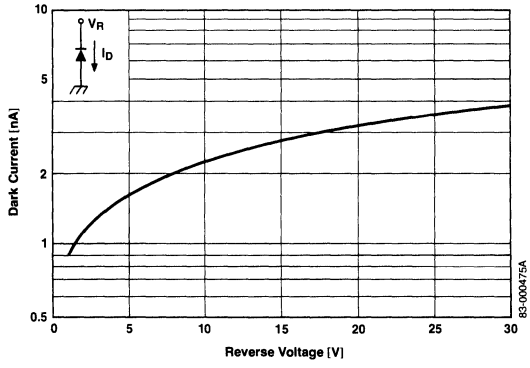




Typical Characteristics (cont)

T_A = +25°C

Dark Current vs Reverse Voltage



Dark Current vs Ambient Temperature

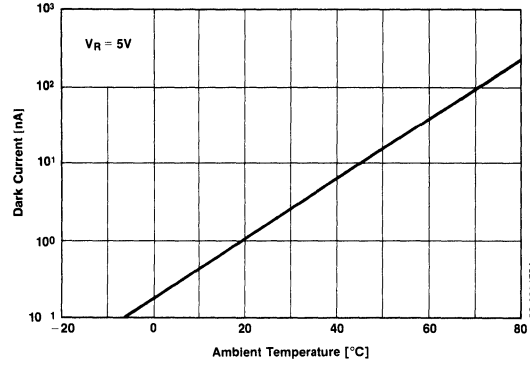


Photo Current vs Illumination

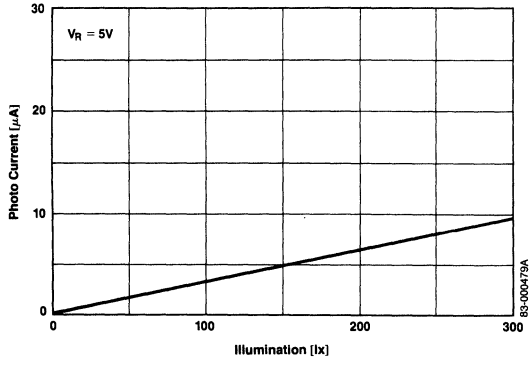


Photo Current vs Ambient Temperature

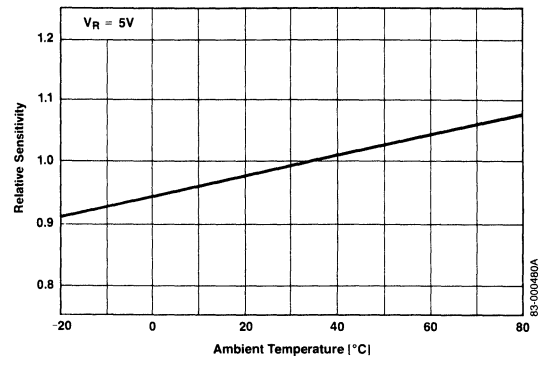


Photo Current vs Reverse Voltage

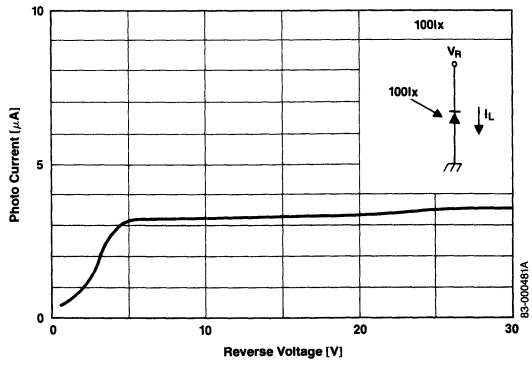
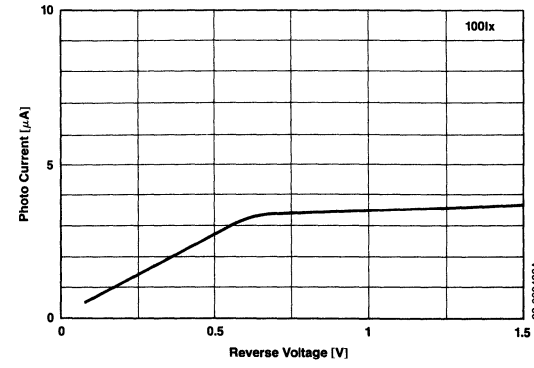


Photo Current vs Reverse Voltage



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Typical Characteristics (cont)

$T_A = +25°C$