PH309
PLASTIC MOLDED PIN PHOTO DIODE

NEPOC SERIES

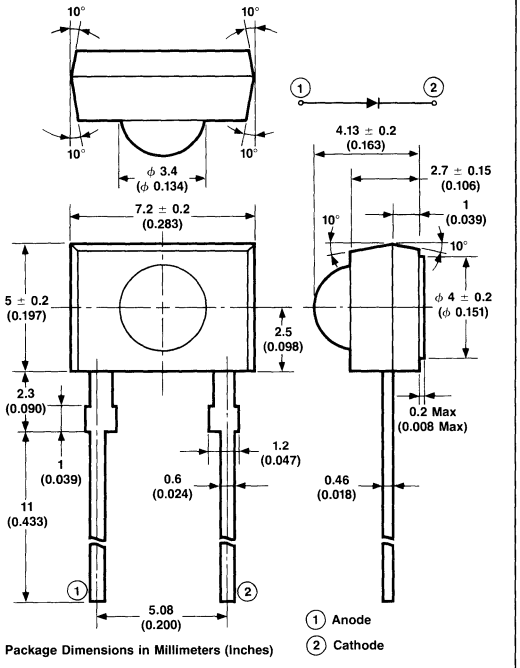
Description

The PH309 is a photo diode with a PIN structure. It has a wide photo-receiving area and high-speed response enabling applications for various types of remote control equipment. The resin material used for the package has the filter effect of transmitting infrared radiation.

Features

- ☐ Ultrahigh-speed response (t_r, t_f = 30ns)
- ☐ The wavelength of maximum sensitivity matches that of an infrared LED ($\lambda_{S\text{-}MAX}$ = 940nm)
- ☐ High sensitivity (31nA/lx)
- ☐ Wide dynamic range

Package Dimensions



Package Dimensions in Millimeters (Inches)

83-000495A

Absolute Maximum Ratings

T_A = +25°C

Reverse Voltage, V_R	20V
Power Dissipation, P_D	150mW
Junction Temperature, T_J	80°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
Dark Current	I_R			30	nA	V_R = 10V
Wavelength of Maximum Sensitivity	λ_{MAX}		940		nm	
Quantum Yield	η		0.88			λ = 940nm
Spectral Sensitivity	S		50		nA/lx	V_R = 5V
Spectral Sensitivity	S_{IR}		4.7		μA	V_R = 5V, H = 0.1mW/cm²*
Rise and Fall Time of the Photo Current from 10% to 90% and 90% to 10% of the Final Value	t_r, t_f		120		ns	R_L = 1kΩ, V_R = 0V, λ = 940nm
	t_r, t_f		30		ns	R_L = 1kΩ, V_R = 5V, λ = 940nm
Capacitance	C_T		11		pF	V_R = 5V, f = 1MHz
Radiant Sensitive Area	A		5.3		mm²	

*λ = 940nm

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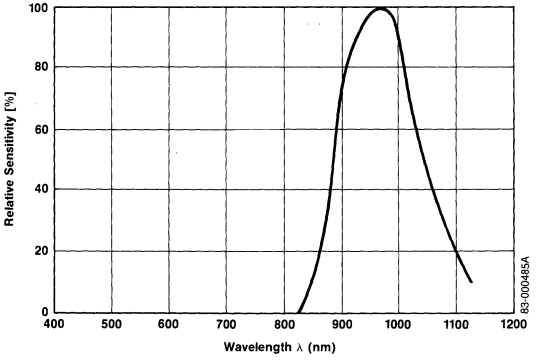
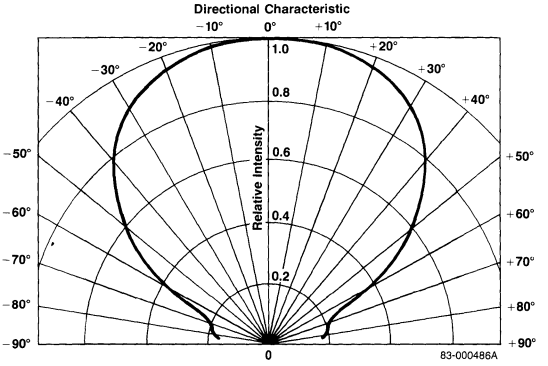
Typical Characteristics
T_A = +25°C

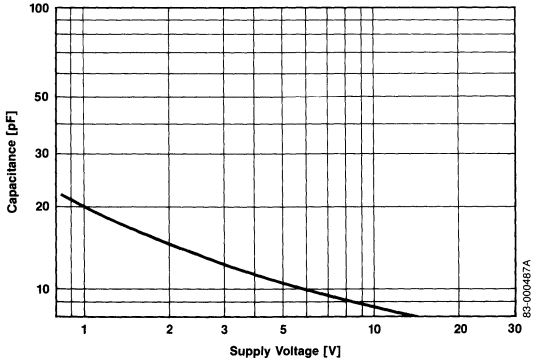
Wavelength Sensitivity



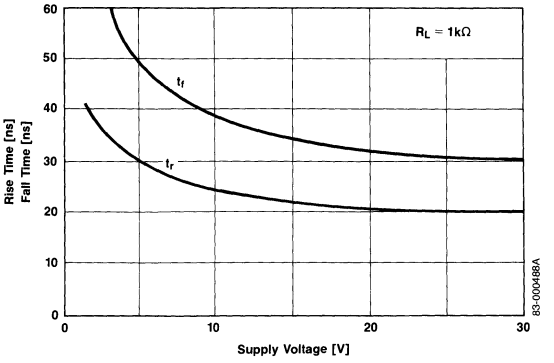
Directional Characteristic



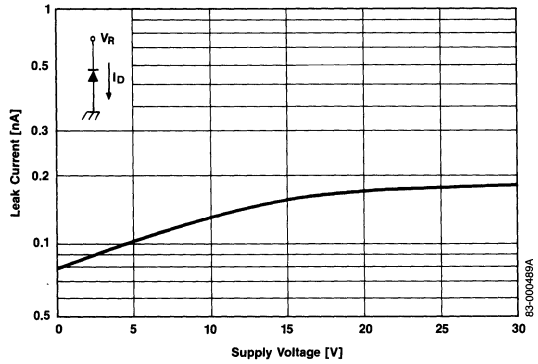
Capacitance vs Supply Voltage



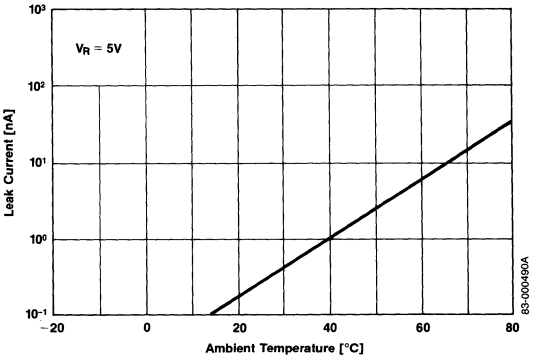
Rise Time and Fall Time vs Supply Voltage



Leak Current vs Supply Voltage



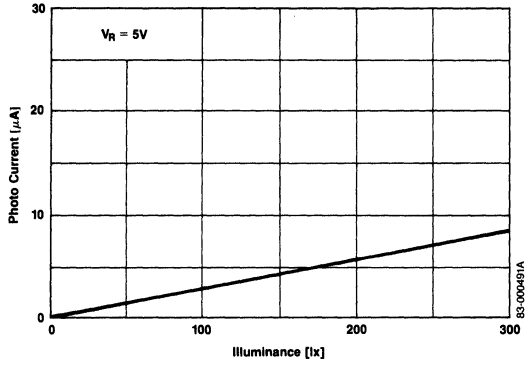
Leak Current vs Ambient Temperature



Typical Characteristics (cont)

T_A = +25°C

Photo Current vs Illuminance



Relative vs Ambient Temperature

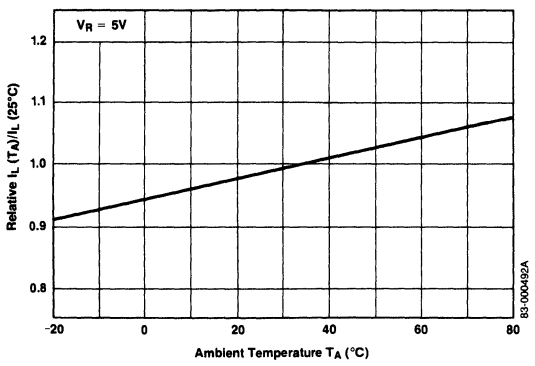


Photo Current vs Supply Voltage

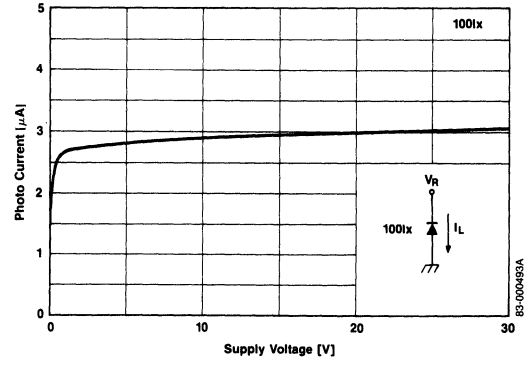
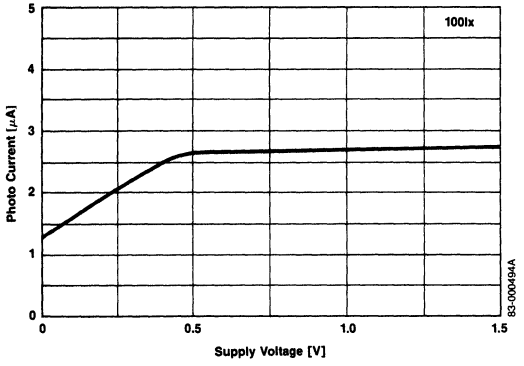
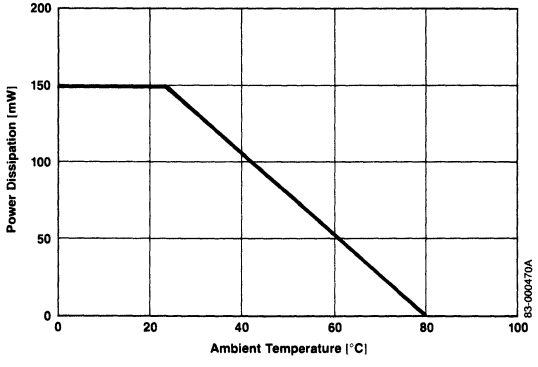


Photo Current vs Supply Voltage



Power Dissipation vs Ambient Temperature



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