

HFD3013-002/XXX

Silicon PIN Photodiode

FEATURES

- Low capacitance
- High speed: $t_r = 1.2$ ns typical
- High responsivity: 0.33 A/W
- Housing electrically isolated
- Wave solderable
- Mounting options
 - SMA single hole
 - ST single hole
 - SMA PCB
 - ST PCB
 - SMA 4 hole

DESCRIPTION

The HFD3013-002/XXX PIN Photodiode is designed for high speed use in fiber optic receivers. It has a large area detector, providing efficient response to 50 - 100 μ m diameter fibers at wavelengths of 650 to 950 nanometers. Light is collected using a 600 micron micro lens mounted on the detector surface. The HFD3013-002/XXX is comprised of an HFD3013 PIN photodiode which is mounted in a fiber optic connector which aligns the component's optical axis with the axis of the optical fiber.

The HFD3013-002/XXXs case is electrically isolated from the anode and cathode terminals to enhance the EMI/RFI shielding which increases the sensitivity and speed. The housing acts as a shield for the PIN photodiode component.

HFD3013-002/XXX

Silicon PIN Photodiode

ELECTRO-OPTICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise stated)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Flux Responsivity, $\lambda = 850 \text{ nm}$	R	0.30	0.33		A/W	50 μm core fiber
Dark Current	I_D		0.05	1.5	nA	$V_R = 30 \text{ V}$
Total Capacitance	C_A		1.5		pF	$V_R = 5 \text{ V}$, Anode Grounded
	C_C		1.5	2	pF	$V_R = 5 \text{ V}$, Cathode Grounded
Response Time						
	10-90%		t_R	1.2	ns	$V_R = 3.5 \text{ V}$
90-10%			t_F	1.2	ns	$V_R = 3.5 \text{ V}$
Field of View	FoV		32		Degrees	

ABSOLUTE MAXIMUM RATINGS

($T_{\text{case}} = 25^\circ\text{C}$ unless otherwise noted)

Storage temperature	-65 to +150°C
Operating temperature	-55 to +125°C
Lead solder temperature	260°C for 10 s
Case/cathode (anode) voltage	125 V
Reverse voltage	50 V

Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational section of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods of time may affect reliability.

4551830 0022162 586

Honeywell

HFD3013-002/XXX

Silicon PIN Photodiode

ORDER GUIDE

Description	Catalog Listing
Standard silicon PIN photodiode	HFD3013-002/XXX

MOUNTING OPTIONS

Substitute XXX with one of the following 3 letter combinations

- SMA single hole - AAA
- ST single hole - BAA
- SMA PCB - ABA
- ST PCB - BBA
- SMA 4 hole - ADA

Dimensions on page 441

CAUTION

The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product.



FIBER INTERFACE

Honeywell detectors are designed to interface with multimode fibers with sizes (core/cladding diameters) ranging from 50/125 to 200/230 microns. Honeywell performs final tests using 100/140 micron core fiber. The fiber chosen by the end user will depend upon a number of application issues (distance, link budget, cable attenuation, splice attenuation, and safety margin). The 50/125 and 62.5/125 micron fibers have the advantages of high bandwidth and low cost, making them ideal for higher bandwidth installations. The use of 100/140 and 200/230 micron core fibers results in greater power being coupled by the transmitter, making it easier to splice or connect in bulkhead areas. Optical cables can be purchased from a number of sources.

Fig. 1 Relative Response vs Polar Angle

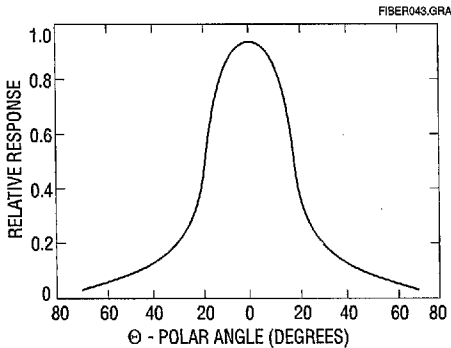
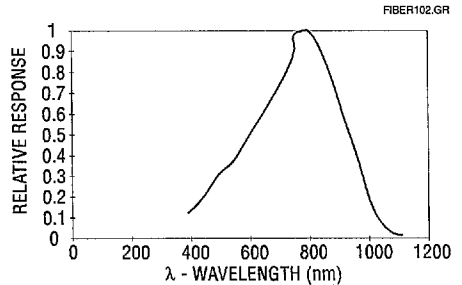


Fig. 2 Spectral Responsivity



HFD3013-002/XXX

Silicon PIN Photodiode

Fig. 3 Relative Responsivity vs Temperature

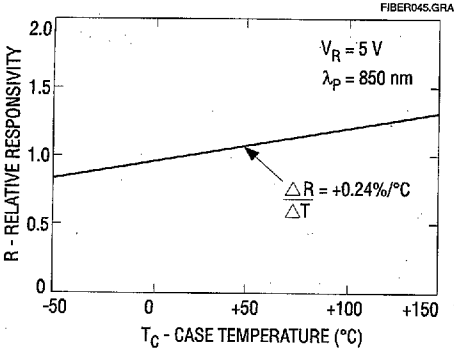
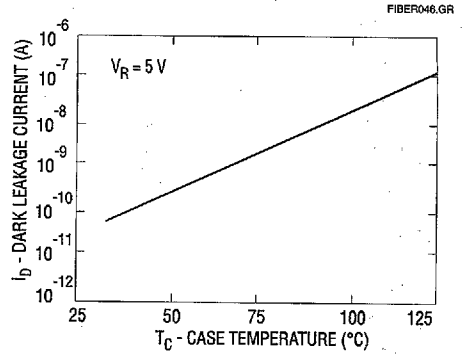


Fig. 4 Dark Leakage Current vs Temperature



4551830 0022164 359

Honeywell