



# Fiber Optic PIN Diode

**AFD 1200**  
**AFD 2200**  
**AFD 3200**  
**AFD 5200**

Optoelectronics Products

## Description

This sensor is a silicon planar PIN photodiode. It is an ultra-fast light detector, sensitive to light in the visible and near infrared part of the spectrum. Although these devices are packaged especially for fiber optics they may be used in many other optical applications. Due to the low capacitance of this device response times of less than 2 nanoseconds are possible. The low dark current allows for detection of low light levels. Under reverse bias these devices exhibit excellent linearity. Directly compatible with the Amp, Amphenol, and OFTI connector systems good EMI/RFI immunity can be achieved. Available in a TO-18 window can, plastic lensed cap, FOAC, and pig tailed packages.

- \* HIGH RESPONSIVITY (0.5 A/W)
- \* EXCELLENT LINEARITY
- \* BROAD SPECTRAL RESPONSE
- \* HIGH SPEED
- \* HIGH RELIABILITY
- \* LOW CAPACITANCE
- \* LOW NOISE
- \* HIGH NA OPTICAL PORT
- \* MAY BE USED WITH AFE XXXX EMITTERS
- \* LOW PROFILE IN RECOMMENDED CONNECTOR < .300" HIGH

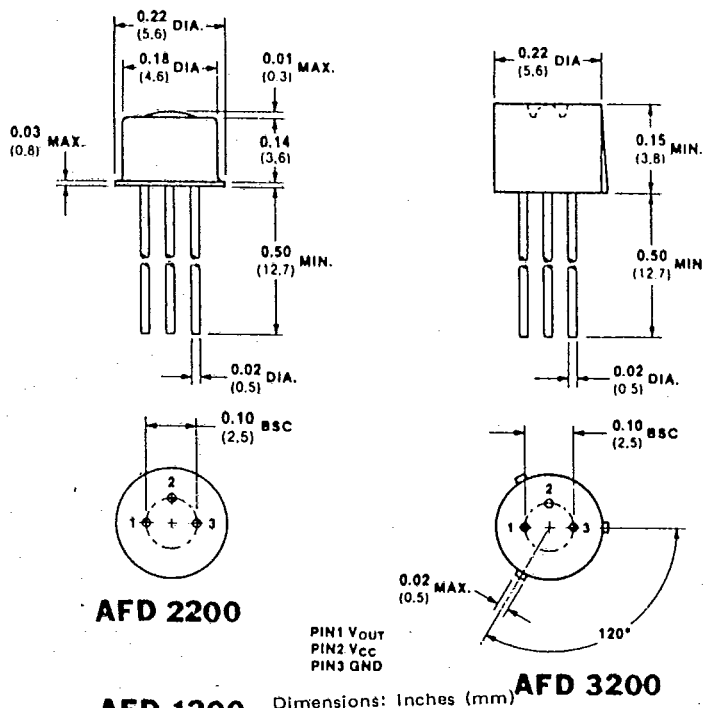
**Absolute Maximum Ratings**  
 (No Derating Required Up to 70°C)

**Maximum Temperature**  
 Operating Temperature 0°C to +70°C  
 Storage Temperature -55°C to +125°C  
 Pin Temperature (Soldering, 10 s) (1.6 mm below seating plane) 260°C

**Maximum Power Dissipation**  
 Power Dissipation 100mW  
 Dissipation

**Maximum Voltage**  
 V<sub>R</sub> Reverse Voltage 20V

## Package Outline

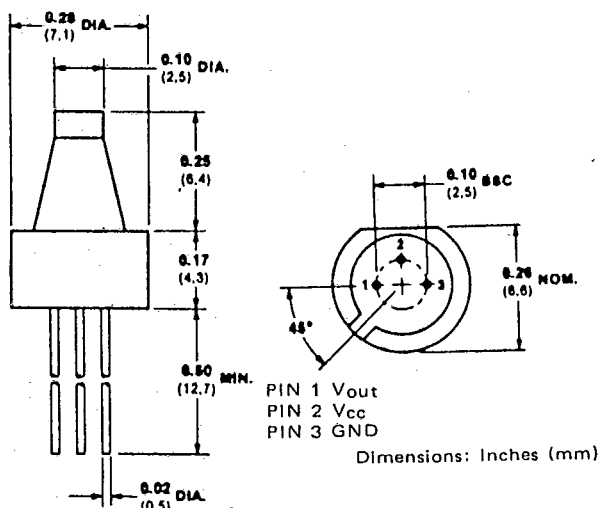


**AFD 2200**

**AFD 3200**

Dimensions: Inches (mm)

**AFD 1200**

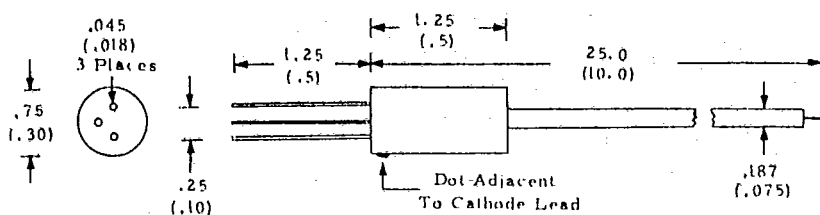


PIN 1 Vout  
 PIN 2 Vcc  
 PIN 3 GND

Dimensions: Inches (mm)

**AFD 5200**

MECHANICAL CHARACTERISTICS Dimensions Are Typical And In cm (Inch)



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ELECTRICAL/OPTICAL CHARACTERISTICS  $T_A = 25^\circ\text{C}$

Symbol	Characteristic	Min	Typ	Max	Units	Test Conditions
A	Active Area		314		mils <sup>2</sup>	
R	Responsivity		.5		A/W	$\lambda = 820\text{nm}$
$I_D$	Dark Current		1	10	nA	$V_R = 10\text{ V}$
NEP	Noise Equivalent Power		$5 \times 10^{-14}$		W/VHz	$\lambda = 820\text{nm}$
$C_j$	Junction Capacitance		2		pf	$V_R = 10\text{ V}$
$t_r, t_f$	Rise Time, Fall Time		1	5	nS	$V_R = 20\text{ V},$ $R_L = 50\ \Omega$