

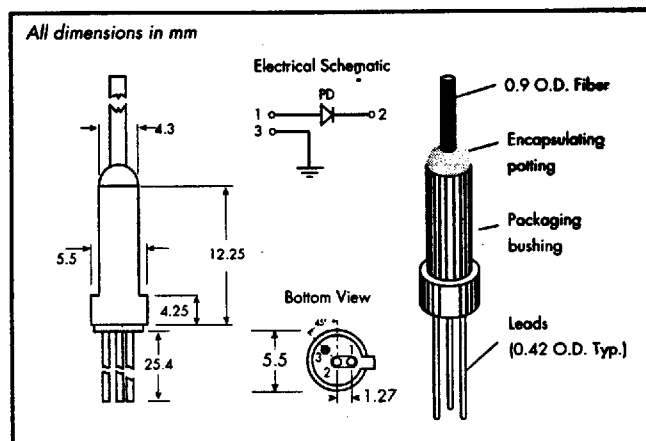
# Low Distortion InGaAs PIN Photodiode for CATV / Return Path Applications

## Features

- Low intermodulation distortion
- High responsivity at 1330 nm or 1550 nm
- Low capacitance
- Low optical back reflection
- Planar, passivated photodiode chip with proprietary structure for AM CATV

## Applications

- AM fiber optic CATV receiver
  - Return path receivers to 200 MHz
  - Systems with low channel loading
- High speed analog receiver



## Specifications

Conditions (unless noted): 25°C,  $V_R = 5V$

MODEL EPM718FJ-S

Parameter	Min.	Typ.	Max.	Units
Active Diameter		75		$\mu m$
Responsivity @ 1300 nm <sup>1</sup>	0.80	0.85		A/W
Distortion Product <sup>2</sup>				
– H Grade			-65	dBc
– J Grade			-70	dBc
Back Reflection		-45	-40	dB
Dark Current		3.0	5.0	nA
Total Capacitance <sup>3</sup>		0.55	0.75	pF
Bandwidth <sup>4</sup>		2.0		GHz
Rise Time <sup>5</sup>		175		pS

## Maximum Ratings

MODEL EPM718FJ-S

Parameter	Rating	Units
Reverse Voltage	25	V
Reverse Current <sup>A</sup>	10	mA
Forward Current <sup>B</sup>	10	mA
Power Dissipation	100	mW
Operating Temperature	-40 / +85	°C
Storage Temperature	-40 / +85	°C

- Notes:** A) Under reverse bias, current at which device may be damaged.  
 B) Under forward bias, current at which device may be damaged.

- Notes:** 1) Responsivity testing @ 1550 nm is also available as an option.  
 2) Second order intermodulation distortion product (IM2)  
 $V_R = 12V$ ,  $P_{avg} = 0 dBm$ , modulation index = 0.7,  $R_{LOAD} = 50\Omega$   
 $f_1 + f_2 = 200 MHz$ ,  $f_2 - f_1 = 10 MHz$   
 3) Measured with case grounded  
 4) -3dB point into a 50 $\Omega$  load  
 5)  $R_{LOAD} = 50\Omega$

Figure 1

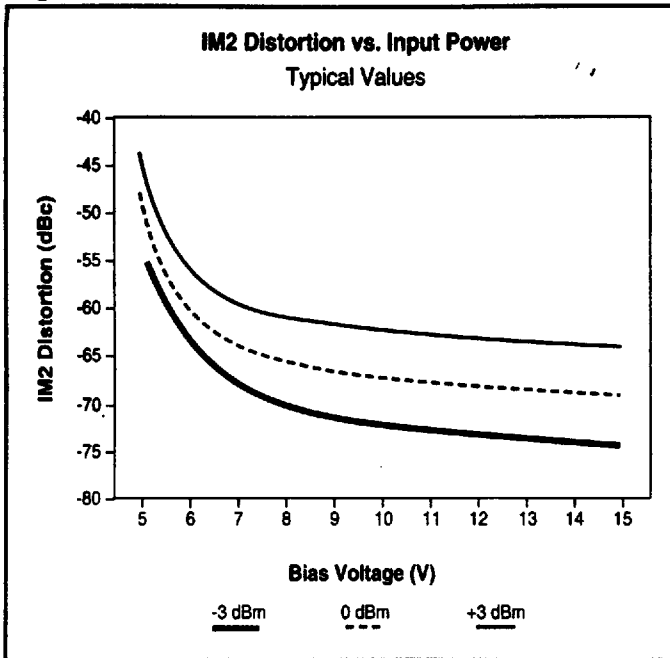


Figure 2

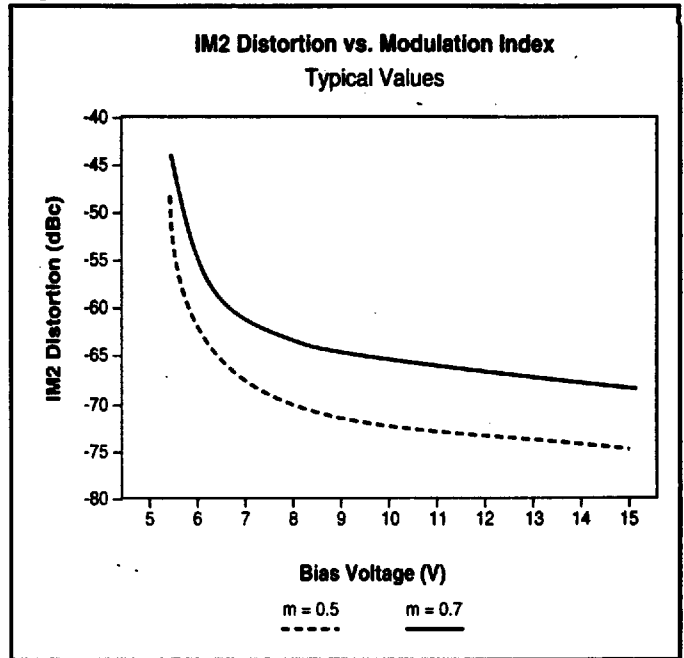


Figure 3

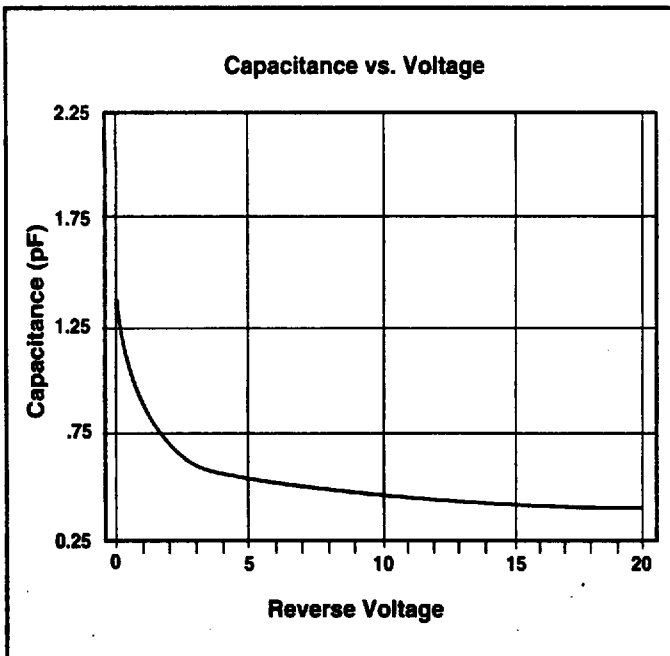
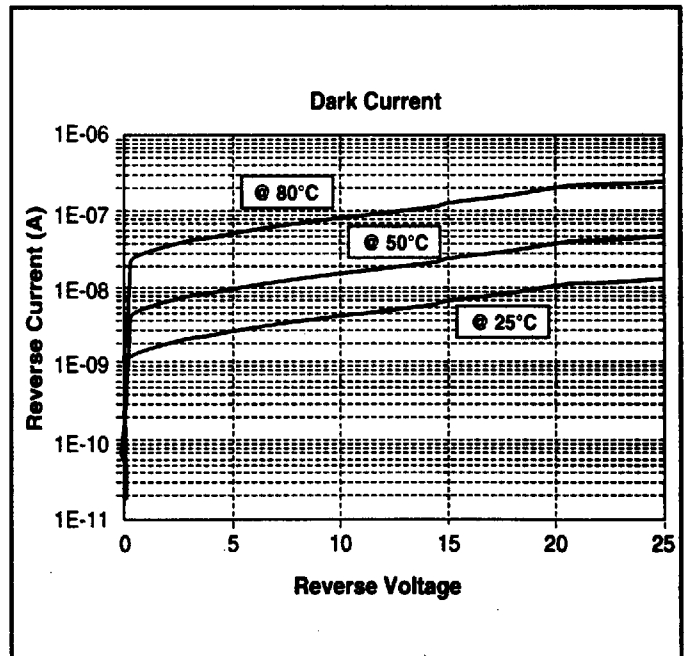


Figure 4



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