JDS Uniphase

Product Bulletin

EPM 6xx Series

C-Band, L-Band, Pass Band
Low Leakage
PIN Photodiodes

605 C-Band Monitor
606 L-Band Monitor
613 Pass Band Monitor
650 General Purpose Monitor

Preliminary Specifications

Conditions (unless noted):
Temperature = 25°C, V_R = 5V
All specifications without connector.

	EPM 605			EPM 606			EPM 613			EPM 650			
Parameter	**Min**	**Typ**	**Max**	**Min**	**Typ**	**Max**	**Min**	**Typ**	**Max**	**Min**	**Typ**	**Max**	**Units**
Active Diameter		75			75			75			100		µm
Responsivity													
λ = 980 nm							0.30						A/W
λ = 1310 nm	0.80						0.85			0.80			A/W
λ = 1550 nm	0.85			0.85			0.0004			0.85			A/W
λ = 1625 nm	0.80			0.80									A/W
Back Reflection													
λ = 980 nm							-30						dB
λ = 1310 nm							-40			-40			dB
λ = 1550 nm	-40												dB
λ = 1625 nm				-40									dB
Dark Current													
Standard Leakage			0.6			0.6			1.0			1.0	nA
Low Leakage			0.08			0.08							nA
Capacitance[1]			0.75			0.75			0.9			1.25	pF
Bandwidth[2]		2.0			2.0				1.5		1.5		GHz
PDL													
λ = 980 nm								0.2					dB
λ = 1310 nm		0.1									0.1		dB
λ = 1550 nm		0.1			0.1								dB
λ = 1625 nm					0.1								dB
Isolation Between Bands													
1310 and 1550 nm								33					dB
980 and 1550 nm								29					dB

1. Measured with case grounded.
2. -3 dB point into a 50 Ω load.

Application Preference

Application/Product	EPM 605	EPM 605LL	EPM 606	EPM 606LL	EPM 613	EPM 650
C-Band	●●	●●	●	●		●
C-Band, High Sensitivity		●●		●		
L-Band			●●	●●		
L-Band, Low Sensitivity				●●		
1310 Band	●	●			●●	●●
EDFA	●●	●●	●●	●●		●
DWDM	●●	●●	●●	●●		●
40 Gb and 10 Gb Line Monitors	●●	●●	●●	●●		●
980 Forward Pump	●	●	●	●	●●	
1310/1550 PON Networks	●	●	●	●	●●	●
1480 Pump Monitors	●	●	●	●		●

●● **Strong Preference** ● **Preference**

The EPM 6xx series are photodectors designed for optical network monitoring applications. The photodetector die is fabricated with a proprietary InGaAs process in our wafer fab and assembled into a hermetically-sealed package with an antireflective-coated lens. A stainless steel bushing is used to actively couple the fiber to the package.

The fiber is reinforced with a rubber boot which relieves fiber bending stresses. The EPM 6xx series can be produced without a connector or with a variety of industry standard connectors. They are also available with a mounting bracket which allows both vertical panel mounting and horizontal flush-to-board mounting.

Low leakage versions (EPM 605LL and EPM 606LL) of the EPM 605 and EPM 606 are available with the same features connectors and brackets.

Maximum Ratings

Parameter	Min	Typ	Max	Units
Forward Current[A]			10	mA
Reverse Current[B]			10	mA
Reverse Voltage			25	V
Power Dissipation			100	mW
Operating Case Temperature	-40		85	℃
Soldering Temperature			250	℃
Storage Temperature	-40		85	℃

A. Under forward bias, current at which device may be damaged.
B. Under reverse bias, current at which device may be damaged.

Key Features

Electro-optical

- Low back reflection
- High responsivity in L-band at 1625 nm (EPM 606)

Packaging

- Single mode 900 µm fiber with or without a connector
- Single mode 250 µm fiber without a connector

Ordering Information

Product Model	Fiber Description
EPM 605	Low back reflection, C-Band PIN Photodiode w/ 900 µm buffer without connector
EPM 605-250	250 µm buffer
EPM 605LL	Low back reflection, low leakage, C-Band PIN Photodiode w/ 900 µm buffer without connector
EPM 605-250 LL	250 µm buffer
EPM 606	Low back reflection, L-Band PIN Photodiode w/ 900 µm buffer without connector
EPM 606-250	250 µm buffer
EPM 606LL	Low back reflection, low leakage, L-Band PIN Photodiode w/ 900 µm buffer without connector
EPM 606-250 LL	250 µm buffer
EPM 613	Low back reflection, Pass-Band PIN Photodiode w/ 900 µm buffer without connector
EPM 650	General purpose, high responsivity, PIN Photodiode w/ 900 µm buffer without connector
EPM 650-250	250 µm buffer

Note: All of the above can be ordered with the following connectors by adding the xC/SPC suffix to the base product number as shown below.

EPM 6xx xx FC/SC	900 µm buffer with FC/SPC connector
EPM 6xx xx SC/SC	900 µm buffer with SC/SPC connector

Quality Vision

We have a leadership position in the optoelectronic industry with a vision for excellence in quality. The company is committed to providing customers with the highest levels of quality and reliability in design and manufacturing. The top priorities remain continuous process improvement and total customer satisfaction. We obtained ISO 9001 certification in 1996. In addition, the company maintains a strict quality control program to ensure that all products meet or surpass customer requirements.

Precautions for Use

ESD protection is imperative. Use of grounding straps, anti-static mats, and other standard ESD protective equipment is required when handling or testing an InGaAs PIN or any other junction photodiode.

The flexible 250 µm fiber coating can be mechanically stripped and provides protection for the optical fiber under normal handling characteristics.

Soldering temperature of the leads should not exceed 260 °C for more than 10 seconds.

Fiber pigtails should be handled with less than 10 N pull and with a bending radius greater than 1".

Figure 1

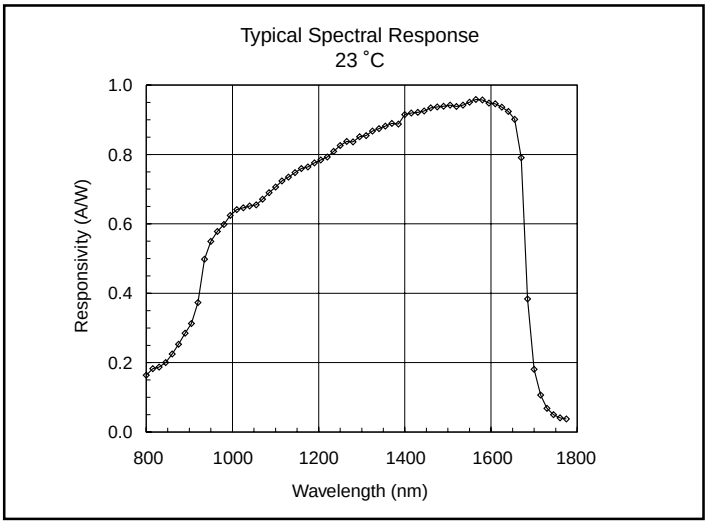


Figure 2

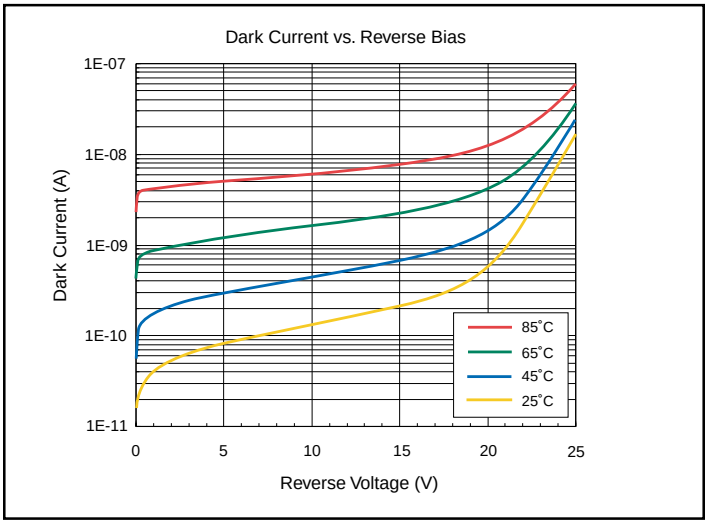


Figure 3

(EPM 605/606)

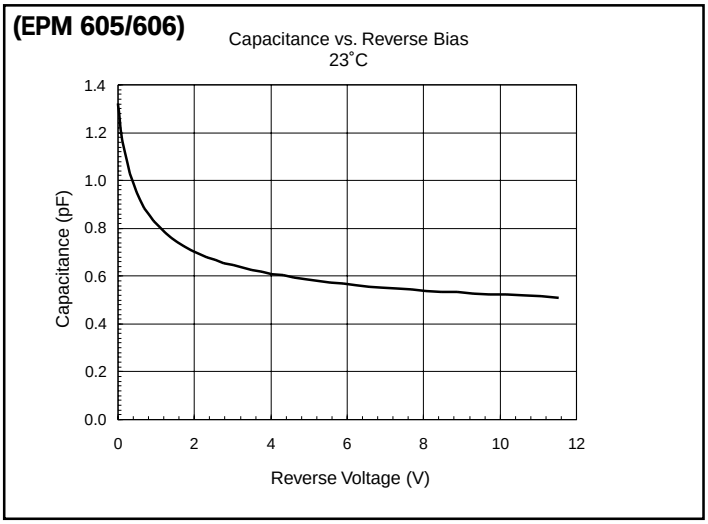


Figure 4

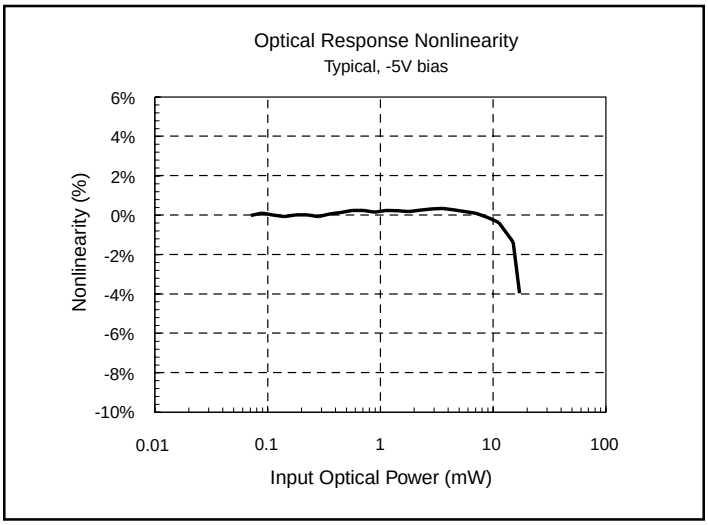


Figure 5

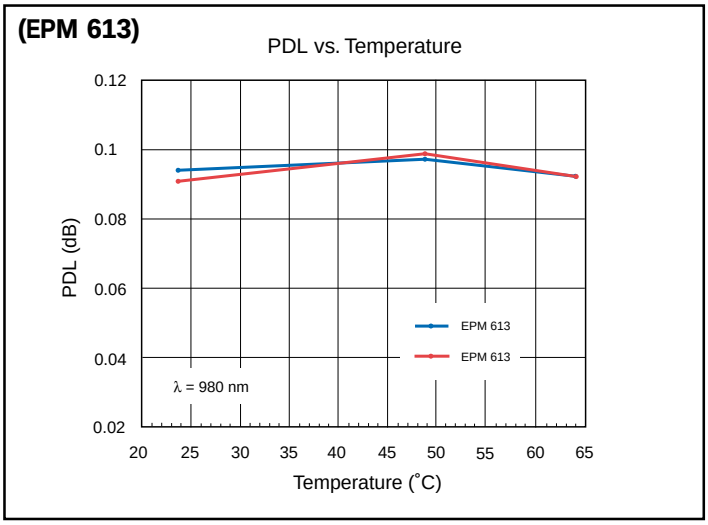


Figure 6

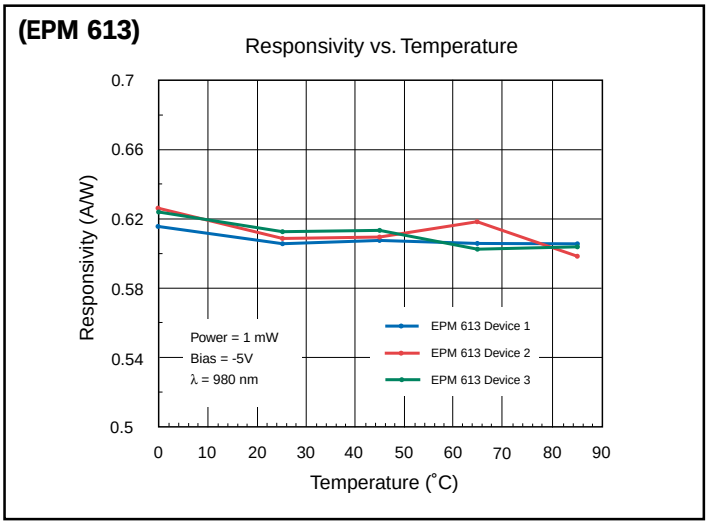


Figure 7

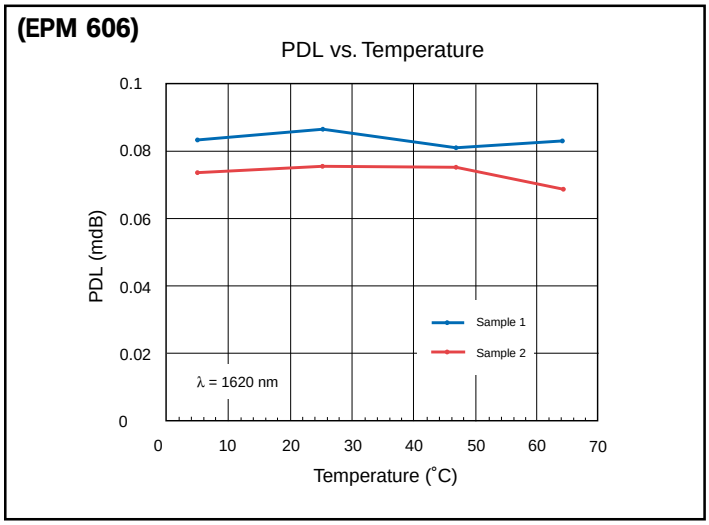


Figure 8

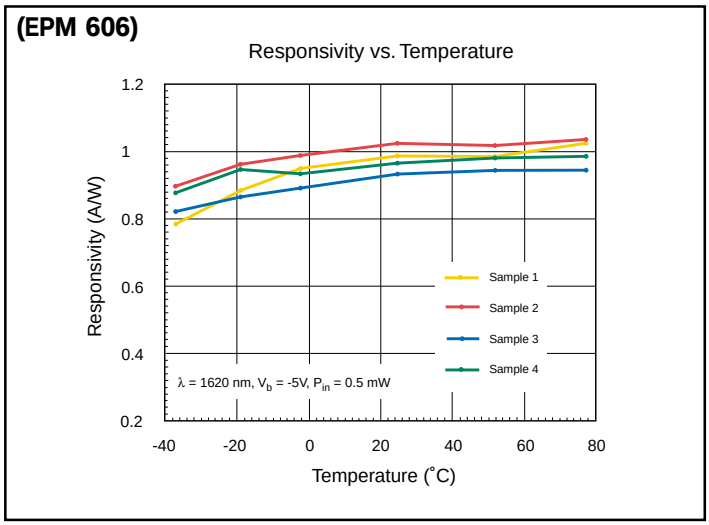


Figure 9

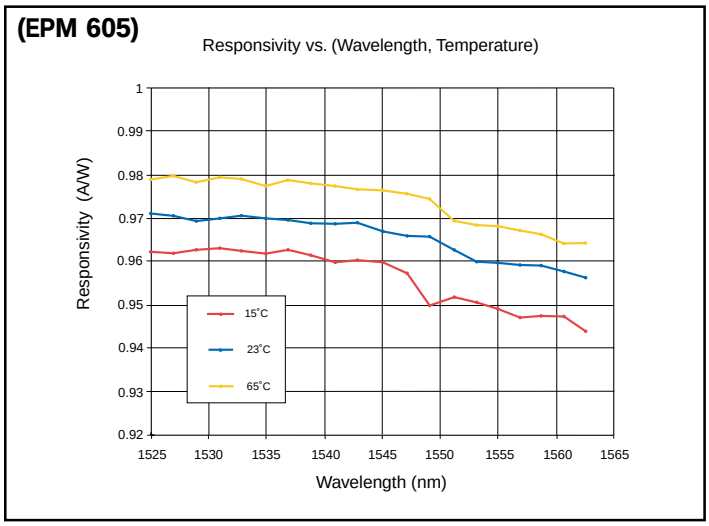


Figure 10

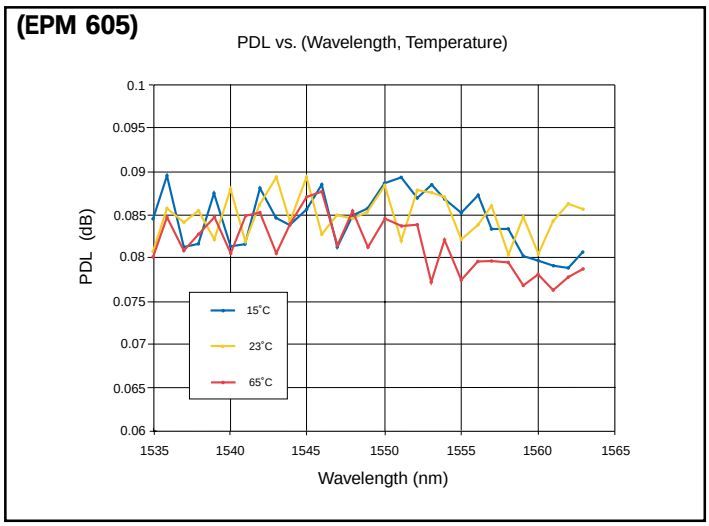


Figure 11

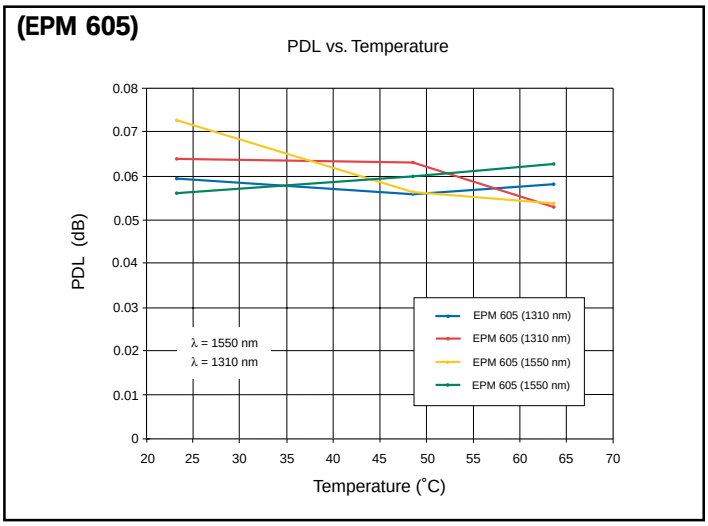


Figure 12

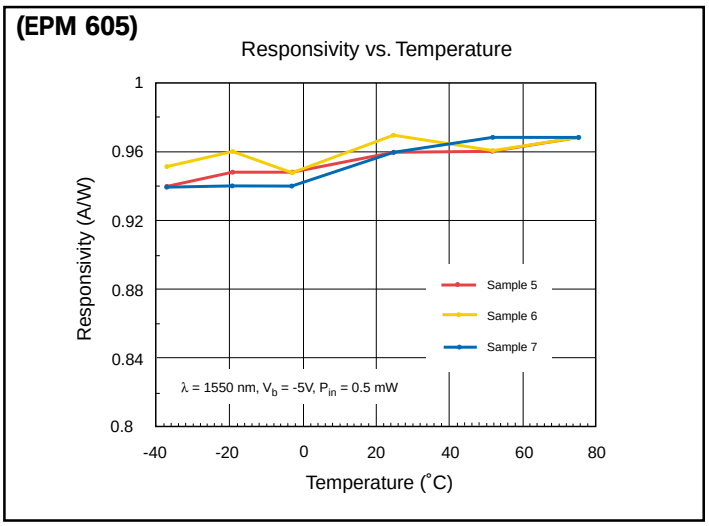


Figure 13

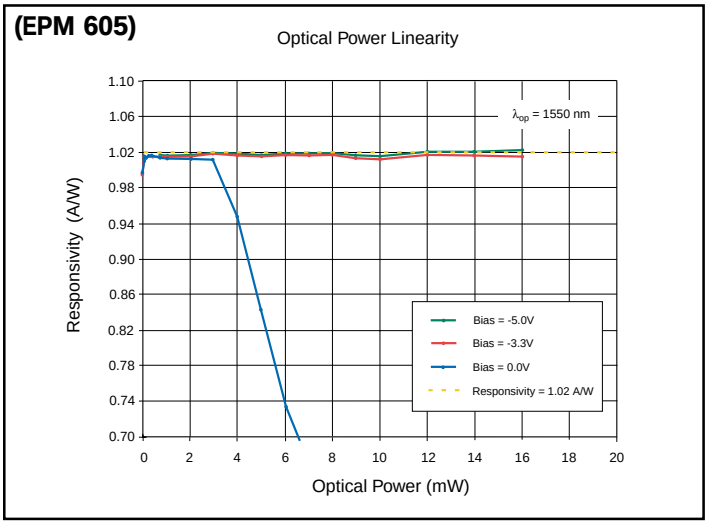
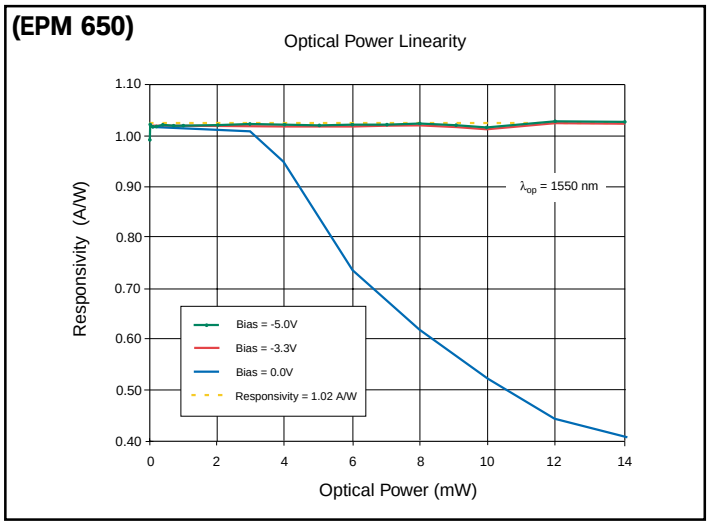
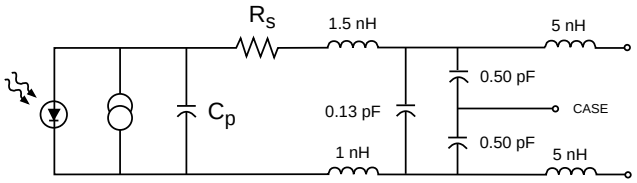


Figure 14



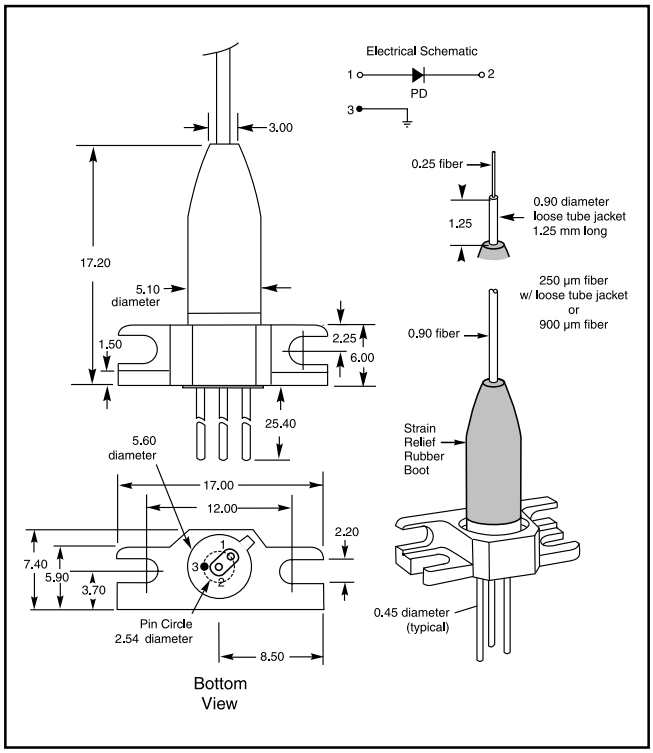
Equivalent Circuit for EPM 6xx Series



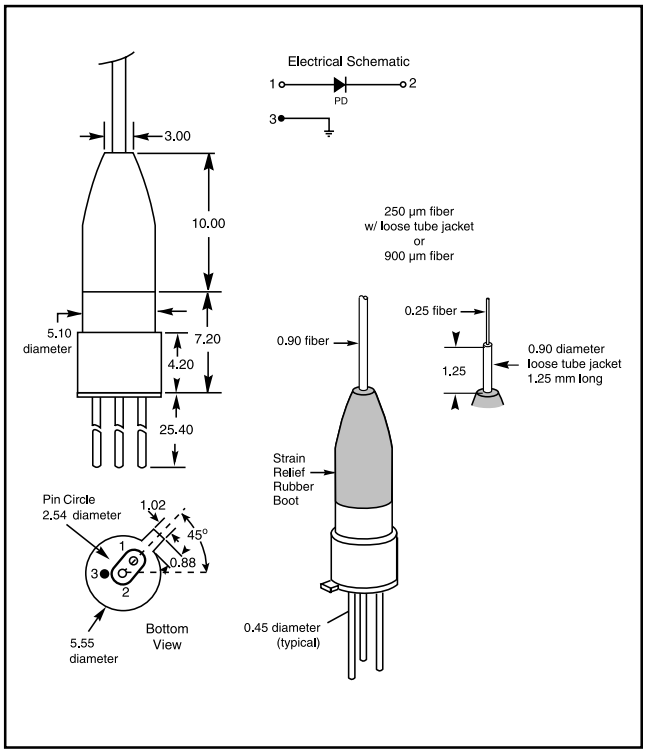
	Rs	Cp
EPM 605	5 Ω	0.55 pF
EPM 606	5 Ω	0.55 pF
EPM 613	5 Ω	0.75 pF
EPM 650	6 Ω	1.00 pF

Mechanical Dimensions
All dimensions in mm (nominal)

EPM 6xx with Dual Mount Bracket



EPM 6xx without Dual Mount Bracket



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