

## Features

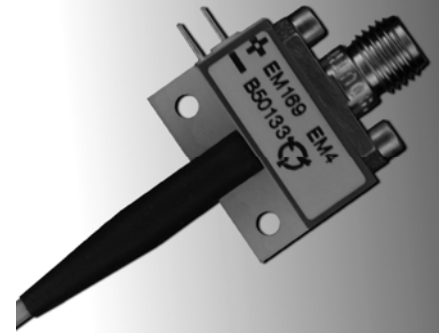
- $S_{21} > 20\text{GHz}$ ,  $S_{22} < -8\text{dB}$
- Response  $> 0.80\text{A/W}$
- Extended temperature range
- SMF-28, PM or specialty MFD fiber

## Applications

- RF Links
- OC-192, STM-64

## General Description

The EM4 high speed detector module is designed for both digital and analog applications with 50ohm impedance matched RF connections. The module contains an InGaAs PIN photodiode and necessary matching electronics. The package is hermetically sealed with a SMA compatible RF connector. The module has a ripple free and linear response from DC to 20GHz.



## Ordering Information

Part	Fiber	Jacket	Connector
EM169-03	SMF-28	900 $\mu\text{m}$ Hytrel	FC/APC
EM169-04	SMF-28	900 $\mu\text{m}$ Hytrel	SC/APC
EM169-09	PM Fiber	-	FC/APC

## Absolute Maximum Ratings

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and operation of the device at these or conditions beyond these are not implied. Exposure to absolute maximum ratings for extended periods of time may affect device reliability.

Parameter	Sym.	Condition	Min	Max	Unit
Storage Temperature	$T_{\text{STG}}$		-55	130	$^{\circ}\text{C}$
Operating Temperature	$T_{\text{OP}}$		-40	110	$^{\circ}\text{C}$
Bias Voltage	$V_{\text{B}}$		-0.5	25	V
Optical Input Power	$P_{\text{OPT}}$			20	mW
Lead Soldering Time				10	s
Lead Soldering temperature				250	$^{\circ}\text{C}$
ESD		HBM		500	V

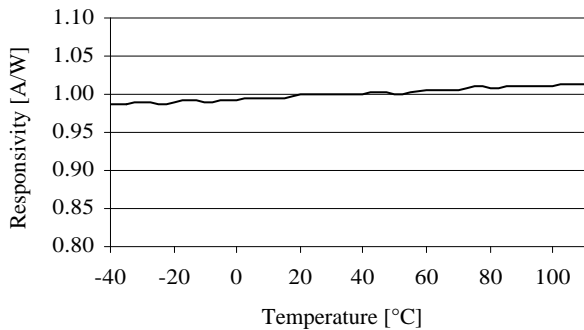
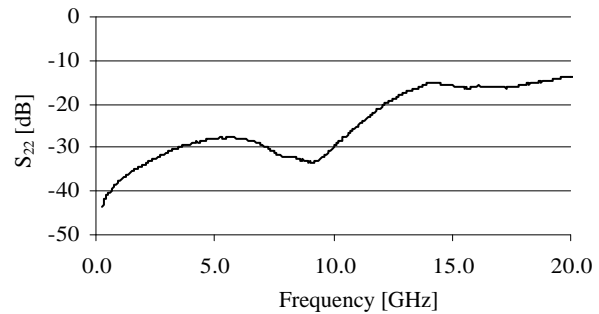
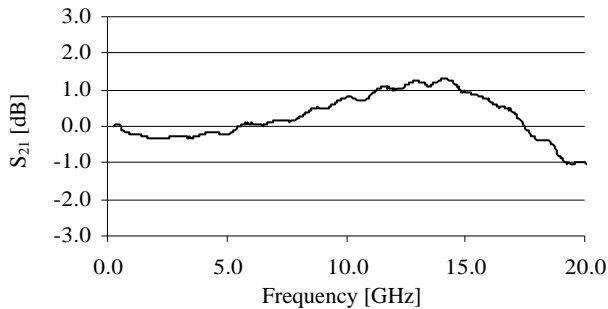
## Optical And Electrical Characteristics

$V_{\text{B}} = 5\text{V}$  unless otherwise specified.

Parameter	Sym.	Condition	Min	Typ.	Max	Unit
Wavelength Range	$\lambda$		1280		1620	nm
Optical Input Power	$P_{\text{OPT}}$				6	mW
Responsivity	R	$\lambda = 1545\text{nm}$	0.80	0.95		A/W
Dark Current	$I_{\text{D}}$	No optical input power			100	nA
3dB Bandwidth	BW		20			GHz
Electrical Return Loss	$S_{22}$	DC-18GHz			-10	dB
		18 – 20GHz			-8	dB
Flatness	$\Delta G$	DC – 20GHz	-3		2	dB
Optical Return Loss	ORL	DC – 20GHz		-35	-32	dB
Output Termination	$Z_{22}$	DC – 20GHz		50		$\Omega$
Operating Temperature			-40		85	$^{\circ}\text{C}$

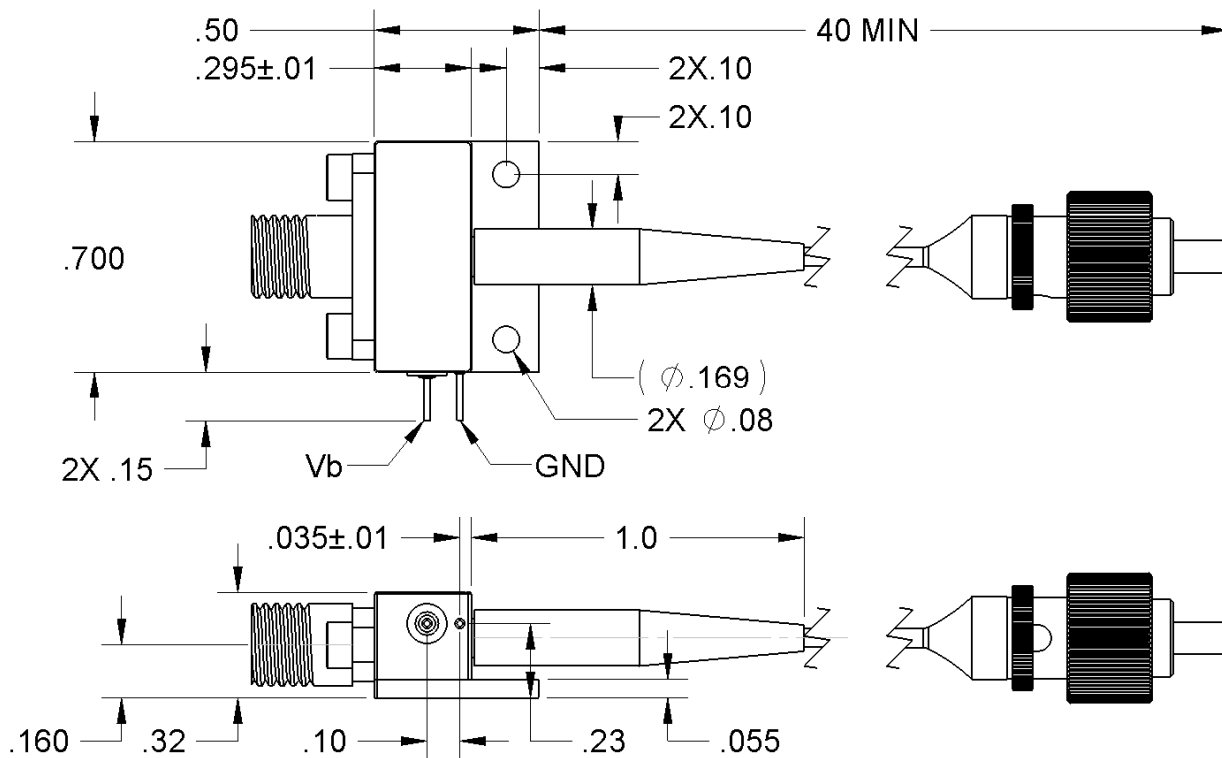
## Typical Operating Characteristics

$V_B=5V$ ,  $\lambda=1545nm$ ,  $P_{OPT}=1mW$



## Mechanical drawing

All units in inches



For pricing and delivery information, please contact EM4 inc. direct at +1 781 275 75 01, sales@em4inc.com or any of the representatives listed at www.em4inc.com.

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