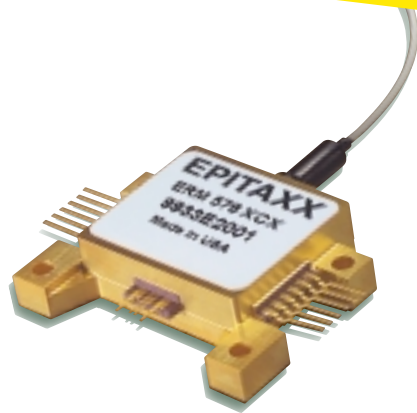


# Product Bulletin



## ERM 578XCX 10 Gb/s High Gain Avalanche Photodiode Optical Receiver Modules

### Preliminary Specifications

Conditions (unless noted):

Temperature = 25°C,  $\lambda = 1550 \text{ nm}$ ,  $R_L = 50\Omega$ ,  $V_{ee} = -5.2\text{V}$

All specifications without connector.

Parameter	Measurement Conditions	Min	Typ	Max	Units
APD Breakdown Voltage, $V_b$	$I_d = 10 \mu\text{A}$	20		40	V
Bandwidth	APD gain $3 \leq M \leq 9$	7			GHz
Low Frequency Cut-off				85	KHz
Output Return Loss	130 kHz to 7.5 GHz		8		dB
Sensitivity	10 Gb/s PRBS = $2^{31} - 1$ NRZ BER = $10^{-12}$ M = 9			-22	dBm
Overload	10 Gb/s PRBS = $2^{31} - 1$ NRZ BER = $10^{-12}$ M = 3	-6	-3		dBm
Optical Return Loss				-27	dB
Transimpedance		550			$\Omega$
Thermistor	T = 25°C	9.9		10.1	k $\Omega$
Power Dissipation		0.65	0.8		W

1. RF outputs are DC coupled for model 578XCX.

ERM 5x8 series are high speed receivers designed to meet the requirements of long and short haul 10Gb/s backbone and metro network architecture. The devices offer high bandwidth and low return loss, and are well suited for operations with optical amplifiers.

### Key Features

Electro-optical

- Low dark current, low capacitance, InGaAs avalanche photodiode
- Low noise transimpedance amplifier
- High bandwidth

Packaging

- Coplanar package with single mode 900  $\mu\text{m}$  jacketed fiber pigtail
- Available with LC, SC or FC connectors

### Applications

- Long haul receivers for SONET/SDH ADMs
- DWDM receivers
- Optical Cross-connects

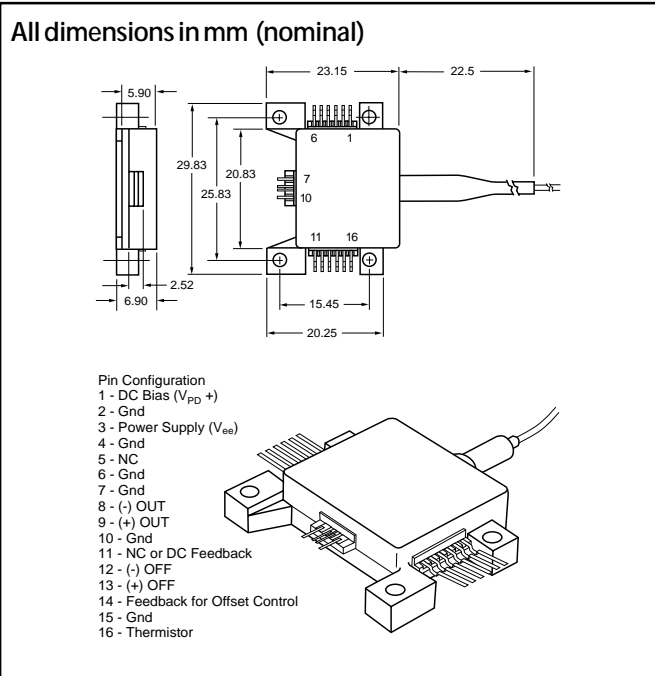
**DC/Electrical Characteristics**

Parameter	Min	Typ	Max	Units
Supply Voltage	-5.46	-5.2	-4.94	V
PD Supply Voltage	20		40	V

**Maximum Ratings**

Parameter	Min	Typ	Max	Units
Supply Voltage $V_{ee}$	-5.5		0	V
Supply Voltage $V_{PD}$	20		40	V
PD Forward Supply Current			2	mA
PD Reverse Supply Current			2	mA
Maximum Optical Input Power			0	dBm
Operating Case Temperature	0		70	°C
Storage Temperature	-40		85	°C

**Mechanical Dimensions - ERM 578XCX**



**Ordering Information**

Product Model	Description
ERM 578XCX	10 Gb/s APD, Coplanar Package
ERM 578XCX LC/SPC	900 $\mu$ m buffer with LC/SPC connector
ERM 578XCX SC/SPC	900 $\mu$ m buffer with SC/SPC connector
ERM 578XCX FC/SPC	900 $\mu$ m buffer with FC/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.

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

Fiber feed through tube temperature should not exceed 120 °C.

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

