



155Mb/s InGaAs 5pin LC ROSA (High Optical Return Loss)

PTCM967-416

Features

- *Data rates up to 155Mb/s*
- *High performance InGaAs PIN Photodiode with Transimpedance Amplifier (TIA)*
- *Operating wavelength range: 1250~1620nm*
- *Single +3.3V power supply*
- *Wide dynamic range*
- *LC package (5-pin)*
- *Case is isolated with GND pinRoHS compliant*

Application

- *155Mb/s SFF/SFP Transceiver Module*
- *Fiber Channel Transceiver Module*
- *Other applications*

Description

The PTCM967-416 is a high-performance 1310nm InGaAs photodiode and a transimpedance amplifier packaged for high-speed data communication.

The device inside packaged with InGaAs PIN and TIA. The PIN transduces incident light into optical current with high efficiency. The TIA converts the current signal into a voltage signal with a very low input noise current contribution. The TIA also can decrease the light to voltage conversion factor when the average incident optical power is relatively high. The golden wire's pull force is strictly tested to guarantee its fastness. The PTCM967-416's TO cap is sealed under the condition of dew point and airproof control. So it can provide the best work environment.

The miniaturized size LC adaptor with sleeve barrel and 5-pin LC package provide industry standard connection and the best inserting and drawing. Laser welding craftwork flow guarantee the device's stability. WTD reliability criterion strictly control each step of the device craftwork in order to ensure high reliability and the best performance.

It is designed for 155Mb/s SFF/SFP transceiver module. It is also available with a connector receptacle or as a single mode fiber pigtail. The device is applicable for 1310nm/1550nm optical fiber communication systems for 155Mb/s, typically showing high sensitivity of -38dBm.

Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	T_s	°C	-40	85
Relative Humidity	RH	%	5	85
Power Supply Voltage	V_{cc}	V	-0.4	4.5
Photodiode Bias Voltage	V_{pd}	V	-0.5	20
Input Optical Power	P_{in}	dBm	-	3
Lead Solder Temperature	-	°C	-	260
Lead Solder Duration	-	S	-	10

Recommended Operating Conditions

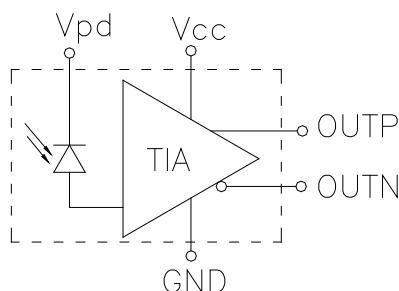
Parameter	Symbol	Unit	Min	Typ	Max
Case Operating Temperature Range	T_c	°C	-10	25	70
Power Supply Voltage	V_{cc}	V	2.97	3.3	3.63
Photodiode Bias Voltage	V_{pd}	V	2.97	3.3	3.63
Wavelength range	λ	nm	1250	1310	1620

Specifications

(tested under recommended operating conditions, unless otherwise noted)

Parameter	Symbol	Unit	Min	Typ	Max	Test condition
Electrical Characteristics						
Operating Current	I _{cc}	mA	-	22	32	No loads
Output Impedance	R _o	Ω	-	50	-	Single ended
-3dB Bandwidth	BW	MHz	110	140	-	
Differential Output Voltage	V _{out}	mV _{p-p}	-	-	800	
Trans-impedance	Z _t	KΩ	-	31	35	Single-ended, f=100KHz
Isolation Resistor between Case and GND pin	R _I	MΩ	10	-	-	
Optical Characteristics						
Responsivity	R	A/W	0.80	0.85	-	1310nm
Sensitivity	S	dBm	-	-38	-37	NRZ, ER=10dB, 155Mb/s,
Overload	P _{In-max}	dBm	-3	-	-	PRBS 2 ²³ -1, BER=10 ⁻¹⁰
Optical Return Loss	ORL	dB	27	-	-	λ = 1310nm

Block diagram

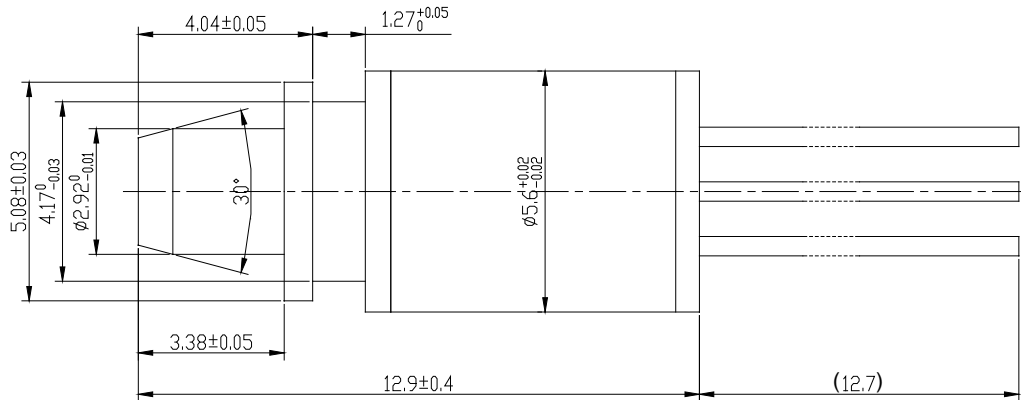


Pin Description

PTCM967-416

Pin	Description	Bottom View
1	Vcc	
2	OUT-	
3	OUT+	
4	Vpd	
5	GND	

Package Outline



Regulatory Compliance

Feature	Test method	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883E Method 3015.7	>500 V

Ordering Information

Part No.	Specifications					
	Package	Data-rate	Detector Sensitivity	Overload	Top	Others
PTCM967-416	5pin LC ROSA	155Mb/s	PIN+TIA < -37dBm	-3dBm	0~70 °C	+3.3V; ORL >27dB RoHS

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