OPTOELECTRONIC COMPONENTS

Pigtailed 10G Coaxial ROSA with InGaAs PIN & low noise pre-amplifier

Opterna

Opterna's NORTHLIGHT SERIES optoelectronic sub-components are renowned for its quality and have been proven through decades of optical module and semiconductor device design and manufacturing.

The receiver consists of a PIN photodiode detector mounted in a hermetic coaxial package, which also includes an integrated low noise trans-impedance amplifier. The receiver is offered with two different electrical interconnection options; 7-pin with coplanar output leads or XMD MSA compatible flexible printed circuit (FPC), and is equipped with a connectorized single-mode fiber pigtail. The PIN detector is biased externally. The electrical output is differential and DC-coupled.

The products are designed and manufactured to meet the requirements stated in applicable Telcordia standards.

Features & Advantage

- Small size coaxial package
- InGaAs PIN photodiode with 3.3V low noise pre-amplifier
- Differential data output
- Typical sensitivity: -20dBm
- Typical overload: +2dBm
- 12kVA differential gain
- 1260 to 1620nm wavelengths
- Singlemode fiber pigtail
- FPC electrical interconnect
- 7-pin with coplanar outputs or XMD MSA compatible FPC

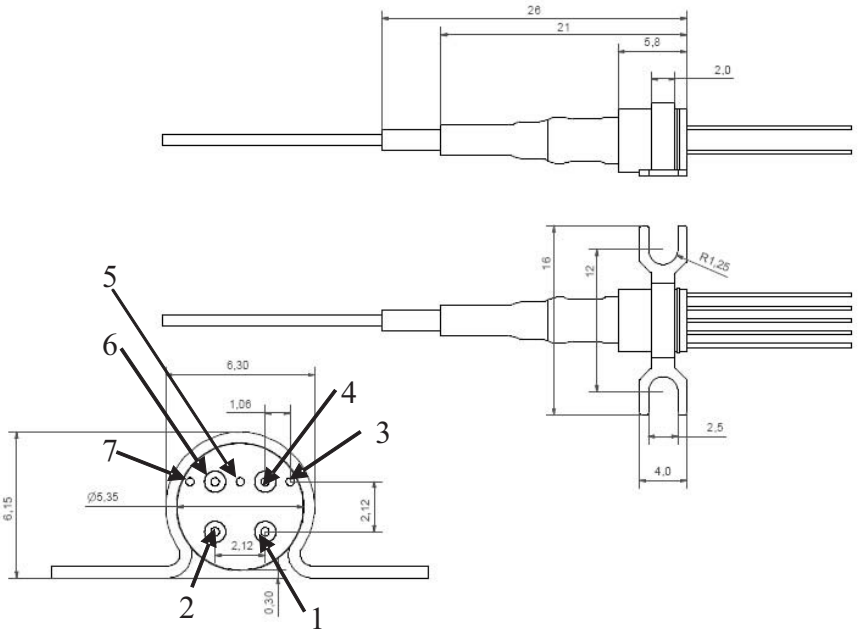
Applications

- Cost reduction of existing board designs and 300-pn transponders
- Short haul SDH STM-64
- Short and intermediate reach SONET OC-192
- 10GbE

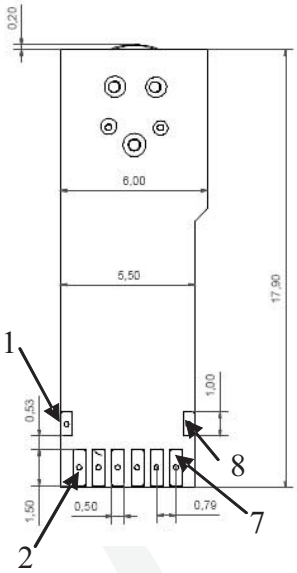
Pigtailed 10G Coaxial ROSA with InGaAs PIN & low noise p re-amplifier

Opterna®
your reliable connection

Size & Dimensions



[7-pin configuration]



[XMD compatible FPC configuration]

All dimensions in mm

Specifications

MAXIMUM RATINGS

Parameter	Unit	Min	Max
Pre-amplifier power supply	V		4
Photodiode average current	mA		2
Storage temperature	C	-40	85
ESD, HBM	V		200

OPERATING CONDITIONS

Parameter	Unit	Min	Typ.	Max
Pre-amplifier power supply	V	3.15	3.3	3.45
Photodiode bias	V	3.15 *	5	12
Wavelength	nm	1260		1620
Case temperature	C	-5		80

OPTOELECTRONIC COMPONENTS

Pigtailed 10G Coaxial ROSA with InGaAs PIN & low noise pre-amplifier

Opterna®
your reliable connection

OPTICAL CHARACTERISTICS

At operating conditions:

Parameter	Conditions	Unit	Min	Typ.	Max
Responsivity		A/W		0.8	
Sensitivity	BER 10^{-12} *	dBm		-20	-17
Overload	BER 10^{-12} *	dBm	0	2	
Optical return loss		dB	27		

* 10Gbps NRZ, PRBS 2^{31}-1, ?=1.55um, ER~10dB

ELECTRICAL CHARACTERISTICS

At operating conditions:

Parameter	Conditions	Unit	Min	Typ	Max
Bandwidth, S_{21}	-3 dB	GHz	7	9	
Low frequency cut-off	-3 dB	kHz			50
AC trans-impedance	Single-ended	V/A	5200	6000	6800
Linearity	< 1dB compression	uApp		60	
Output swing	Single-ended	mVpp			350
Electrical reflection, S_{22}	Differential < 8 GHz	dB		-10	
Power dissipation		mW		100	

ELECTRICAL CONNECTIONS

The data outputs are differential and need to be externally AC-coupled.

7-pin configuration

Pad	Description
1	Pre-amplifier power supply
2	Photo diode bias
3	RF ground/Case ground
4	Data
5	RF ground/Case ground
6	Data_not
7	RF ground/ Case ground

XMD compatible FPC configuration

Pad	Description
1	Signal ground
2	Pre-amplifier power supply
3	Signal ground
4	Data
5	Data_not
6	Signal ground
7	Photo diode bias
8	Signal ground

HANDLING INFORMATION

- The product contains electrostatic sensitive components. Appropriate precaution must be taken when handling to avoid ESD damage.
- Product contains hazardous GaAs compounds and must be disposed of with care.

Pigtailed 10G Coaxial ROSA with InGaAs PIN & low noise pre-amplifier

Opterna®
your reliable connection

Ordering Information

Pigtailed 10G PIN ROSA for horizontal board mount

Part number	Description
PGR20409/B7HcR2	10G PIN ROSA with 7-pins and coplanar differential output
PGR20409/B5KcR2	10G PIN ROSA with XMD compatible flexible printed circuit (FPC)
Code	**Option**
c = 1	LC connector option
= 2	SC connector option
= 3	ST connector option