
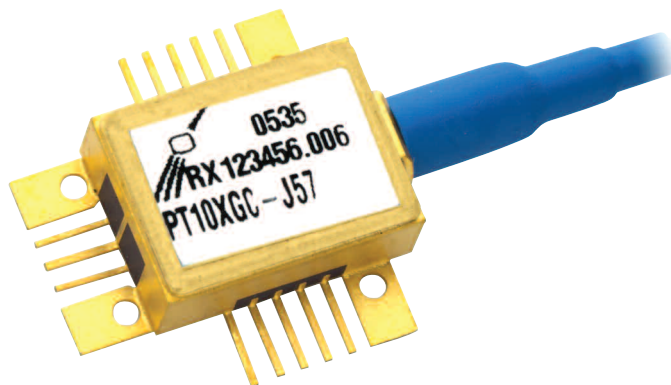


# 10Gb/s High Sensitivity Coplanar PIN Preamp Receiver PT10XGC

The module consists of a PIN photodetector, a low noise preamplifier, a connectorized single-mode fibre pigtail and a hermetic metal package with coplanar output. Optimized for use in 10 Gb/s long haul applications, either as a discrete device or within a transponder, using NRZ Modulation.

## Features:

- High sensitivity, -20.5dBm typical
- Surface mount MSA compliant
- Low capacitance high speed InGaAs PIN detector
- Hermetically sealed
- Designed to exceed the requirements of Bellcore GR468-CORE
- Single mode fibre tail
- Compatible with AT10GC APD Receiver
- Output stage limits at 400mVp-p differential eliminating the need for a post amplifier
- Low Power Consumption, only 235mW
- RoHS 5/6 compliant 



## Characteristics

TC = 25°C unless otherwise specified.

Parameter	Symbol	Min	Typ	Max	Unit
Optical sensitivity $2^{31-1}$ BER $<10^{-12}$ [4]	Sens		-20.5	-19	dBm
Optical overload $2^{31-1}$ BER $<10^{-12}$	Psat	+1			dBm
High frequency -3 dB corner [2]	f3 dB	8	9		GHz
Return loss S22 (400 KHz to 7 GHz)				-8	dB
PiN bias voltage	Vpd		5		V
Dark current	Id			10	nA
PIN responsivity [1]	R	0.7	0.8		A/W
Amplifier bias voltage	Vee		-5.2		V
Amplifier current consumption	lee		45		mA
Transimpedance gain [2] [3] [5]	TZG	1600	2200	3400	Ohms

### Notes

- [1] Optical wavelength between 1525nm – 1575nm.
- [2] Load impedance is 50Ω (AC coupled) with a return loss >20 dB, up to 20 GHz.
- [3] Excludes PIN responsivity.
- [4] Measured with 10 Gb/s NRZ PRBS data and no FEC.
- [5] Differential.

## Absolute Ratings

Parameter	Symbol	Min	Max	Unit
Amplifier bias voltage	Vcc	-6	0	V
Operating temperature [1]	Top	-40	85	°C
Storage temperature [2]	Tstg	-40	85	°C
Optical input [3]	po		10	dBm
Fibre bend radius		35		mm
Maximum PIN bias voltage	Vpd		+7.5	V

### Notes (Absolute Ratings):

- [1] The operating temperature is defined as the temperature of the module case.
- [2] The rating is referred to ambient temperature.
- [3] The optical level that causes no damage to the module. However, the electrical and optical performance specified in this document may not be guaranteed.

### Pin Out

Pin #	Symbol	Parameter	Pin #	Symbol	Parameter
1	GND	Case ground	10	Out_P	Positive output
2	Vpd	PIN bias voltage	11	GND	Case ground
3	NC	No connection	12	GND	Case ground
4	Vee	Amplifier Bias	13	FBIN	No connection
5	NC	No connection	14	NC	No connection
6	GND	Case ground	15	NC	No connection
7	GND	Case ground	16	NC	No connection
8	Out_N	Negative output	17	GND	Case ground
9	GND	Case ground			

### Circuit Schematic

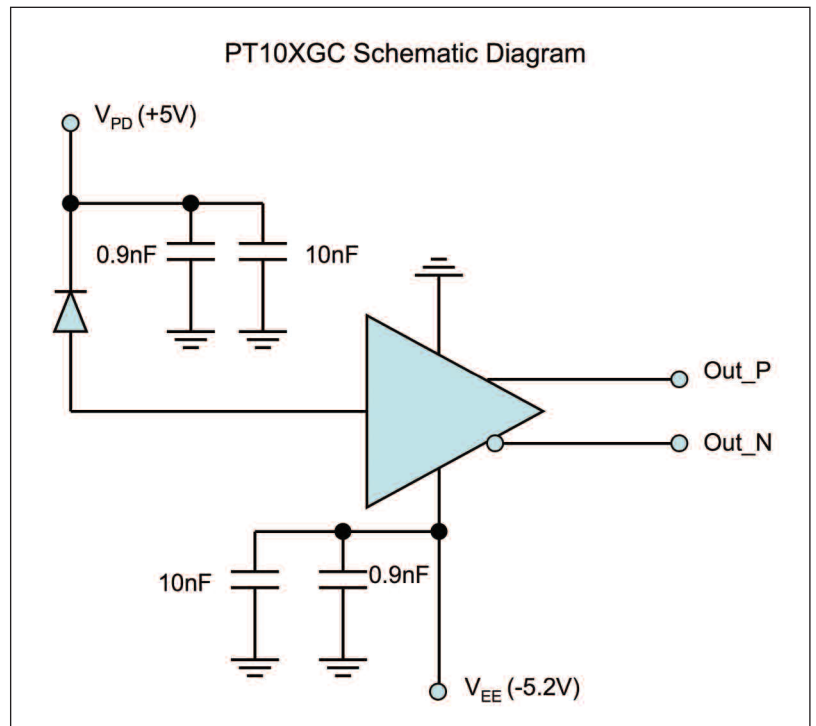


Figure 1: Schematic Diagram

### Typical Performance Characteristics

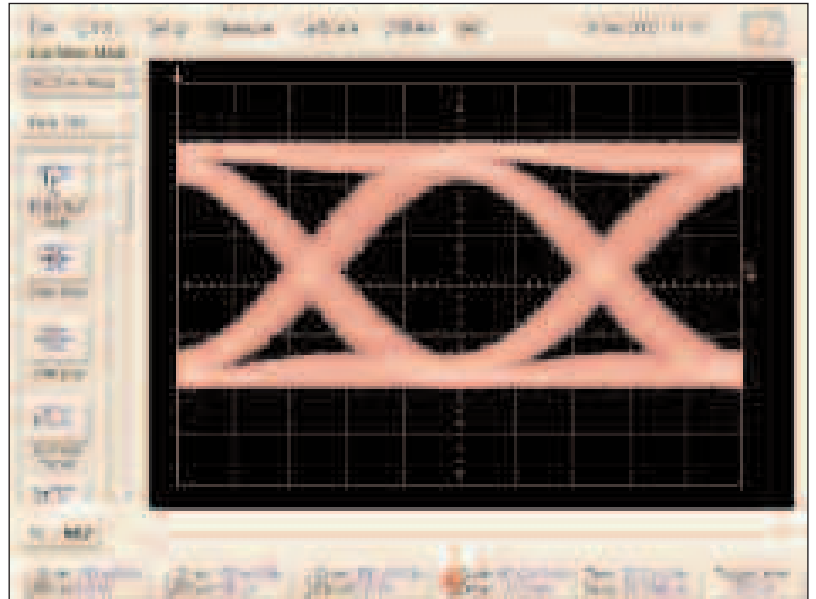


Figure 2: Typical eye diagram measured at 10 Gb/s with NRZ data

### Outline Drawing

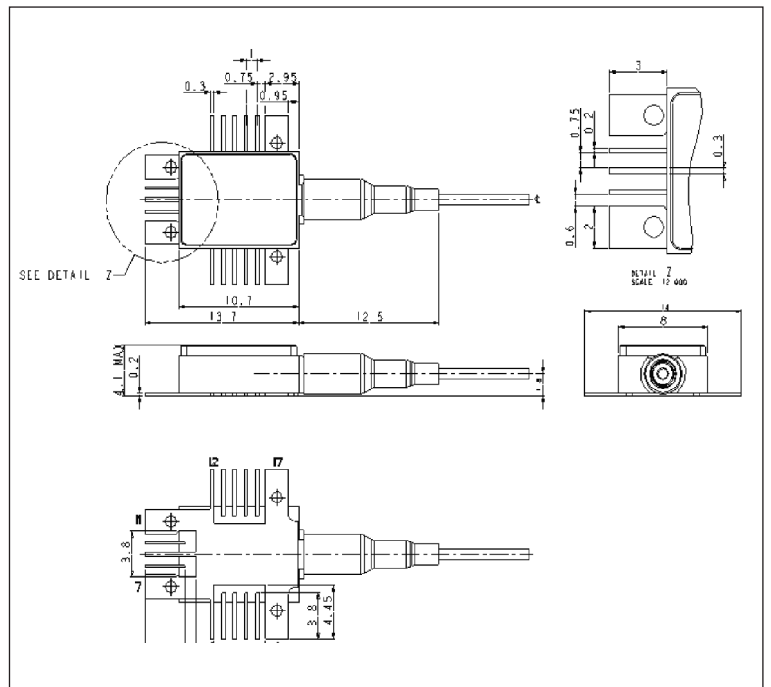


Figure 3: Outline Diagram

## RoHS Compliance



Bookham is fully committed to environment protection and sustainable development and has set in place a comprehensive program for removing polluting and hazardous substances from all of its products. The relevant evidence of RoHS compliance is held as part of our controlled documentation for each of our compliant products. RoHS compliance parts are available to order, please refer to the ordering information section for further details.

### Ordering Information

PT10XGC - (Connector)  
 J = SC/PC  
 J57 = LC

e.g. PT10XGC-J is a PT10XGC with an SC/PC connector.

Other options available on request

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