



CL-CR-10

Integrated Coherent Receiver for 10 GHz Optical Applications

Key Features

- Broadband O-E conversion
- High common mode rejection ratio
- Small footprint package
- RF output: differential with 50 Ω SMA connectors

Applications

- Coherent Optical Systems
- Optical Communications
- Microwave Photonics
- Test and Measurements Analyzers
- Optical Sensing and Spectroscopy

Description

The CL-CR-10 is a versatile demodulator/ receiver applicable to a wide range of coherent optical systems: such as laser communication and optical sensing. The coherent receiver is an integrated packaged device with a robust LiNbO₃-based optical 90° hybrid interfaced to two sets of high-speed balanced photoreceivers, eliminating the need for interconnecting fibers. In the coherent balanced detection mode the CL-CR-10 effectively eliminates the DC component and laser relative intensity noise while efficiently utilizing all of the optical signal and local laser power.

The package includes two FC/PC connectorized PM optical fibers for launching optical signals into the coherent receiver. The O-E converted signals are available through four SMA RF connectors on the package.

Specifications

Parameter	Min.	Typ.	Max.	Units
Wavelength Range	1530	-	1570	nm
Input optical power per channel			3	dBm
Optical Return Loss		-15		dB
Coupler Bias Voltage (per coupler)	2	10	15	V
Phase Shifter Vπ	12	16	18	V
O/E Bandwidth		7.5		GHz
Low Frequency Cutoff		30		kHz
Ripple (1 to 7 GHz)		+/- 1		dB
Conversion Gain		550		V/W
Output Voltage Swing (Single ended)		500		mVpp
Noise per Output Channel (Equivalent Current Density)		10		pA/√Hz

Preliminary



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 Preliminary Data Sheet – January 2007

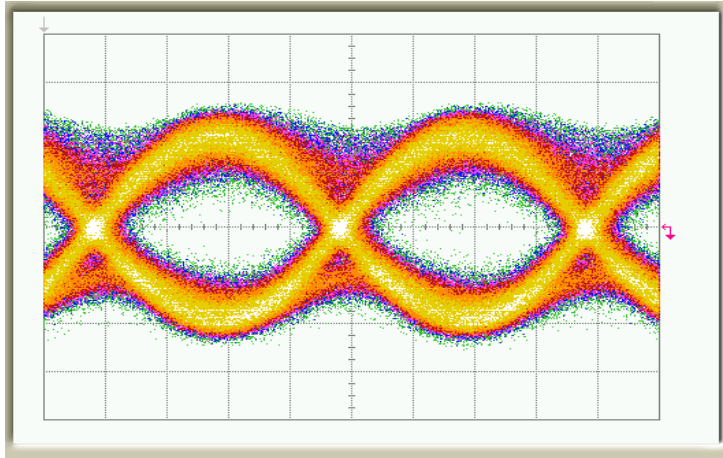
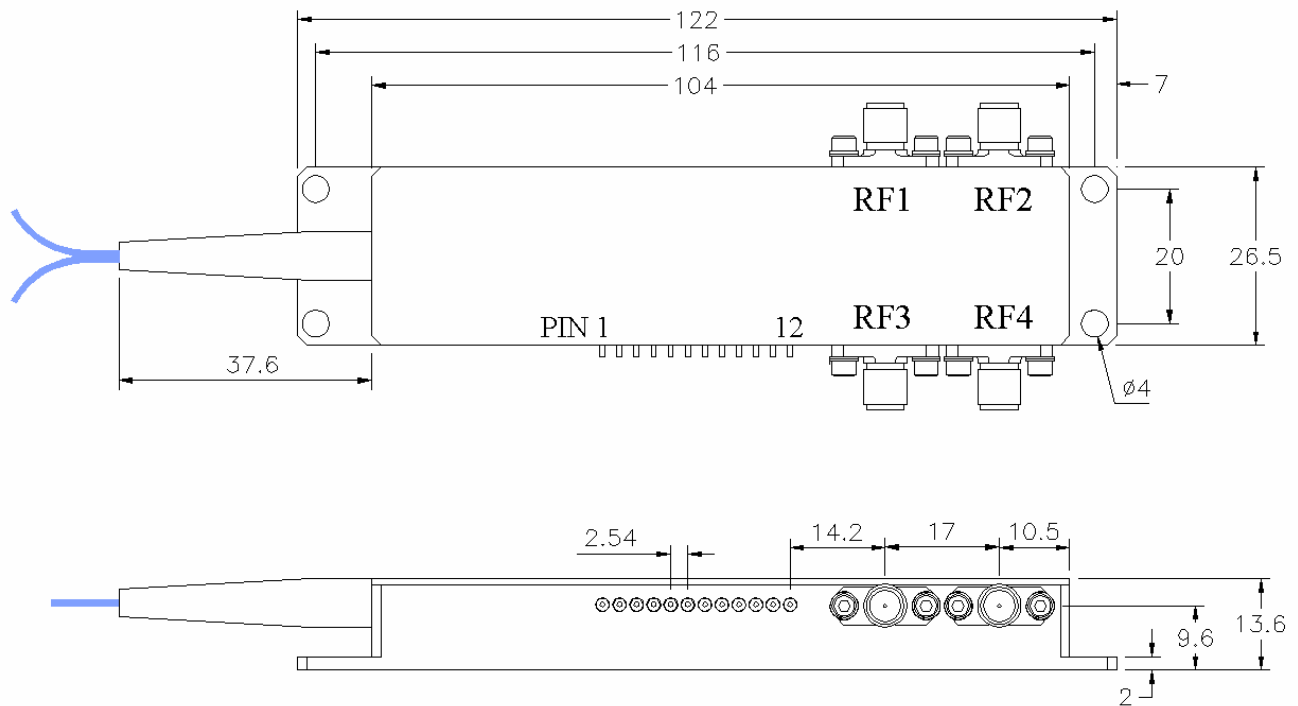


Figure 1. Typical eye diagram of detected 12.5 Gsymbols/s RZ-DQPSK optical signal using CL-CR-10. Horizontal scale: 20 ps/div.

Package Dimensions



(all units in mm)



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