

2.5 Gb/s Bias-Ready Modulator Butterfly Package



Key Features

- Designed to work with bias control circuits
- Small-outline package
- 1530 to 1565 nm operation; L-band versions available
- Low drive voltage; compatible with commercial drivers
- Low chirp for maximum transmission distance (>1000 km)

Applications

- Medium- and long-haul transmission
- DWDM and TDM transmission

Compliance

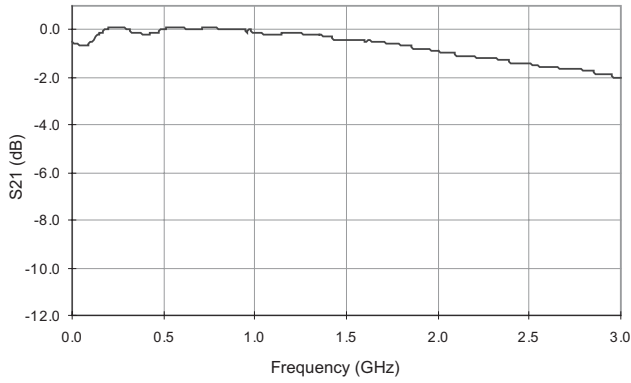
- Telcordia 468

The 2.5 Gb/s bias-ready modulator is a digital device in which the bias point of the interferometer is set using an applied voltage, typically with a control loop, to operate at the half-intensity point (quadrature). This design uses our x-cut technology, which has been field-proven and provides the best stability in the bias point over life. The device provides superior signal quality across a wide range of wavelengths in the C and L bands and can be used to modulate tunable lasers. The modulator is designed for medium- and long-haul transmission in dense wavelength division multiplexing (DWDM) and time division multiplexing (TDM) systems.

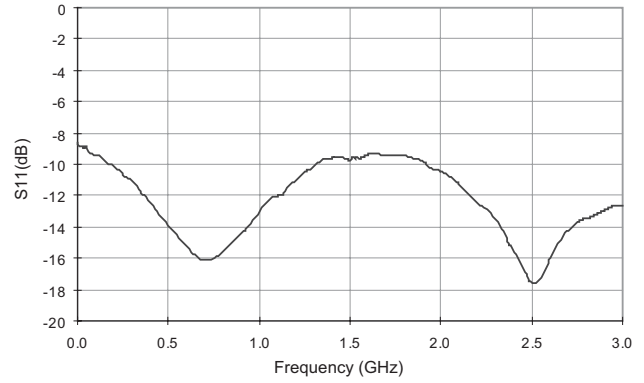
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Typical Performance Characteristics

Typical Frequency Response Curve, S21

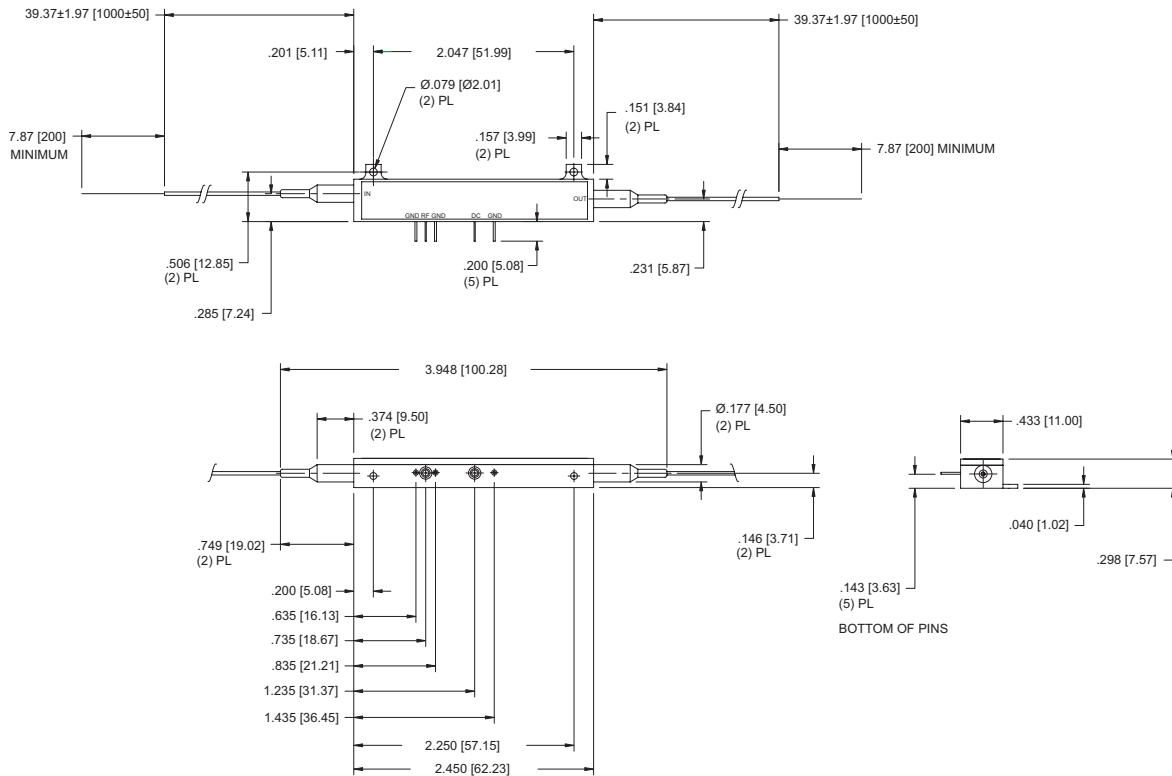


Typical Return Loss Curve, S11



Dimensions Diagram

(Specifications in inches [mm] unless otherwise noted.)



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Specifications

Parameter	Specification
General	
Material	Lithium niobate
Crystal orientation	x-cut, y-propagating
Waveguide process	Titanium-indiffused
Optical	
Operating wavelength	1530 to 1565 nm
Insertion loss, no connectors ²	≤ 4.5 dB
On/off extinction ratio, low frequency	≥ 20 dB
Optical return loss	≥ 50 dB
Electrical	
RF port	
Drive voltage, V peak-to-peak, at 2.5 Gb/s PRBS ³	3.9 V typical
$V\pi$ at 100 kHz ³	≤ 4.5 V
S21 electro-optic bandwidth (-3 dBe) ^{1,3}	≥ 2.5 GHz
S11 return loss, 0.03 to 2.5 GHz ³	≤ -8 dB
RF input power	≤ 24 dBm
Chirp, alpha parameter	$ \alpha < 0.2$
Bias port	
$V\pi$ at DC	≤ 8.5 V
Mechanical	
Input	Fujikura SM-15-P-8/125-UV/UV-400
Output ⁴	SMF-28
RF connection	Pins
Bias connection	Pins
Environmental	
Qualification reference	Telcordia 468
Operating temperature	0 to 65 °C
Storage temperature	-40 to 85 °C

1. Relative to 30 MHz.

2. Insertion loss is measured at the maximum of the modulator's transfer function and does not include the 3 dB loss incurred when operating at quadrature.

3. Variances with temperature and wavelength included.

4. PM output fiber also available.

Ordering Information

For more information on this or other products and their availability, please contact your local JDSU account manager or JDSU directly at 1-800-498-JDSU (5378) in North America and +800-5378-JDSU worldwide or via e-mail at customer.service@jdsu.com.

Sample: 21044597

Product Code	Description
21044597	2.5 Gb/s modulator with FC/SPC optical connectors
21044598	2.5 Gb/s modulator with no optical connectors

Note: Other connectors available upon special request. Call JDSU for more information.

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