

Product Bulletin



10 Gb/s Amplitude Modulator

The JDS Uniphase 10 Gb/s amplitude modulator is designed for use in medium to long-haul time division multiplexing (TDM) or dense wavelength division multiplexing (DWDM) transmission systems.

The 10 Gb/s amplitude modulator features extended bandwidth to support increased forward error correction (FEC) equipped system transmission rates. It operates throughout the entire C and L bands, making it ideal for use with tunable lasers.

The modulator operates in conjunction with bias control circuits. Extensive JDS Uniphase applications experience is available, should you require design assistance.

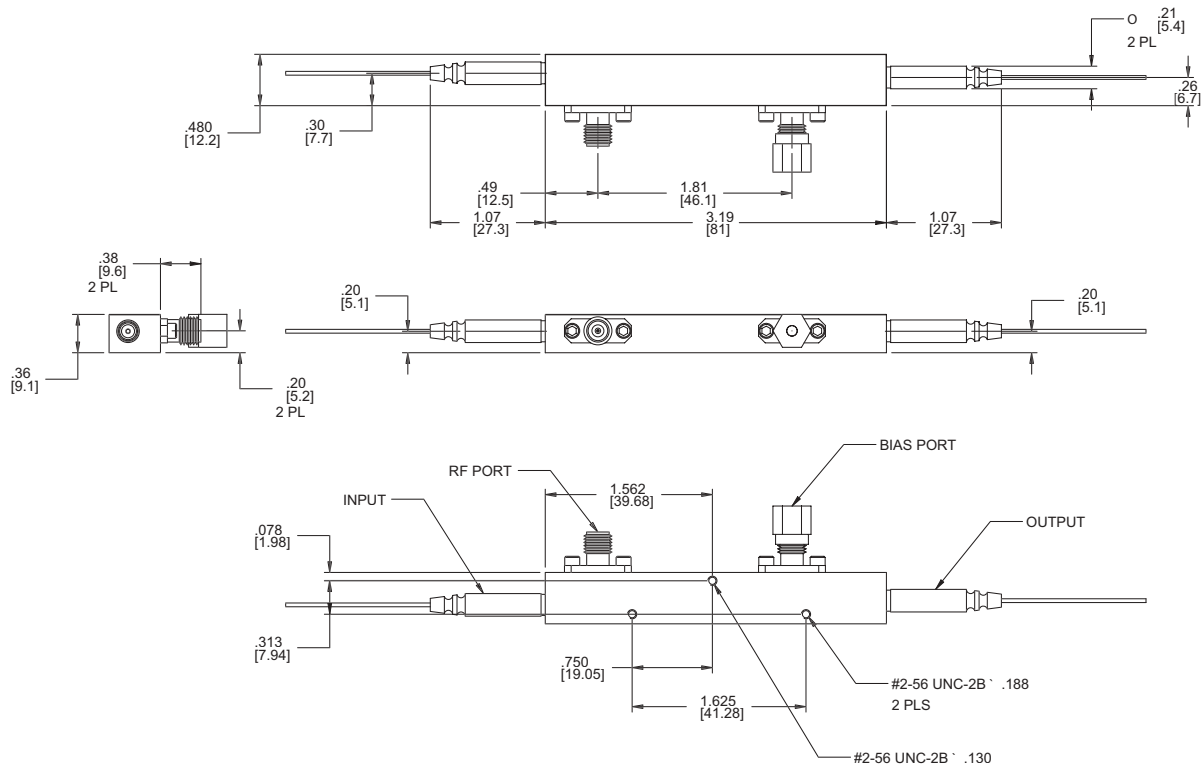
Key Features

- Low drive voltage, compatible with commercial drivers
- Low insertion loss provides maximum transmission power
- Full C- and L-band coverage
- Excellent stability in a biased circuit
- Zero chirp

Applications

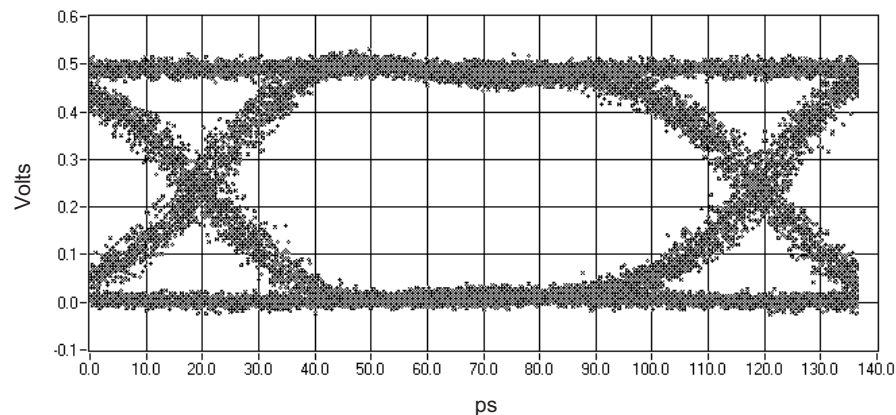
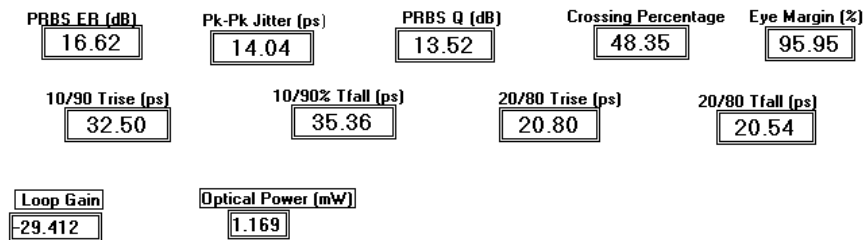
- TDM and WDM 10 Gb/s transmission systems
- Systems using tunable laser technology

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



Typical Eye Diagram

JDS Uniphase HHDM 10.67 Gbps Optical Eye using JDS H302 Driver, HP 70843A Pattern Generator with 0.5Vpp input signal. Measured with a Tektronix CSA 803C and SD24 Sampling head with Discovery DSC 30S detector.

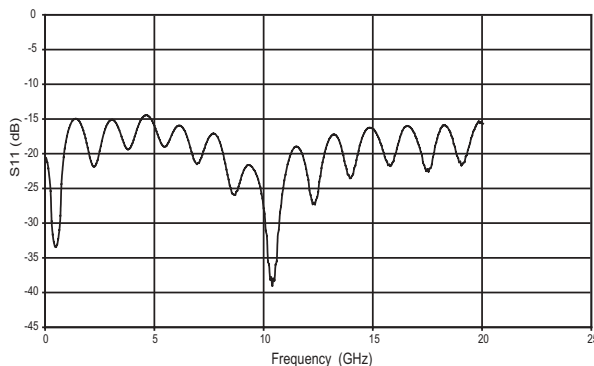


Specifications

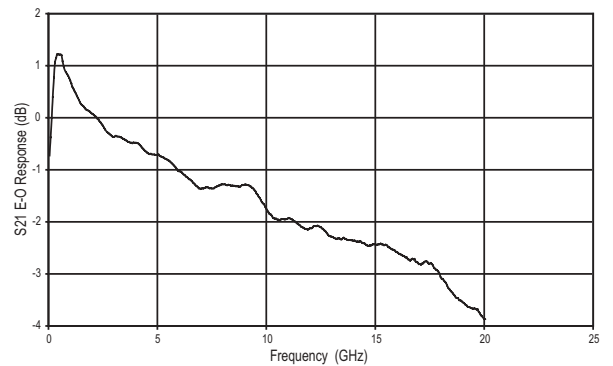
Parameter		Specification
Optical		
Operating wavelength		1530 to 1610 nm
Insertion loss, no connectors ¹	Typical	4.5 dB
On/off extinction ratio at DC	Typical	25 dB
PRBS extinction ratio		> 15 dB
Optical return loss, no connectors	Minimum	45 dB
Input optical power	Maximum	50 mW
Electrical		
RF port		
PRBS electrical drive voltage (V _{p-p})	Typical	5.6 V
S21 bandwidth ²	Typical	15 GHz
S11 return loss ³	Maximum	-10 dB
RF input power	Maximum	24 dBm
Vπ at 1 GHz	Typical	5.5 V
Impedance	Typical	42 Ω
Bias port		
Start-up voltage	Maximum	2 V
Resistance		>100 k Ω
Mechanical		
Fibers		
PM input		Fujikura SM-15-P-8/125-UV/UV-400, 1 meter minimum
SM output		Corning SMF-28, 1 meter minimum
Electrical connectors (package)		Wiltron K for RF port; SMA for Bias port
Cabling		900 μm Hytrel tubing
General		
Material		Lithium niobate
Crystal orientation		X-cut, y-propagating
Waveguide process		Titanium indiffusion
Environmental		
Operating temperature		0 to 70 °C
Storage temperature		-40 to 85 °C

1. Insertion loss is measured at the maximum of the modulator's transfer function and does not include the 3 dB loss incurred by operating at quadrature.
2. -3.0 dB on a 2-15 GHz fit
3. 130 MHz to 14 GHz

Typical Return Loss Curve, S11



Typical Frequency Response, S21



Ordering Information

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

Sample: 21023816

Product Code	Description
21023816	PM input, SM output, FC/PC optical connectors

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Wiltron K is a registered trademark of Anritsu Corporation.



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