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查询"21049396"供应商

X5 and Z5 Modulator



Key Features

- Small size: 65 x 12 x 5 mm
- Surface mountable with gull wing DC pins
- GPO RF connector
- Integrated PD (photodiode) for bias and power control
- 200 kpsi input fiber for tight bend radii
- High bandwidth FEC and super FEC compatible
- Zero chirp and chirped modulators in a common package
- Operation over C-band and L-band
- Low drive voltage
- Power penalty without FEC:
  - < 1 dB (±1200 ps/nm) for X5
  - < 2 dB (1600 ps/nm) for Z5

Applications

- MSA transponders using tunable or fixed wavelength sources
- TDM and WDM Metro systems with up to 120 km reach
- Long Haul (LH) and Ultra Long Haul (ULH) systems (both terrestrial and submarine)
- Alternate modulation schemes including electrical RZ

Compliance

- Telcordia 468

The JDSU Agile Optical Components family includes modulators, switches, attenuators and tunable filters. These products provide the basis for spectrally efficient DWDM transmission utilizing dispersion tolerant modulation, channel monitoring, wavelength switching, remote power control and dynamic channel selection. They support a wide range of flexible functionalities at lower operational expenses for the Agile Optical Network. In addition, we have a complete line of tunable lasers assemblies and sub-assemblies in our Agile Transmission Module family.

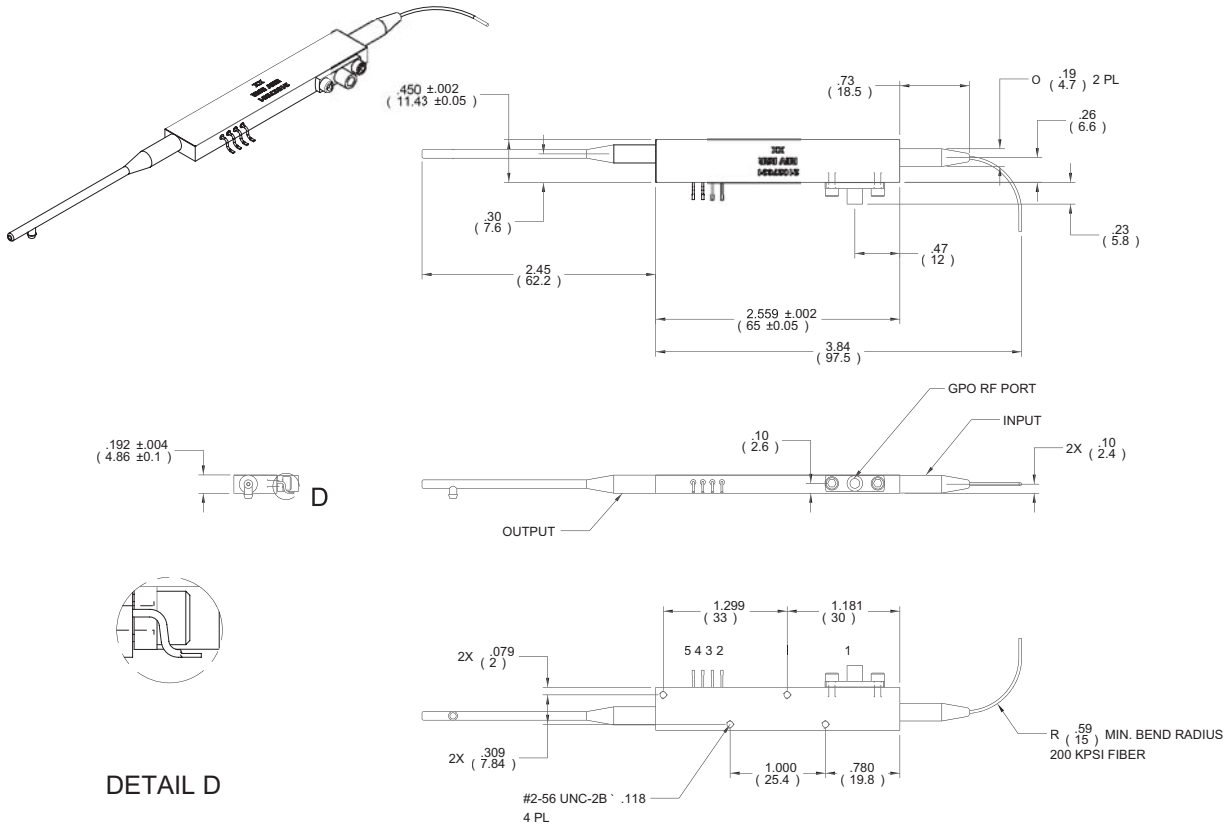
JDSU X5 and Z5 single drive 10 Gb/s modulators with integrated photodiode are ideally suited for use in long reach (LR)/ very long reach (VR) Metro applications as well as in long haul (LH) transmission. The X5 is a fixed zero-chirp solution and the Z5 is a fixed ±0.7 chirp solution, both packaged identically. The small package form factor makes the X5/Z5 compatible with the 300 pin MSA transponder footprint.

The X5 and Z5 modulators operate over the C and L band. Their low drive voltages make them compatible with low power dissipating driver solutions such as GaAs driver technology. In addition to providing bias control feedback, the new enhanced photodiode is capable of power monitoring for control of the transmitter's modulated output power.

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Dimensions Diagram

(Specifications in mm unless otherwise noted.)

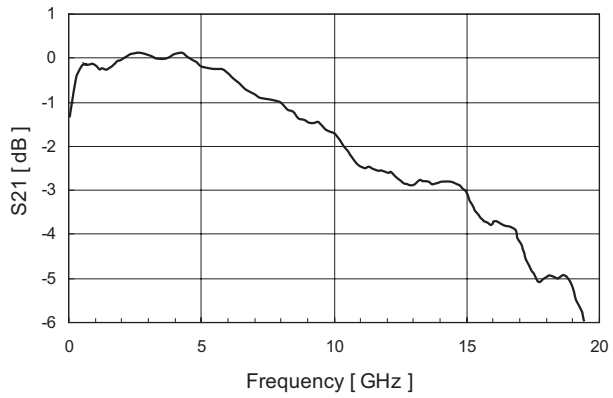


Pinout

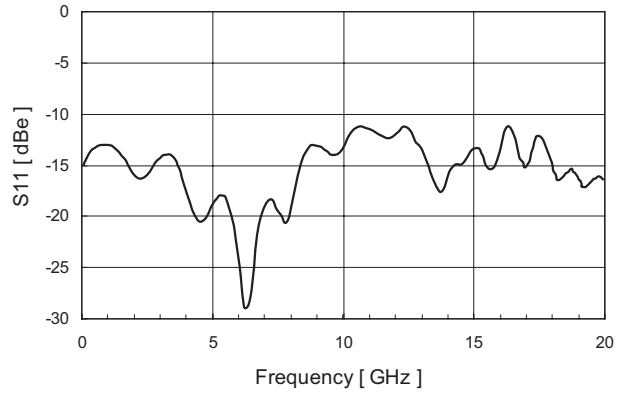
Pin	Description
1	RF input
2	GND
3	DC bias
4	PD anode
5	PD cathode

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S21

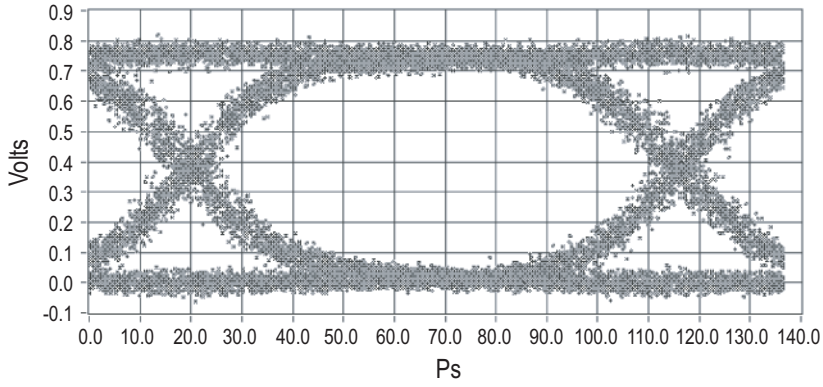


S11



Eye Diagram

(Key feaures: ER >15 dB, $jitter_{p-p}$ <13 ps, measured with optimized driver set-up)



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Specifications

Parameter		X5	Z5
Chirp (alpha parameter)	Typical	0	±0.7
Optical insertion loss (BOL)[1]	Typical	4.5 dB	
Optical return loss (input and output ports)	Typical	40 dB	
Optical on/off extinction ratio			
Low frequency	Typical	27 dB	
PRBS[2]	Typical	15 dB	
E/O bandwidth (-3 dB electrical, linear fit 2 to 15 GHz)	Typical	12 GHz	
S11 (130 MHz to 10 GHz)		10 dB	
Drive voltage (RF port)[3]	Typical	5.5 V	4.5 V
Vπ bias port at 40 kHz	Typical	4 V	2.5 V
Bias voltage range[4]	Typical	-15 to 15 V	
RF port resistance (DC)	Typical	40 Ω	
Bias port resistance (DC)	Typical	1 MΩ	
Photodetector extinction ratio[5]	Typical	6 dB	
Photodetector O/E bandwidth	Typical	100 kHz	
Photodetector responsivity (referenced to output power)	Typical	20 mA/W	
Photodetector phase tracking error[6]	Typical	-5 to 5°	
Photodetector dark current (at -5 V, room temperature)	Typical	5 nA	
$\Delta R/\Delta T$[7]	Typical	±0.2 dB	
$\Delta R/\Delta\lambda$[8]	Typical	±0.3 dB	

1. Measured at peak of DC bias transmission with no RF input and no optical connectors.
2. For PRBS signals of up to 2^{31}-1 and bit rates up to 12.5 Gb/s. Measurement is based on an optimized test set up.
3. Maximum driving voltage required to achieve 15 dB ER for 12.5 Gb/s 2^{31}-1 PRBS signal over the operating wavelength and temperature ranges.
4. Maximum voltage range required to maintain optimum bias point over life and temperature.
5. ER = 10*log(I_{max}/I_{min}): I_{max} = PD current with modulator biased to maximum output power, I_{min} = PD current with modulator biased to minimum output power.
6. Tracking error is the difference in phase between the modulator output power transfer function and the photodetector output current transfer function.
7. The change in responsivity with temperature can be improved from the values given by employing passive thermal compensation.
8. Over C or L band. This can be calibrated for a given laser frequency.

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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: 21049397

Product Code	Description
21049397	10 Gb/s X5, SC/UPC output connector
21049396	10 Gb/s Z5, SC/UPC output connector

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