

FEATURES

- Very Low Drive Voltage
- Standard “F”-type Footprint for 4” MSA
- C and L-Band Operation
- Enhanced E/O Bandwidth for up to 12.5 Gb/s Modulation Speed
- Low Insertion Loss
- High Extinction Ratio
- Integrated Monitor Photodiode
- Available with Fixed Chirp

APPLICATIONS

- External Intensity Modulation from 10 Gb/s to 12.5 Gb/s NRZ and Electrical RZ
- SDH/SONET-DWDM Systems
- Long Reach 10 Gb/s MSA Transponders

Avanex intensity modulators are based on the Mach-Zehnder Interferometer architecture. They are manufactured using the highly reliable Titanium indiffusion technology in x-cut, y-propagating Lithium Niobate substrates. This 10 Gb/s - 12.5 Gb/s Modulator is designed for high bit rate advanced Metro to Long Haul communication systems that require the superior performance of x-cut Lithium Niobate. Exceptionally low drive voltage enables low power consumption reducing the overall transmitter cost. A small footprint and low profile makes the modulator compatible with the 10 Gb/s MSA Transponder standard. A single Tx board design can accommodate either the zero-chirp or the fixed chirp modulator version. Suitable driver amplifiers are available through Avanex recommended partners.

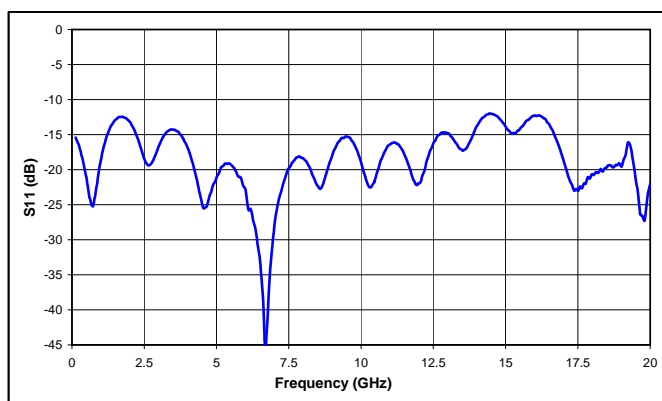


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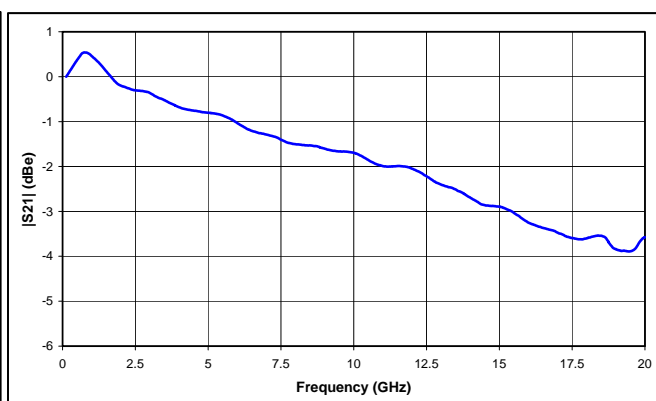
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PERFORMANCE CHARACTERISTICS

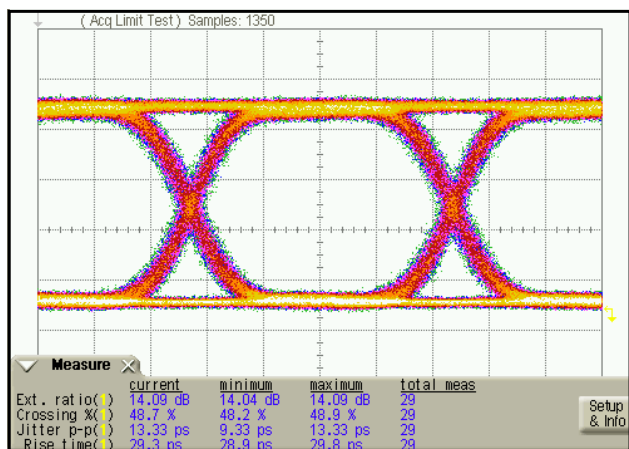
Electro Optical Response



Electrical Return Loss



Eye Diagram



ABSOLUTE MAXIMUM RATINGS

Parameter	Conditions	Min	Max	Unit
Maximum Input Power (Electrical)	RF-Port / AC Coupled		25	dBm
Maximum Input Power (Optical)	CW		100	mW
Maximum Operating Temperature Variation Rate			1	°C/min
Storage Temperature Range		-40	+85	°C
Operating Temperature Range		0	+70	°C

SPECIFICATIONS

Parameters		Units
Optical		
Operating Wavelength Range	C and L-Band	
Insertion Loss	3.5	dB
Extinction Ratio (DC)	≥ 20	dB
Chirp (Fixed chirp version)	See PowerBit™ F-10C Data Sheet	
Optical Return Loss (without connectors)	≥ 45	dB
Electrical		
S ₂₁ Electro Optical Bandwidth (-3 dB)	12.5	GHz
S ₁₁ Electrical Return Loss	≤ -10	dB
RF V _π Voltage (@ 1 kHz)	3.8	V
Bias V _π Voltage (@ 1 kHz)	5.0	V
PRBS Electrical Drive Voltage (V _{amp})	4	V
Dynamic Extinction Ratio	14	dB
Photodiode Responsivity (referred to output power)	≥ 10 ⁻³	A/W
Linearity	± 10%	

Where not specified, parameters are measured at 25°C.

CONNECTOR AND FIBER SPECIFICATIONS

RF Connector	GPO
Bias and PD Connector	Lead Pins
Input Fiber	Corning/Fujikura SM15P UV/UV400
Output Fiber	Corning SMF-28™ ¹

Note 1. Other output fibers available upon request.

ORDERING INFORMATION

0-Chirp: F10-0-13P-Px-yyzz-01

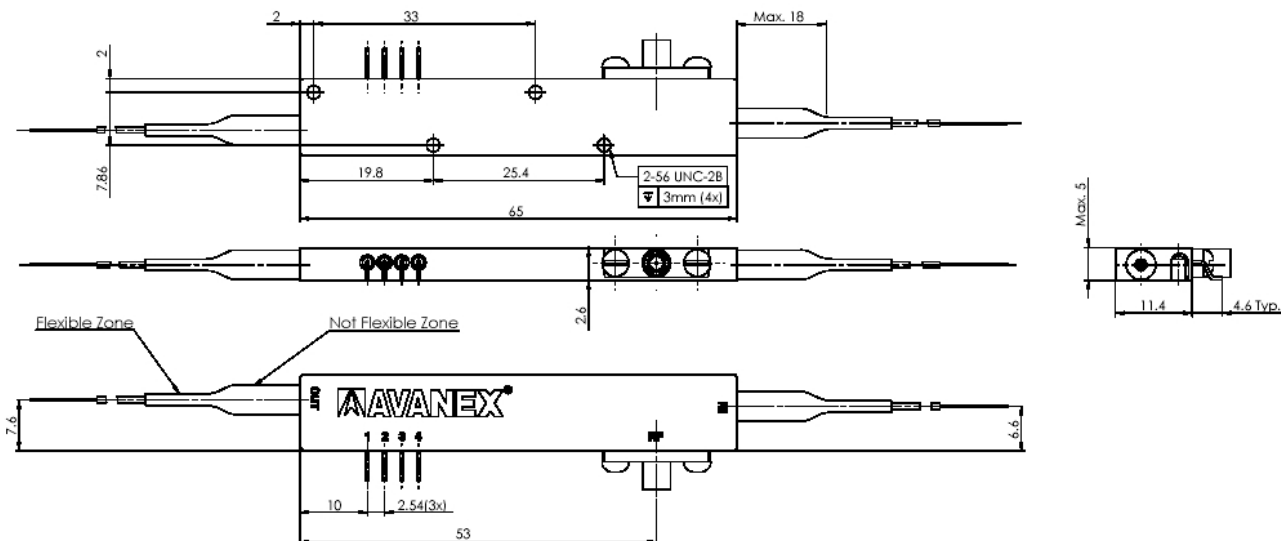
Pre-Chirped : See dedicated data sheets or ask for further information

yy; zz	Input; Output Connectors	NC = No Connectors FP = FC/PC FA = FC/APC SP = SC/PC SA = SC/APC	Other connector s available upon request; all connectors on PM fiber are polarization maintaining
x	Output Fiber	S = SMF, P= PMF	

PowerBit™ F-10

10 - 12.5 Gb/s Intensity Modulator with Low Drive Voltage **AVANEX®**

PACKAGE FOOTPRINT



PIN-OUT

Pin #	Sym	Description
1	PD	Photodiode Cathode
2	PD	Photodiode Anode
3	B	Bias
4	G	Ground
5	RF	RF Input (GPO Male)

Performance figures contained in this document must be specifically confirmed in writing by Avanex before they become applicable to any particular order or contract. Avanex reserves the right to make changes to the products or information contained herein without notice.

For additional information, contact your Avanex Account Manager or request information through our website at:

<http://www.avanex.com/contactus/requestinfo.aspx>



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