

## APE™ Microwave Analog Intensity Modulator



### Key Features

- Low drive voltage
- Direct current (DC) to 20 GHz operation
- Low optical insertion loss
- High optical power operation
- 1300 nm and 1550 nm models

### Applications

- Antenna remoting
- Short pulse experimentation

This high performance analog modulator is designed for use in microwave fiberoptic links that operate at frequencies to 20 GHz and beyond.

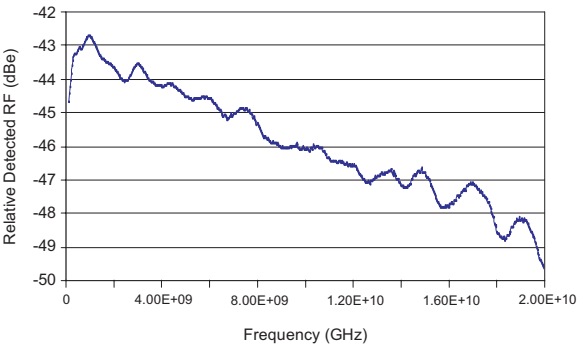
APE optical waveguides and velocity matched transmission line technology are combined in a modulator that offers high power, low loss optical characteristics, and high modulation efficiency.

APE microwave analog intensity modulators are available for operation at wavelengths of 1300 nm and 1550 nm.

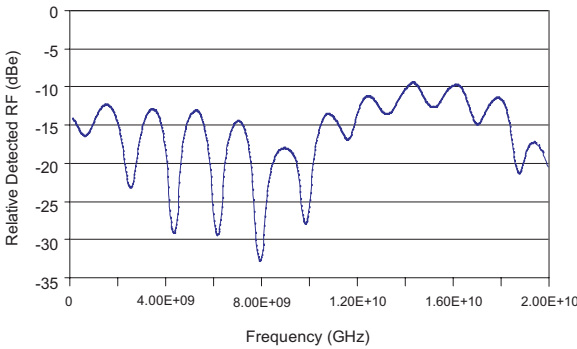
[查询"10020461"供应商](#)

2

Typical Frequency Response, S21



Typical Return Loss Curve, S11



S21 Roll-Off Relative to 130 MHz

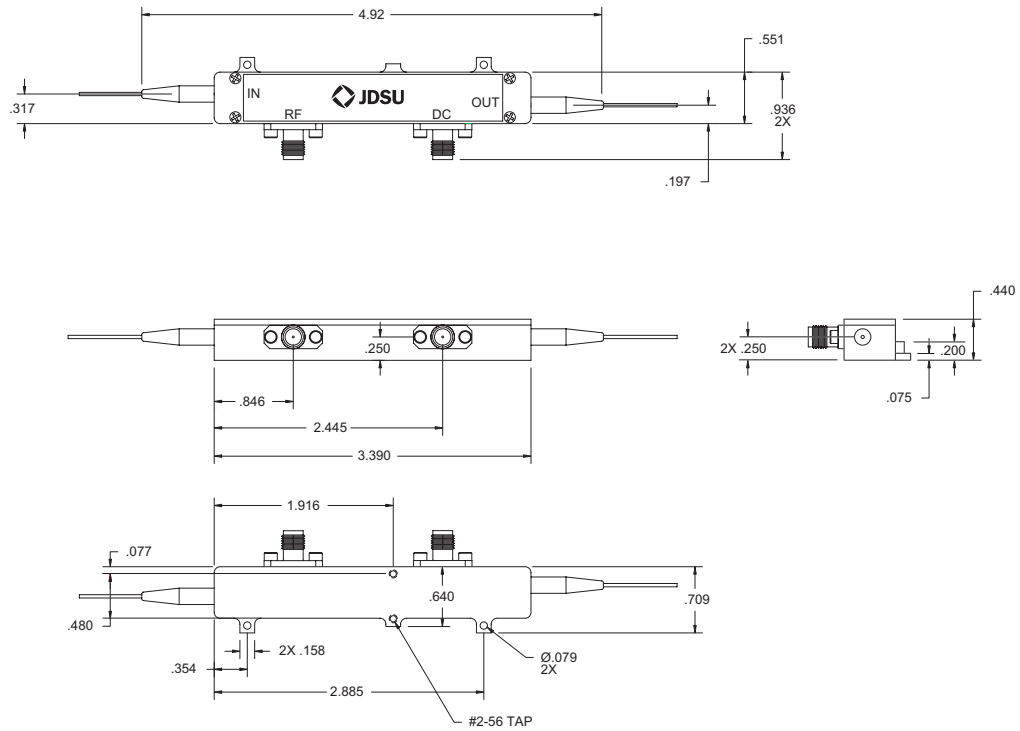
Frequency (GHz)	Maximum (dBe)
0.13	0
3	-1
5	-2
9	-3
12	-4.5
18	-6
20	-7

[查询"10020461"供应商](#)

3

**APE™ Microwave Analog Intensity Modulator Package Dimensions**

(Specifications in inches unless otherwise noted.)



[查询"10020461"供应商](#)

4

**Specifications**

Parameter		AM-130	AM-150
<b>Optical (note<sup>1</sup>)</b>			
Operating wavelength	Minimum	1320±10 nm	1550±10 nm
Insertion loss (note <sup>2</sup> )	Maximum		5.0 dB
On/off extinction ratio	Minimum		20 dB
Optical return loss	Maximum		-45 dB
<b>Electrical (note<sup>1</sup>)</b>			
RF port			
RF input power	Maximum		27 dBm
V <sub>π</sub> at 1 GHz (note <sup>3</sup> )	Maximum	5.5 V	6.0 V
Impedance	Typical		50 Ω
Bias port			
V <sub>π</sub> at DC	Maximum	10.5 V	12 V
Impedance			>100 kΩ
Deviation from quadrature (note <sup>4</sup> )			±1 V
<b>General</b>			
Material			Lithium niobate
Crystal orientation			X-cut, y-propagating
<b>Mechanical</b>			
Input optical power	Maximum		200 mW
Electrical connectors (package)			SMA connectors
Fibers			
1320 nm device, PM input		Fujikura SM 13-P-7/125-UV/UV-100	
1320 nm device, SM output		SMF-28	
1550 nm device, PM input		Fujikura SM 15-P-8/125-UV/UV-100	
1550 nm device, SM output		SMF-28	
<b>Environmental</b>			
Operating temperature			0 to 70 °C
Storage temperature			-40 to 85 °C

Note: Specifications are subject to change without notice. All device specifications are at room temperature and at beginning of life. These devices are offered as limited production models. Telcordia qualification of this device is not planned at this time.

1. All measurements made at 23 °C unless otherwise noted.
2. Optical loss is measured at the maximum of the modulator's transfer function and does not include the 3 dB loss incurred when operated at quadrature.
3.  $V_{\pi}$  is specified at the modulator.  $P_{\pi}$  is the power required to generate  $V_{\pi}/2$  at the connector.
4. Optimum distortion performance may require bias control.

**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](mailto:customer.service@jdsu.com).

**Sample: 10022054**

Product Code	Description
10022054	1310 nm, no optical connectors
10020461	1310 nm, FC/PC optical connectors
10020462	1550 nm, no optical connectors
10020465	1550 nm, FC/PC optical connectors

SMF-28, Fujikura SM 13-P-7/125-UV/UV-100, and Fujikura SM 15-P-8/125-UV/UV-100 are registered trademarks of Corning Incorporated.

All statements, technical information and recommendations related to the products herein are based upon information believed to be reliable or accurate. However, the accuracy or completeness thereof is not guaranteed, and no responsibility is assumed for any inaccuracies. The user assumes all risks and liability whatsoever in connection with the use of a product or its application. JDSU reserves the right to change at any time without notice the design, specifications, function, fit or form of its products described herein, including withdrawal at any time of a product offered for sale herein. JDSU makes no representations that the products herein are free from any intellectual property claims of others. Please contact JDSU for more information. JDSU and the JDSU logo are trademarks of JDS Uniphase Corporation. Other trademarks are the property of their respective holders. ©2006 JDS Uniphase Corporation. All rights reserved. 10131957 Rev.002 02/06 APEMICROANAMOD.DS.CC.AE