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

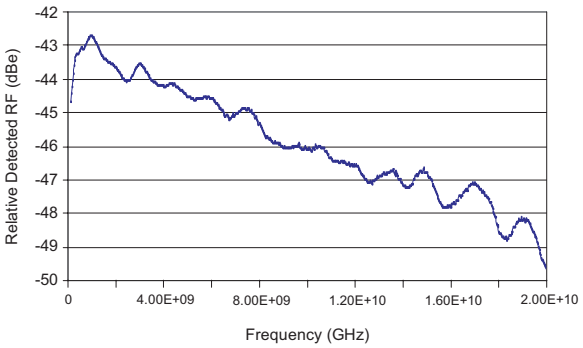
- Antenna remoting
- Short pulse experimentation

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

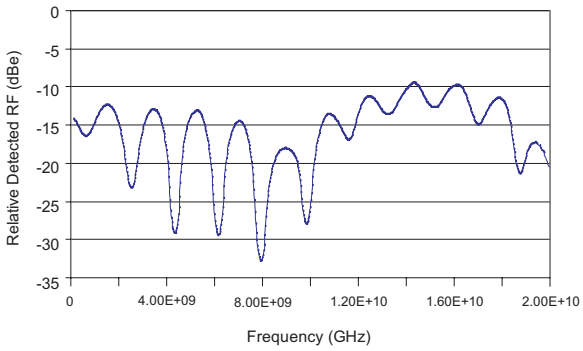
APE optical waveguides and velocity matched transmission line technology are combined in a modulator that offers high power, low loss optical characteristics, and high modulation efficiency.

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

Typical Frequency Response, S21



Typical Return Loss Curve, S11

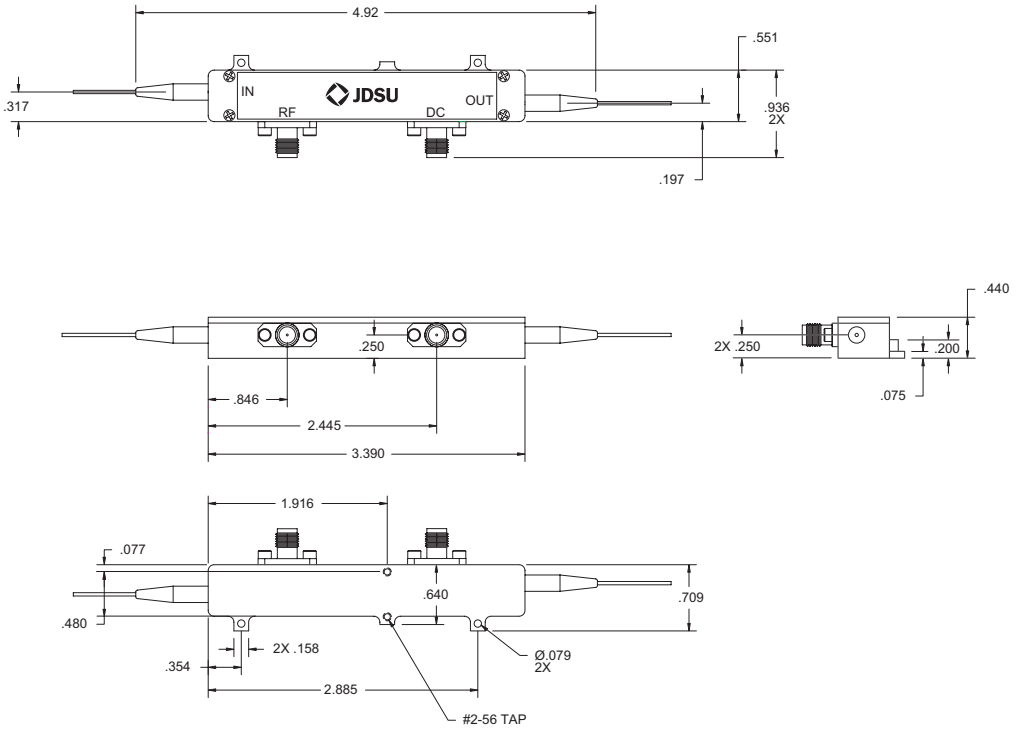


S21 Roll-Off Relative to 130 MHz

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

APE™ Microwave Analog Intensity Modulator Package Dimensions

(Specifications in inches unless otherwise noted.)



Specifications

Parameter		AM-130	AM-150
Optical (note[1])			
Operating wavelength	Minimum	1320±10 nm	1550±10 nm
Insertion loss (note[2])	Maximum	5.0 dB	
On/off extinction ratio	Minimum	20 dB	
Optical return loss	Maximum	-45 dB	
Electrical (note[1])			
RF port			
RF input power	Maximum	27 dBm	
Vπ at 1 GHz (note[3])	Maximum	5.5 V	6.0 V
Impedance	Typical	50 Ω	
Bias port			
Vπ at DC	Maximum	10.5 V	12 V
Impedance		>100 kΩ	
Deviation from quadrature (note[4])		±1 V	
General			
Material		Lithium niobate	
Crystal orientation		X-cut, y-propagating	
Mechanical			
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	
Environmental			
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. Vπ is specified at the modulator. Pπ is the power required to generate Vπ/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.

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