

# GaAs Digital Attenuator, 31 dB, 5 Bit DC - 2 GHz

## AT-357

V3.00

### Features

- Attenuation 1 dB Steps to 31 dB
- TTL Control Interface
- Hermetic Connectorized Housing

### Guaranteed Specifications<sup>1</sup>

(-55°C to +85°C)

Frequency Range	DC to 2.0 GHz	
Nominal Attenuation <sup>2</sup>	1 dB Steps to 31 dB	
Attenuation Accuracy		
DC - 1.0 GHz	±(0.2 dB + 2% of Attenuation Setting in dB)	dB
1.0 - 2.0 GHz	±(0.2 dB + 2% of Attenuation Setting in dB)	dB
VSWR		
DC - .025 GHz	2.2:1 Max	
.025 - 0.5 GHz	1.8:1 Max	
0.2 - 2.0 GHz	1.5:1 Max	
0.5 - 1.0 GHz	1.4:1 Max	
Reference Insertion Loss		
DC - 0.5 GHz	5.5 dB Max	
0.5 - 1.0 GHz	6.0 dB Max	
1.0 - 2.0 GHz	6.5 dB Max	

### Operating Characteristics

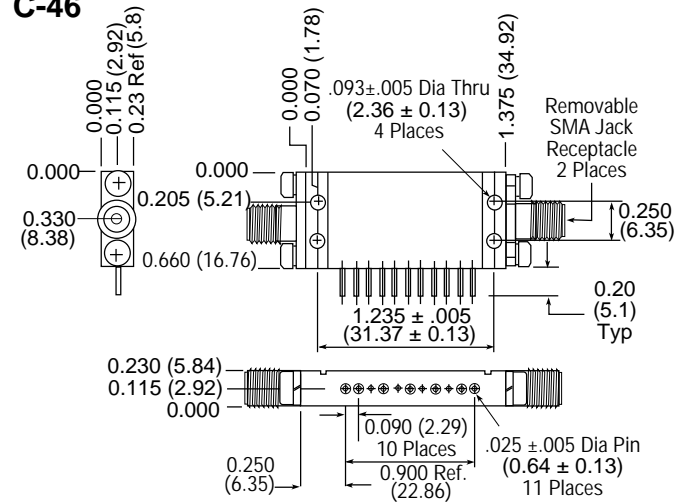
Impedance	50 Ohms Nominal	
Switching Characteristics		
Ton, (50% CTL to 90% RF)	160 ns Typ	
Toff (50% CTL to 10% RF)	80 ns Typ	
Trise, (10% RF to 90% RF)	15 ns Typ	
Tfall (90% RF to 10% RF)	3 ns Typ	
Switching Transients (unfiltered)	130 mV Typ	
Input Power for 1 dB Compression		
0.5 - 2.0 GHz	28 dBm Typ	
0.05 GHz	15 dBm Typ	
Intermodulation Intercept Point (for two-tone input power up to +5 dBm)		
Intercept Points	IP2	IP3
0.5 - 2.0 GHz	+55	+47
0.05 GHz	+45	+28
		dBm Typ
Bias Power		
	+15 VDC @ 5 mA Max	
	-12 VDC @ 3 mA Max	
Control	5 line, TTL Data Bus	
Vin Low (0)	0.0 to 0.8V @ 1 µA Max	
Vin High (1)	2.4 to 5.0V @ 1 µA Max	

1. All specifications apply when operated with bias voltages of +15 VDC and -12VDC and a 50 ohm impedance at both RF ports.
2. Above reference insertion loss.
3. Contact the factory for standard or custom screening requirements.

### Ordering Information

<b>Model No.</b>	<b>Package</b>
AT-357 SMA	Connectorized

### C-46

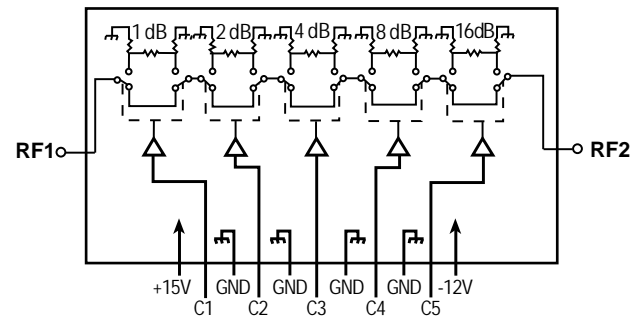


Bottom of case is AC ground.

Dimensions in ( ) are in mm.

Unless Otherwise Noted: .xxx = ± 0.010 (.xx = ± 0.25)  
.xx = ± 0.02 (.x = ± 0.5)

### Functional Schematic (Top View)



### Truth Table

Control Input					Attenuator Setting
C1	C2	C3	C4	C5	
0	0	0	0	0	REFERENCE
1	0	0	0	0	1 dB
0	1	0	0	0	2 dB
0	0	1	0	0	4 dB
0	0	0	1	0	8 dB
0	0	0	0	1	16 dB
Any Combination					Sum of Bits Selected
"1" = Logic High (TTL)					"0" = Logic Low (TTL)

Specifications Subject to Change Without Notice.

**M/A-COM, Inc.**

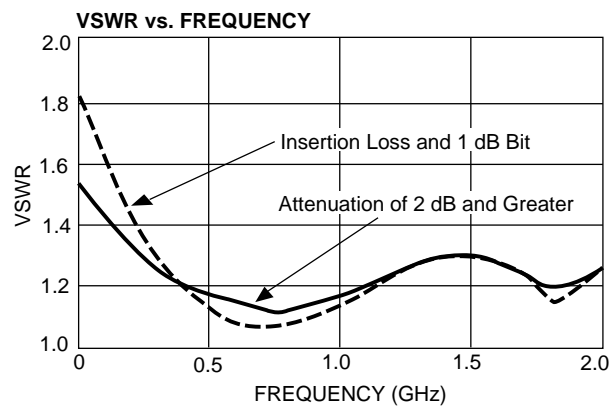
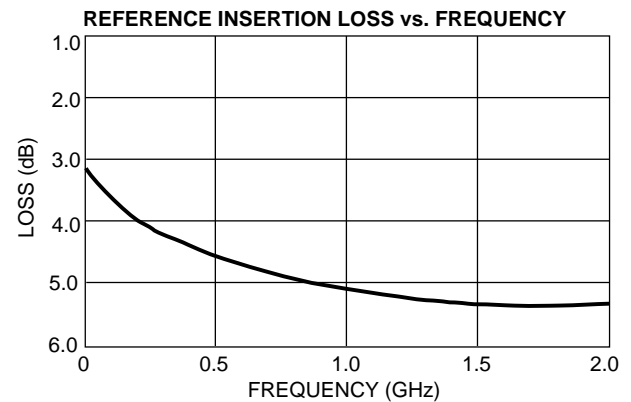
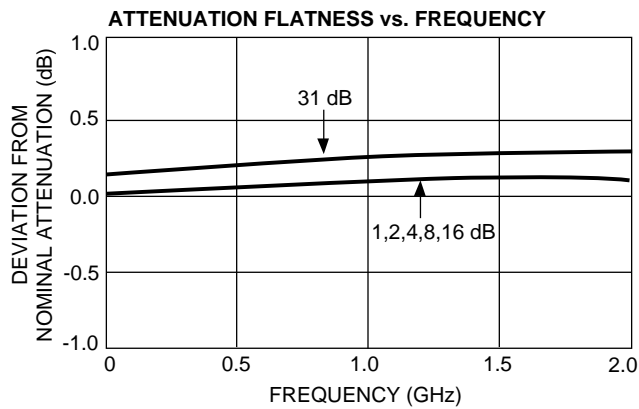
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## Absolute Maximum Ratings<sup>1</sup>

Parameter	Absolute Maximum <sup>1</sup>
Max. Input Power	
0.05 GHz	+27 dBm
0.5 – 2.0 GHz	+32 dBm
Bias Voltage	
+15V Supply (V+)	-0.7V to + 18V
-12V Supply (V-)	-15V to + 0.7V
Control Voltage	(V-)-2V to (V+)+2V (or 30 mA, whichever comes first)
Operating Temperature	-55°C to +125°C
Storage Temperature	-65°C to +150°C

Note: 1. Operation of this device above any one of these parameters may cause permanent damage.

## Typical Performance



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