



Digital Attenuator, 15 dB, 4 Bit DC–2 GHz

AT-212

Features

- Attenuation 1 dB Steps to 15 dB
- Temperature Stability +/- 0.18 dB from -55°C to +85° C Typical
- Ultra Low DC Power Consumption
- Hermetic Surface Mount Package
- Fast Switching Speed, 10 ns Typical

Guaranteed Specifications¹ (From -55°C to +85°C)

Frequency Range	DC – 2.0 GHz	
Nominal Attenuation ²	1 dB Steps to 15 dB	
Attenuation Accuracy	DC – 2.0 GHz	
Any Single Bit	+/- (0.10 dB +3% of Attenuation Setting in dB) dB	
Any Combination of Bits	+/- (0.15 dB +3% of Attenuation Setting in dB) dB	
VSWR	DC – 2.0 GHz	1.5:1 Max
Reference Insertion Loss	DC – 2.0 GHz	2.0 dB Max

Operating Characteristics

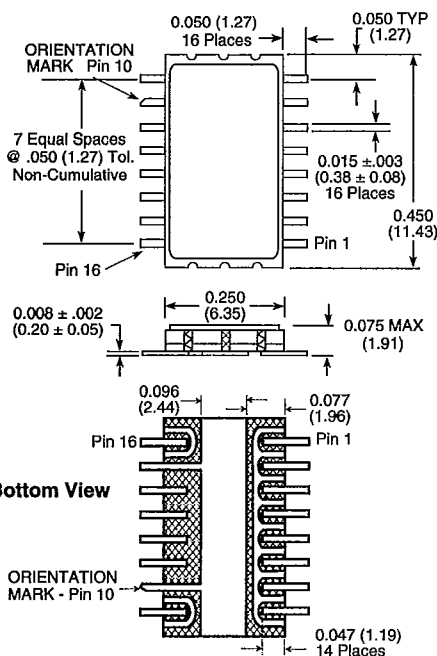
Impedance	50 Ohms Nominal	
Switching Characteristics		
Trise, Tfall (10% to 90%)	10 ns Typ	
Ton, Toff (50% CTL to 90%/10%)	15 ns Typ	
Transients (in-Band)	18 mV Typ	
Input Power for 1 dB Compression		
0.05 GHz	+22 dBm Typ	
0.5 GHz to 3 GHz	+28 dBm Typ	
Intermodulation Intercept point (for two-tone input power up to +5 dBm)		
Intercept Points	IP2	IP3
0.05 GHz	+49	+45
0.5 GHz to 3 GHz	+72	+50
Control Voltages (Complementary Logic)		
Vin Low	0V to -0.2V @ 20 μ A Max	
Vin Hi	-5V @ 10 μ A typ to -8V @ 200 μ A Max	

1. All specifications apply when operated with 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

Model No.	Package
AT-212 PIN	Surface Mount

CR-6



Bottom View

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)

Digital Attenuator, 15 dB, 4 Bit

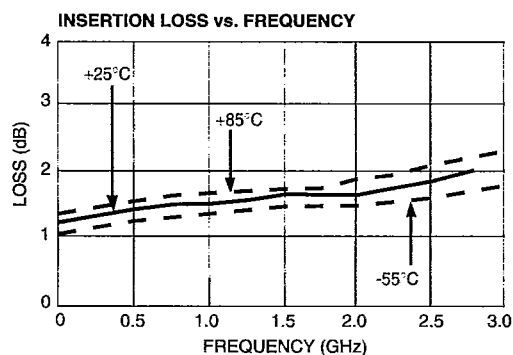
AT-212

Absolute Maximum Ratings

Parameter	Absolute Maximum ¹
Max. Input Power	+27 dBm
0.05 GHz	+34 dBm
0.5 – 2.0 GHz	
Control Voltage	+5V, -8.5V
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.

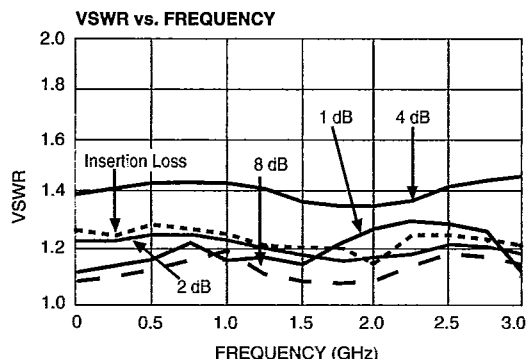
Typical Performance



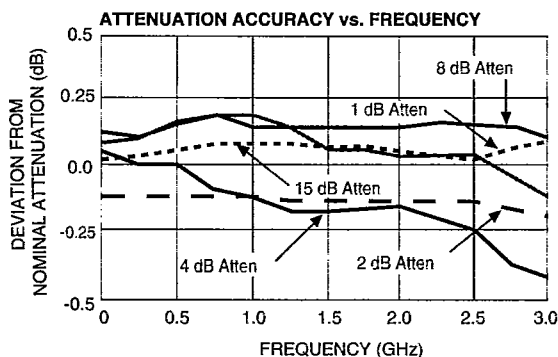
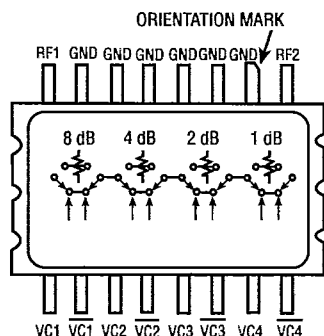
Truth Table

Control Inputs								Attenuation (dB)
VC4	VC4	VC3	VC3	VC2	VC2	VC1	VC1	
1	0	1	0	1	0	1	0	Reference
0	1	1	0	1	0	1	0	1 dB
1	0	0	1	1	0	1	0	2 dB
1	0	1	0	0	1	1	0	4 dB
1	0	1	0	1	0	0	1	8 dB
0	1	0	1	0	1	0	1	15 dB

*0 = Vin Low, Vin Low = 0V, *1 = Vin High, Vin High = -5V



Functional Schematic (Top View)



Specifications Subject to Change Without Notice

M/A-COM Inc. ■ 1011 Pawtucket Boulevard, Lowell, MA 01853 USA

■ Telephone: 800-366-2266