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

AT-212

V 2.00

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 Specifications[1] (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% if Attenuation Setting in dB) dB	
Any Combination of Bits	+/- (0.15 dB +3% if Attenuation Setting in dB) dB	
VSWR	DC - 2.0 GHz	1.5:1 dB 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% C+L to 90%/10% RF)		15 ns Typ
Transients (in band)		18 mV Typ
Input Power for 1 dB Compression		
.005 GHz		+22 dBm Typ
.05 GHz to 5 GHz		+28 dBm Typ

Intermodulation Intercept Point (for two-tone input power up to +5 dBm)

Intercept Points	IP_2	IP_3	
.005 GHz to 5 GHz	+49	+45	dBm
.05 GHz to 5 GHz	+72	+50	dBm

Control Voltages (Complementary Logic)

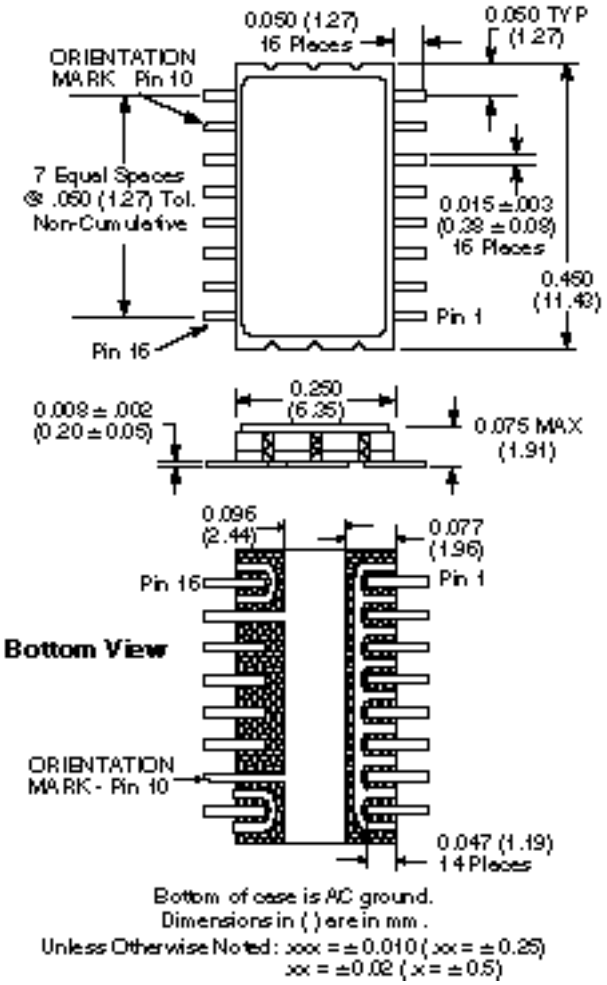
V_{IN} Low	0 V to -0.2 V @ 20µA Max
V_{IN} Hi	-5 V @ 10µA typ to -8 V @ 200 µA Max

1. All specifications apply with 50 ohm connected to all 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



Absolute Maximum Ratings[1]

Parameter	Absolute Maximum
Max Input Power	
0.05 GHz	+27 dBm
0.5 - 2.0 GHz	+34 dBm
Control Voltage	+5 V, -8.5 V
Operating Temperature	-55°C to +125°C
Storage Temperature	-65°C to +150C

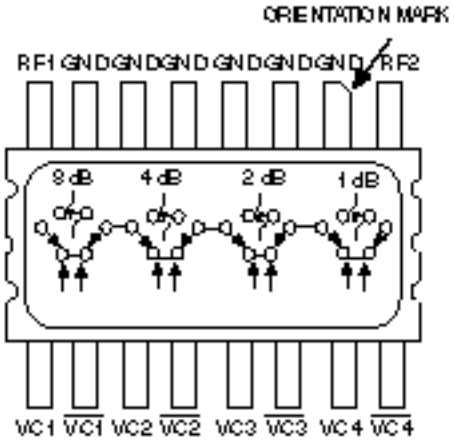
1. Operation of this device above any one of these parameters may cause permanent damage.

Truth Table

Control Inputs								
$\overline{VC4}$	VC4	$\overline{VC3}$	VC3	$\overline{VC2}$	VC2	$\overline{VC1}$	VC1	Attenuation (dB)
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 = 0 V, "1" = Vin High, Vin High = -5 V

Functional Schematic (Top View)



Typical Performance