

Digital Attenuator, 15.5 dB, 5-Bit DC - 2 GHz

AT-282

V 2.00

Features

- Attenuation 0.5 dB Steps to 15.5 dB
- Temperature Stability +/- 0.12 dB from -55°C to +85° C Typical
- Ultra Low DC Power Consumption
- Hermetic Surface Mount Package
- Fast Switching Speed, 12 ns Typical

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

Frequency Range	DC – 2.0 GHz	
Nominal Attenuation ²	0.5 dB Steps to 15.5 dB	
Attenuation Accuracy	DC-2 GHz	
DC – 2.0 GHz	+/- (0.2 dB +3% of Attenuation Setting in dB)	
VSWR	DC – 2.0 GHz	1.6:1 Max
Reference Insertion Loss	DC – 2.0 GHz	2.2 dB Max

Operating Characteristics

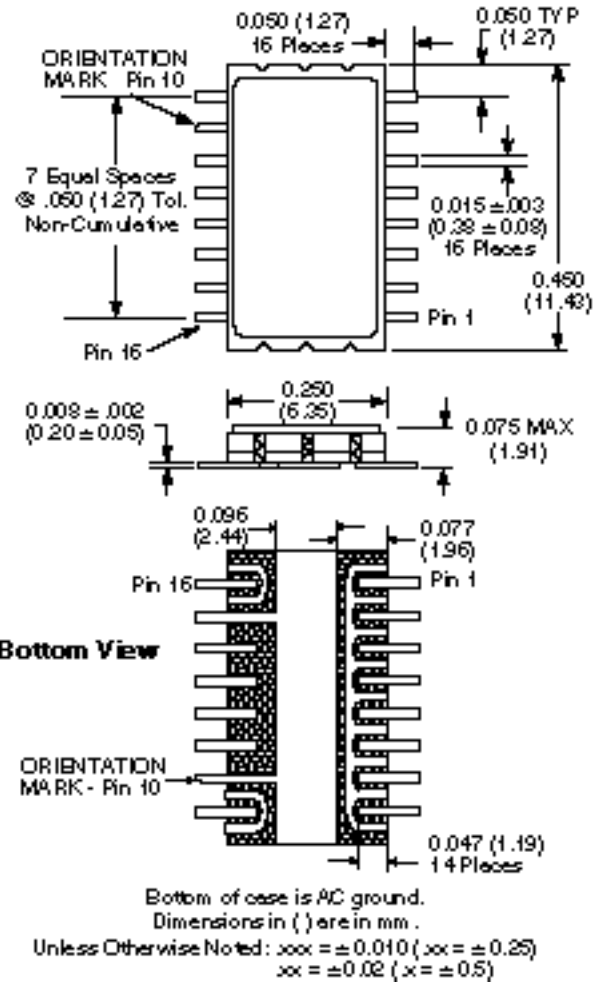
Impedance	50 Ohms Nominal		
Switching Characteristics			
Trise, Tfall (10% to 90%)	12 ns Typ		
Ton, Toff (50% CTL to 90%/10%)	18 ns Typ		
Transients (in-Band)	30 mV Typ		
Input Power for 1 dB Compression			
0.05 GHz	+22 dBmTyp		
0.5 – 2.0 GHz	+27 dBmTyp		
Intermodulation Intercept point (for two-tone input power up to +5 dBm)			
Intercept Points	IP2	IP3	
0.05 GHz	+53	+41	dBm Typ
0.5 – 2.0 GHz	+68	+43	dBm Typ
Control Voltages (Complementary Logic)			
Vin Low	0V to -0.2V @ 30 µA		
Max			
Vin High	-5V @ 10 µA typ to -8V @ 200 µA 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-282 PIN	Surface Mount

CR-6

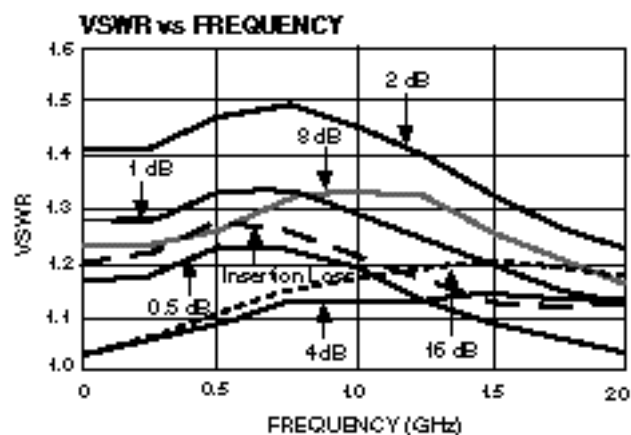
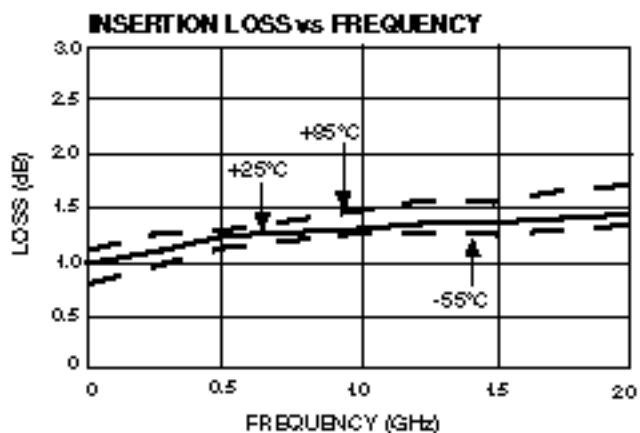


Absolute Maximum Ratings

Parameter	Absolute Maximum ¹
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 +150°C

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

Typical Performance



Truth Table

Control Inputs								Attenuation (dB)
VC5	VC4	VC3	VC2	VC1	VC0	VC1	VC0	
1	1	1	0	1	0	1	0	Reference
0	1	1	0	1	0	1	0	0.5 dB
1	0	1	0	1	0	1	0	1 dB
1	1	0	1	1	0	1	0	2 dB
1	1	1	0	0	1	1	0	4 dB
1	1	1	0	1	0	0	1	8 dB
0	0	0	1	0	1	0	1	15.5 dB

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

Functional Schematic (Top View)

