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

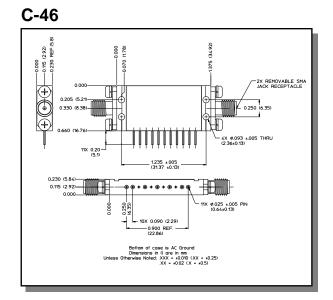


Rev. V4

Features

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

Description



Electrical Specifications ¹: $T_A = -55^{\circ}C$ to $+85^{\circ}C$

Parameter	Test Conditions	Frequency	Units	Min	Тур	Max
Nominal Attenuation ²	1 dB Steps to 31 dB					
Attenuation Accuracy		DC - 1.0 GHz 1.0 - 2.0 GHz	± (0.2 dB +2% of Atten Setting in dB) dB) ± (0.2 dB +2% of Atten Setting in dB) dB)			
VSWR	DC025 GHz Ratio .025 - 0.5 GHz Ratio 0.2 - 2.0 GHz Ratio 0.5 - 1.0 GHz Ratio		 	 	2.2:1 1.8:1 1.5:1 1.4:1	
Reference Insertion Loss		DC - 0.5 GHz 0.5 - 1.0 GHz 1.0 - 2.0 GHz	dB dB dB			5.5 6.0 6.5
Impedance	-	_	Ohms	_	50	_
Ton Toff	50% CTL to 90% RF 50% CTL to 10% RF		ns ns	_	160 80	
Trise Tfall	10% RF to 90% RF 90% RF to 10% RF	_	ns ns	_	15 3	_
Transients	Unfiltered	_	mV	—	130	—
1 dB Compression	Input Power	0.5 - 2.0 GHz 0.05 GHz	dBm dBm	_	28 15	_
IP2	Two-Tone Input Power up to +5 dBm	0.5 - 2.0 GHz 0.05 GHz	dBm dBm	_	+55 +45	
IP3	Two-Tone Input Power up to +5 dBm	0.5 - 2.0 GHz 0.05 GHz	dBm dBm	_	+47 +28	_

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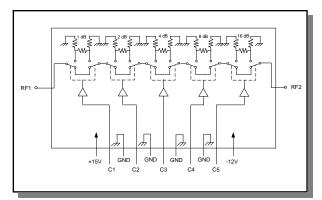
GaAs Digital Attenuator 31 dB, 5 - Bit, DC - 2 GHz

Rev. V4

Electrical Specifications ¹: $T_A = -55^{\circ}C$ to $+85^{\circ}C$

Parameter	Test Conditions	Frequency Units		Min	Тур	Max
Bias Power	+15 VDC -12 VDC		mA mA	_	_	5 3
Vin Low (0) Vin High (1)	0.0 to 0.8V 2.4 to 5.0V		μΑ μΑ	_		1 1

Functional Schematic (Top View)



Absolute Maximum Ratings ⁴

Parameter	Absolute Maximum		
Max Input Power 0.05 GHz 0.5 - 2.0 GHz	+27 dBm +32 dBm		
Bias Votlage +15V Supply (V+) -12V Supply (V-)	-0.7V to +18V -15V to +0.7V		
Control Votlage	(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		

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

Truth Table

Control Input				Attenuation Setting	
C1	C2	C3	C4	C5	Cotting
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)

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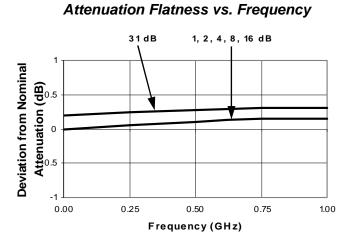
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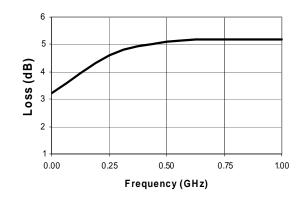
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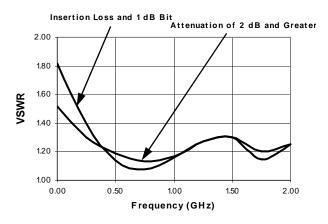
Typical Performance Curves



Ref. Insertion Loss vs. Frequency



VSWR vs. Frequency



Ordering Information

Part Number	Package		
AT-357 SMA	C-46		

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