

Absorptive Voltage Control Attenuator 8GHz-12GHz



Product Description

RFVAT0812A30 is an absorptive voltage controlled attenuator with a frequency range of 8 to 12GHz.

The power input rating of this attenuation is 27dBm. The Insertion Loss is 1.7dB with a typical attenuation range of 30dB.

The working temperature of this product is between - 40°C and + 85°C.

Features

- Absorptive Voltage Control Attenuator
- Wide Attenuation Range 30dB Typical
- Insertion Loss 1.7dB Typical
- Absorptive Topology
- Single Control Operation

Typical Applications

- Wireless Infrastructure
- Military and Aerospace Applications
- Test Instrumentation
- Radar Systems
- 5G Wireless Communications
- Microwave Radio Systems
- TR Modules
- Research and Development
- Cellular Base Stations

Electrical Specifications (T_A=+25°C)

Parameter	Min	Typ	Max	Units
Frequency Range	8		12	GHz
Attenuation Range	30			dB
Insertion Loss		1.7	2.0	dB
Insertion Loss Temperature Coefficient		0.003		dB/ °C
Input VSWR @ Insertion Loss State		1.5	1.8	: 1
Output VSWR @ Insertion Loss State		1.5	1.8	: 1
0.1dB Compression Point(P0.1dB)			27	dBm
Input Ip3		45		dBm
Switching Speed		2.5		us
Control Voltage	0	10		V
Current		15		mA
Weight		0.016 Max.		lbs.
Impedance		50		Ohms
Input / Output Connectors	SMA-Female (Input) – SMA-Female (Output)			
Package	Epoxy Sealed (Standard)			
	Hermetically Sealed (Optional)			

Absolute Maximum Ratings

Parameter	Rating
Control Voltage	0V to 13V
RF Input Power	30dBm

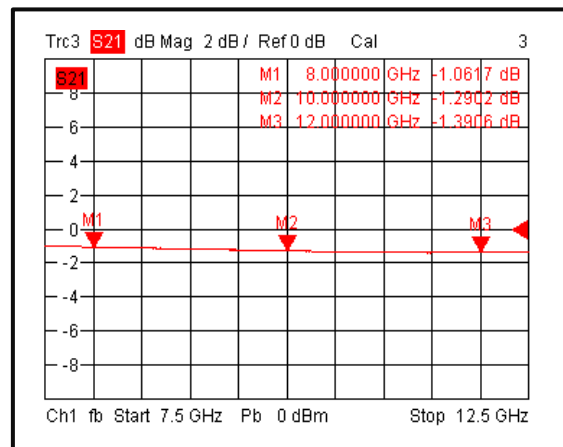
Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40°C to +85°C (Case Temperature)
Storage Temperature	-50°C to +105°C
Thermal Shock	-40°C → +85°C (5 Cycles / 10 hours)
**Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85°C for 72 Hours
Shock	1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883 (For Hermetically Sealed Units)

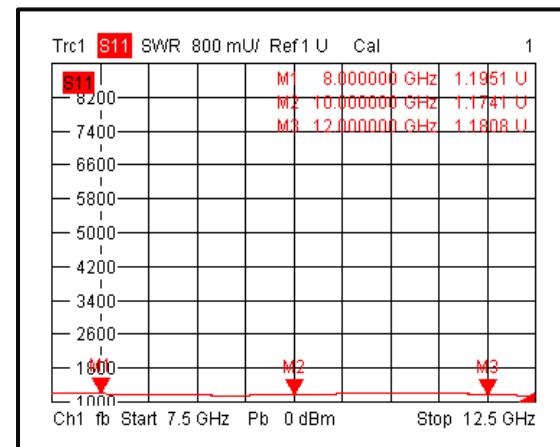
**For vibration testing details please see additional information section.

Typical Performance Plots

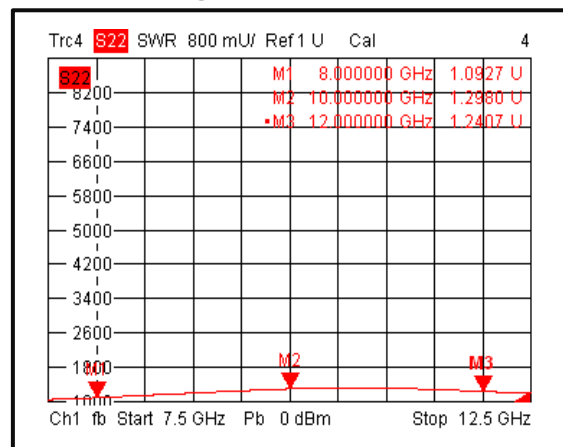
Insertion Loss @+25°C



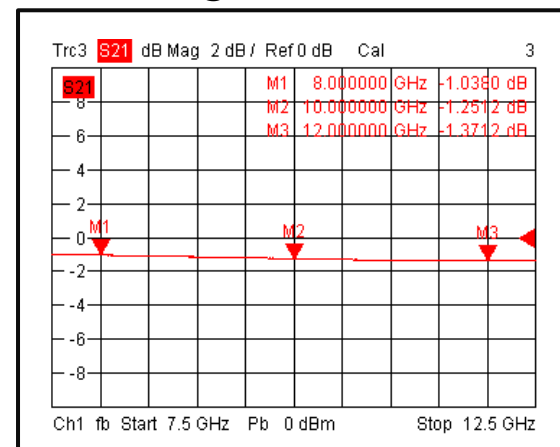
Input VSWR @+25°C



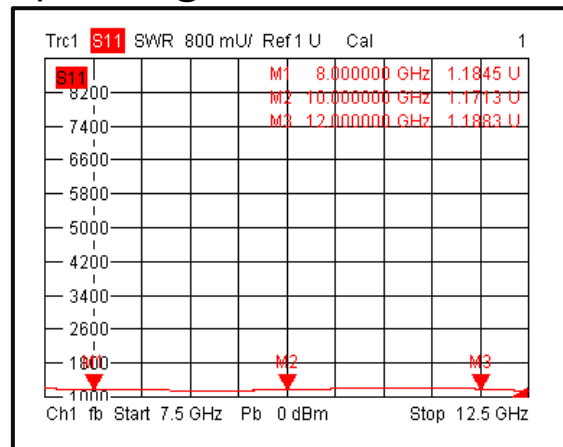
Output VSWR @+25°C



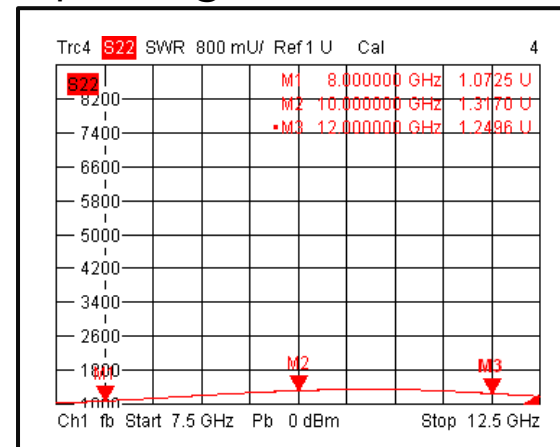
Insertion Loss @-40°C



Input VSWR @-40°C

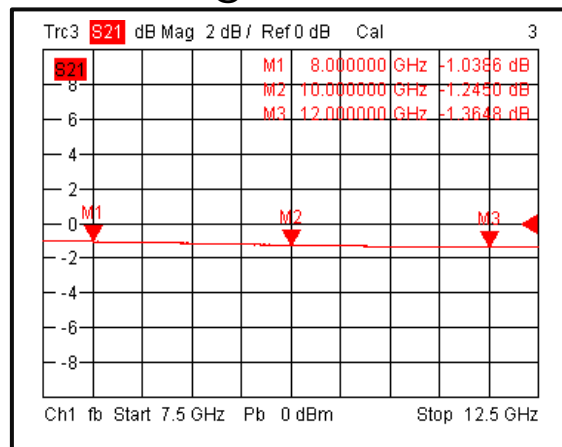


Output VSWR @-40°C

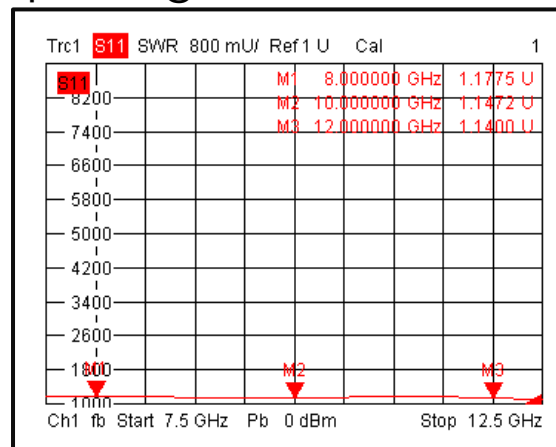


Typical Performance Plots

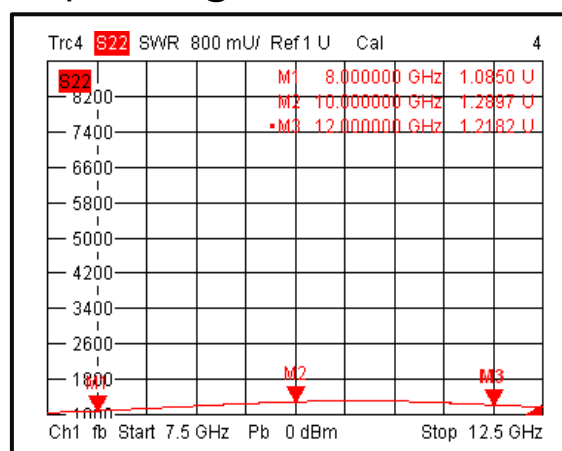
Insertion Loss @+85°C



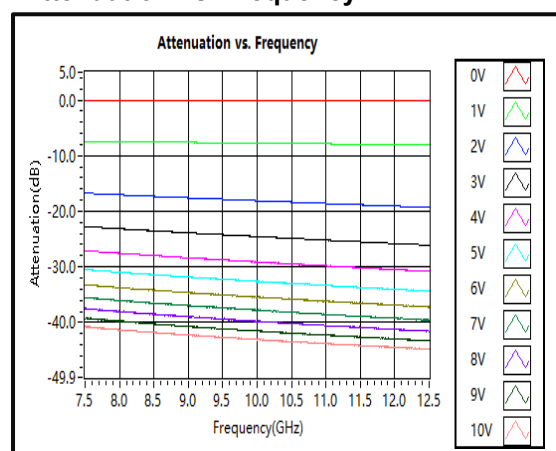
Input VSWR @+85°C



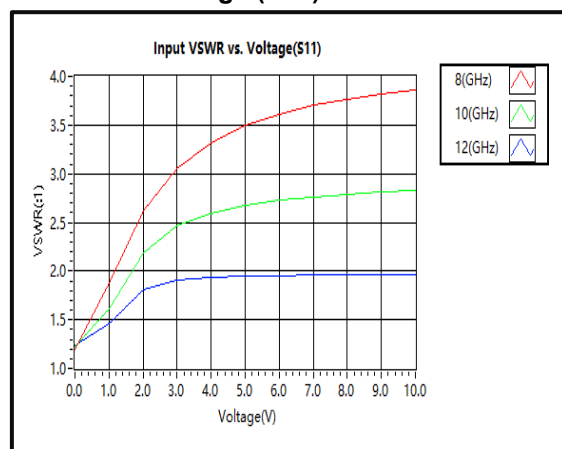
Output VSWR @+85°C



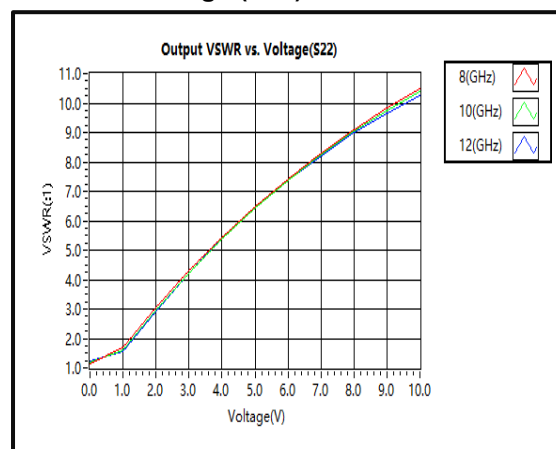
Attenuation vs. Frequency



VSWR vs. Voltage (S11)

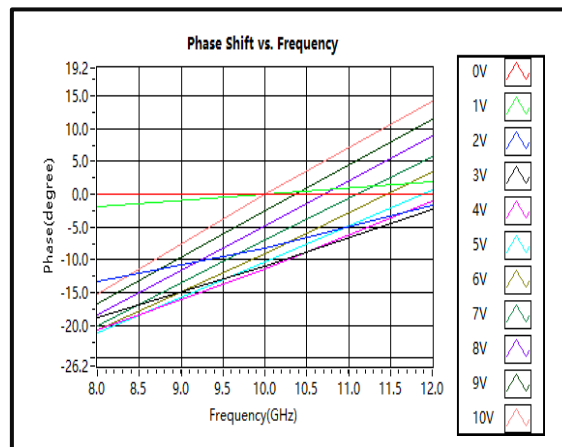


VSWR vs. Voltage (S22)

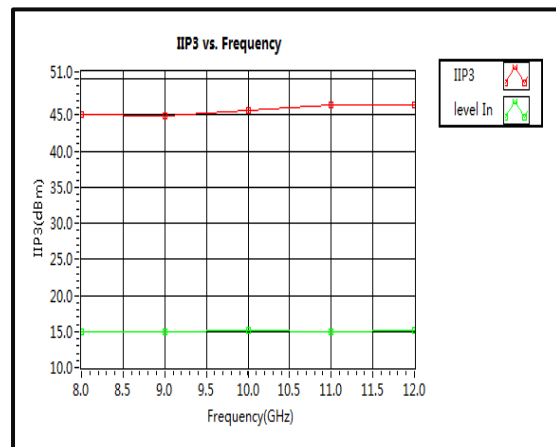


Typical Performance Plots

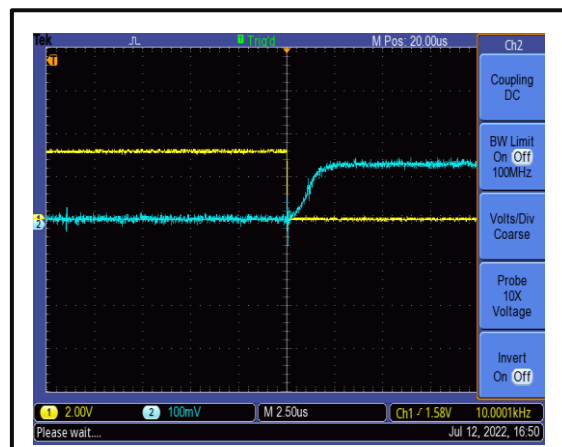
Phase Shift vs. Frequency



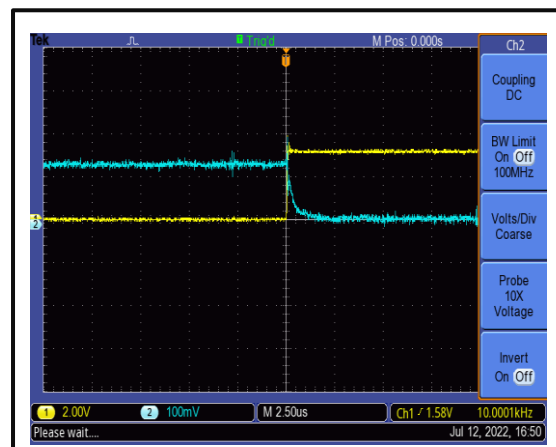
IIP3



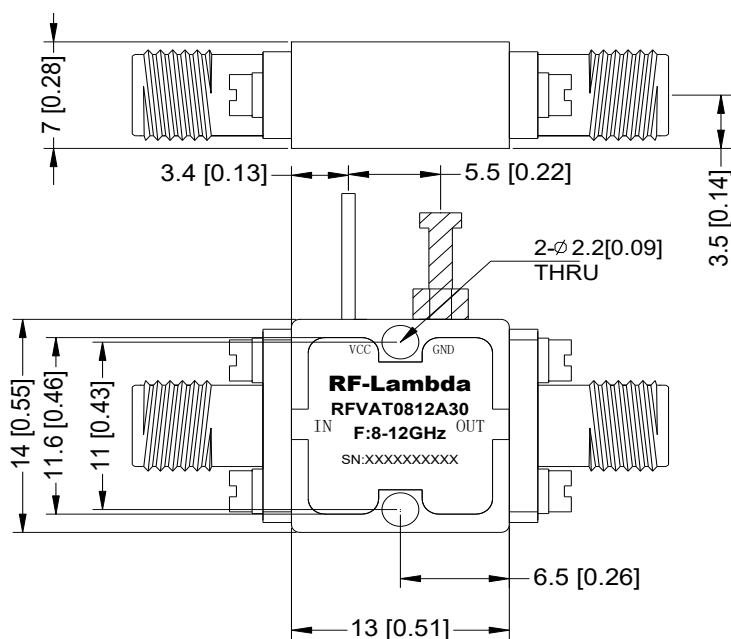
Speed



Speed

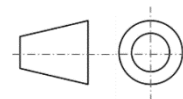


Outline Drawing



Notes:

1. Package Material: Aluminum
2. Finish: Gold Plated
3. All dimensions are in millimeters [inches].
4. Housing Tolerances ± 0.1 [0.004] unless otherwise specified.
5. Standard torque wrench must be used to secure RF connectors.



Additional Information

Documentation	Webpage
ESD Policy	https://rflambda.com/pdf/rflambda_esd_control.pdf
Connector Torque Specifications	https://www.rflambda.com/pdf/Torque_Specifications.pdf
Random Vibration Test Standard	https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf

Ordering Information

Part Number	Modification	Description
RFVAT0812A30	Standard	8-12GHz Voltage Control Attenuator

Important Notice

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