Absorptive Voltage Control Attenuator 20GHz-50GHz

Product Description

RFVAT2050A30 is an absorptive voltage controlled attenuator with a frequency range of 20 to 50GHz.

The power input rating of this attenuation is 24dBm. The Insertion Loss is 4dB with a typical attenuation range of 30dB.

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

Features

- Absorptive Voltage Control Attenuator
- Wide Attenuation Range 30dB Typical
- Insertion Loss 4dB Typical
- Absorptive Topology
- Singe 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=+25ºC)

Parameter	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range		20-27			27-35			35-50		GHz
Attenuation Range		30			35			40		dB
Insertion Loss		3.5	4		4	4.5		4.6	5	dB
Insertion Loss Temperature Coefficient		0.05			0.05			0.05		dB/ °C
Input VSWR		1.5	2		1.7	2		1.7	2	: 1
Output VSWR		1.5	2		1.7	2		1.7	2	: 1
0.1dB Compression Point(P0.1dB)		24			24			24		dBm
Input Ip3		32			32			32		dBm
Control Voltage	-5		0	-5		0	-5		0	V
Current					30					mA
Weight					0.018 Max.					lbs.
Impedance					50					Ohms
Input / Output Connectors					2.4mm-Female (Input) – 2.4mm-Female (Output)					
Package					Epoxy Sealed (Standard)					
					Hermetically Sealed (Optional)					

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Absolute Maximum Ratings

Parameter	Rating
Control Voltage	-5-0V
RF Input Power	+24dBm

Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40ºC to +85ºC (Case Temperature)
Storage Temperature	-50ºC to +105ºC
Thermal Shock	-40ºC → +85ºC (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 +85ºC 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.

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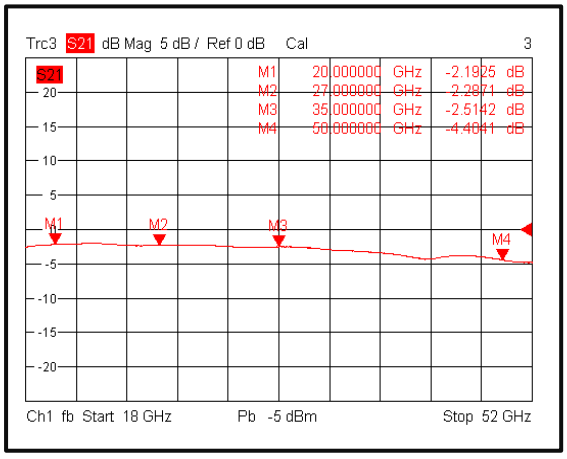
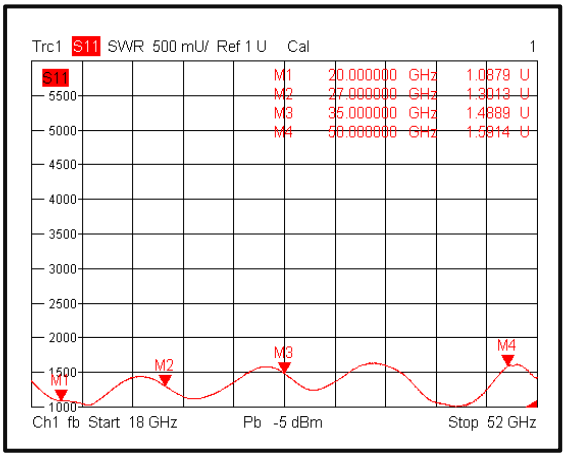
Typical Performance Plots

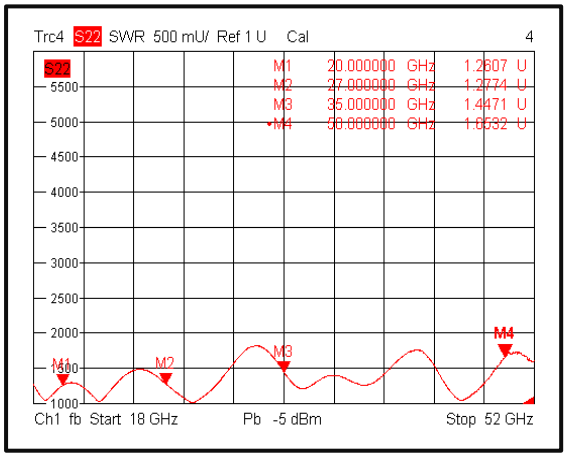
Insertion Loss @+25ºC



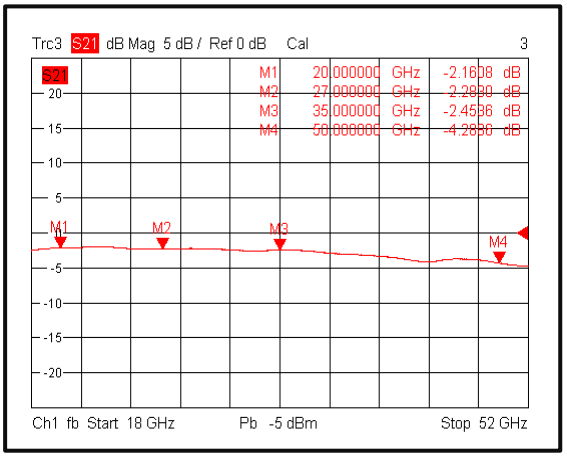
Input VSWR @+25ºC



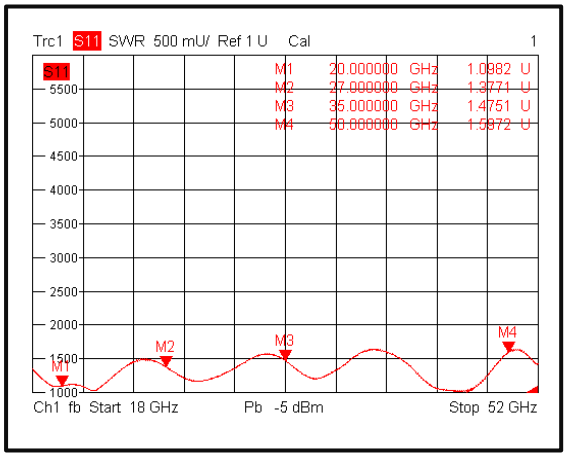
Output VSWR @+25ºC



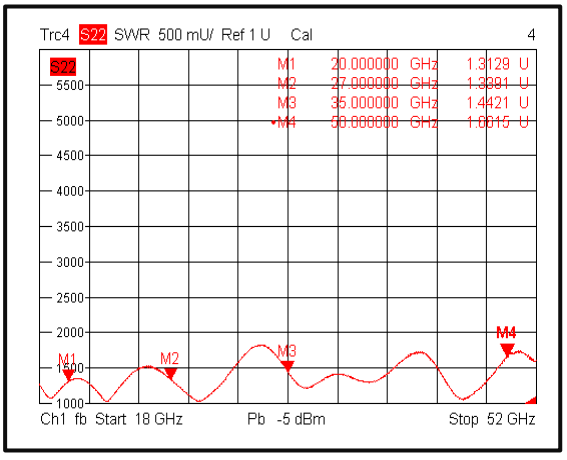
Insertion Loss @-40ºC



Input VSWR @-40ºC

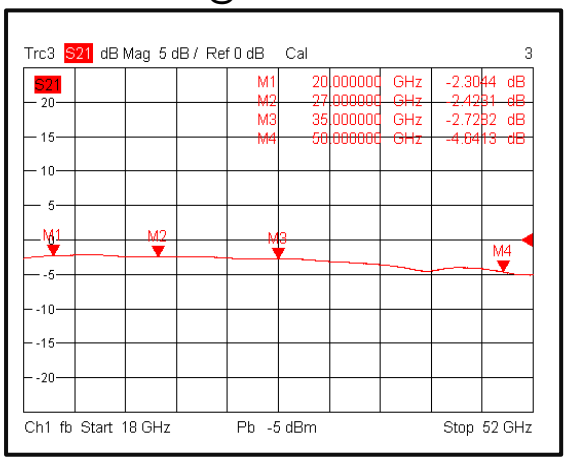


Output VSWR @-40ºC

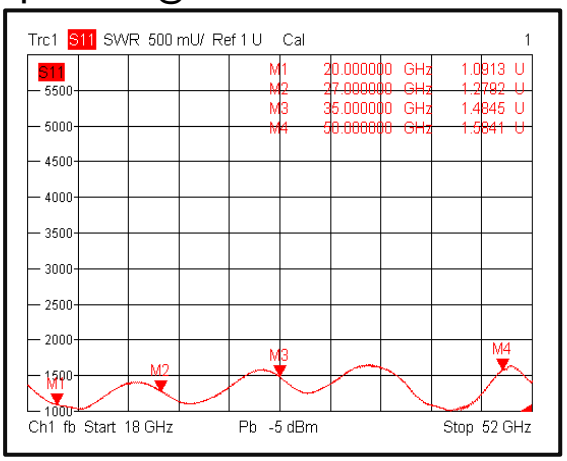


Typical Performance Plots

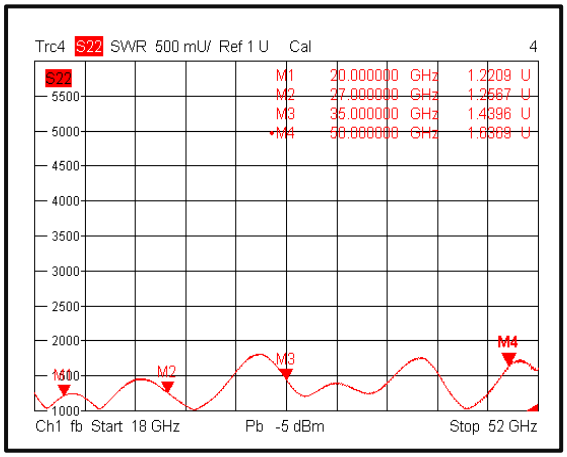
Insertion Loss @+85ºC



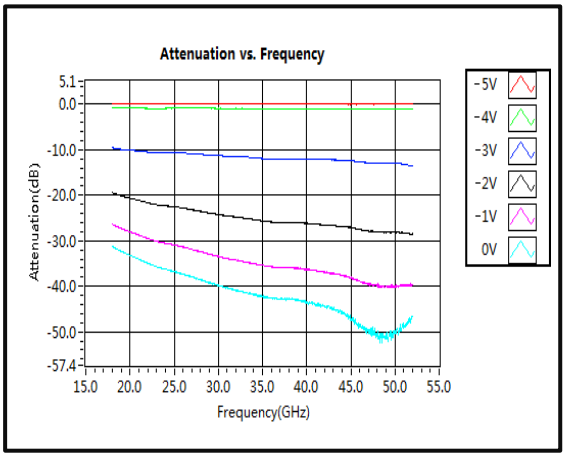
Input VSWR @+85ºC



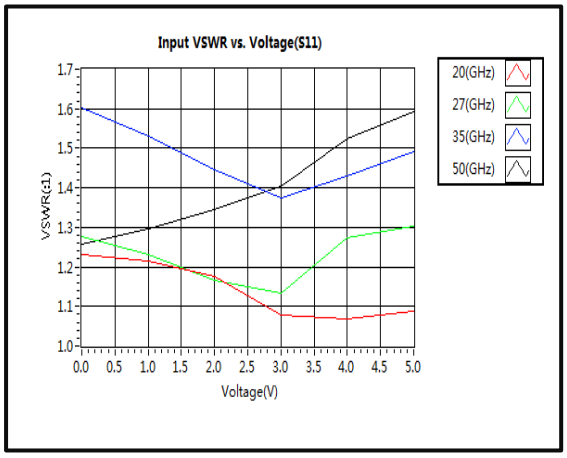
Output VSWR @+85ºC



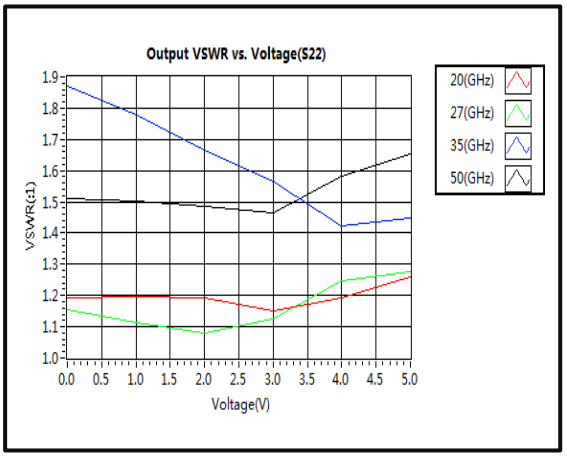
Attenuation vs. Frequency



VSWR vs. Voltage (S11)

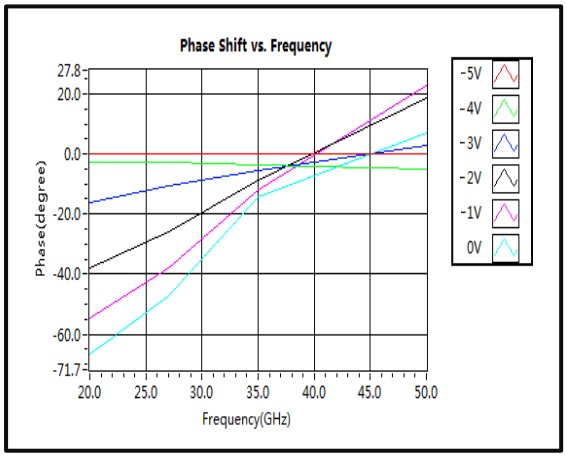


VSWR vs. Voltage (S22)

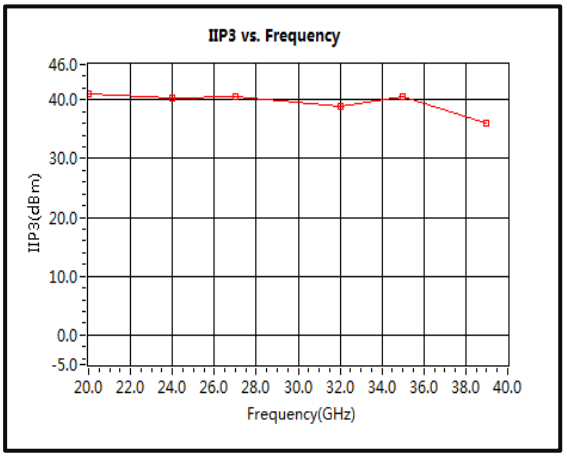


Typical Performance Plots

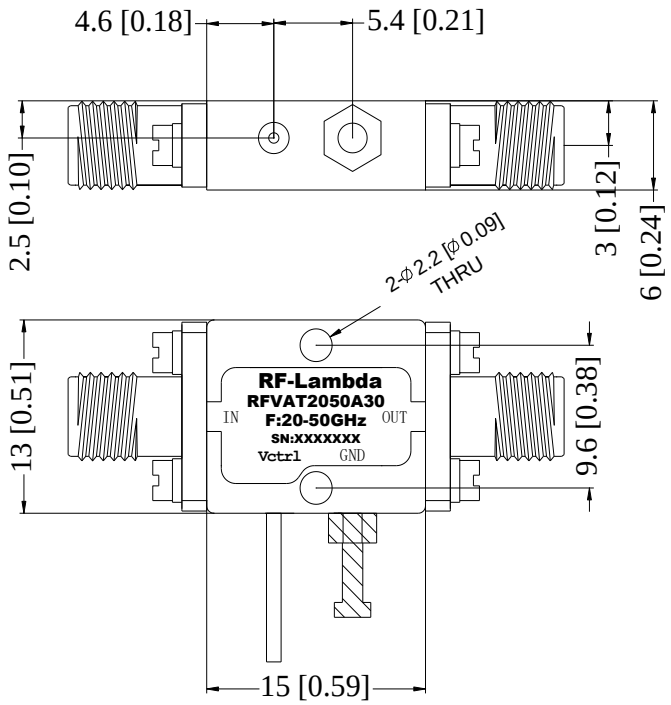
Phase Shift vs. Frequency

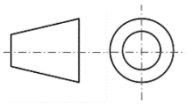


IIP3



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
RFVAT2050A30	Connectors 2.4mm-Female	20GHz-50GHz Voltage Control Attenuator

Important Notice

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