

Absorptive Voltage Control Attenuator 0.2GHz-4GHz



Product Description

RFVAT0201A30 is an absorptive voltage controlled attenuator with a frequency range of 0.2 to 4GHz.

The power input rating of this attenuation is 30dBm. The Insertion Loss is 3.3dB with a typical attenuation range of 35dB.

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

Features

- Absorptive Voltage Control Attenuator
- Functional Bandwidth : 0.1GHz - 6GHz
- Wide Attenuation Range 35dB Typical
- Insertion Loss 3.3dB 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	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range			0.2~ 1			1~2			2~4		GHz
Attenuation Range		29	35		29	35		29	35		dB
Insertion Loss			2.8	3.5		3.3	3.8		4.3	4.8	dB
Insertion Loss Temperature Coefficient			0.01			0.01			0.01		dB/ °C
Input VSWR @Insertion Loss state			1.5	2.0		1.6	2.0		1.8	2.2	: 1
Output VSWR @Insertion Loss state			1.5	2.0		1.6	2.0		1.8	2.2	: 1
0.1dB Compression Point (P0.1dB)			30			30			30		dBm
Input Ip3			45			50			45		dBm
Switching Speed				15			15			15	us
Control Voltage		0	10		0	10		0	10		V
Current	@+5V						2 Max.				mA
	@Vcc						5 Max.				mA
Weight							0.026Max.				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
Supply Voltage	+6V
Control Voltage	0V to 12V
RF Input Power	+30dBm

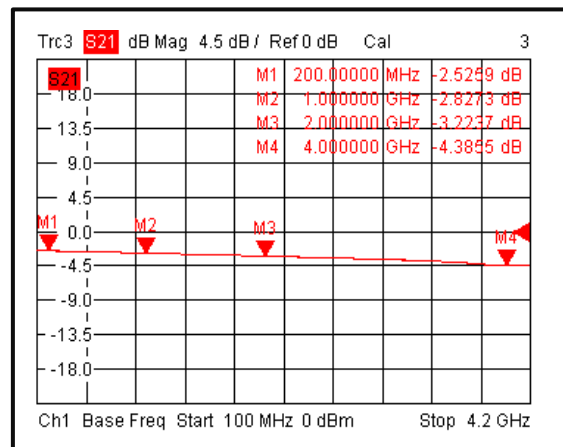
Environmental Specifications and Test Standards

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)

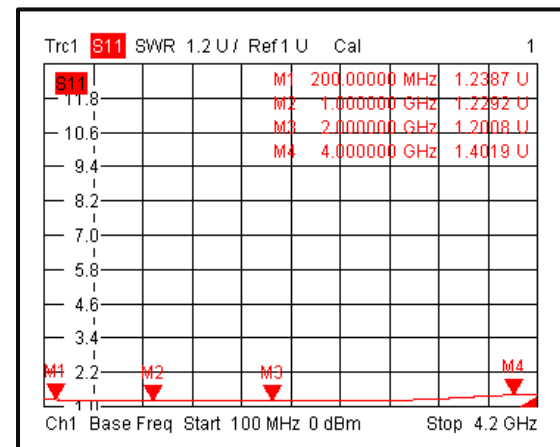
**For vibration testing details please see additional information section.

Typical Performance Plots

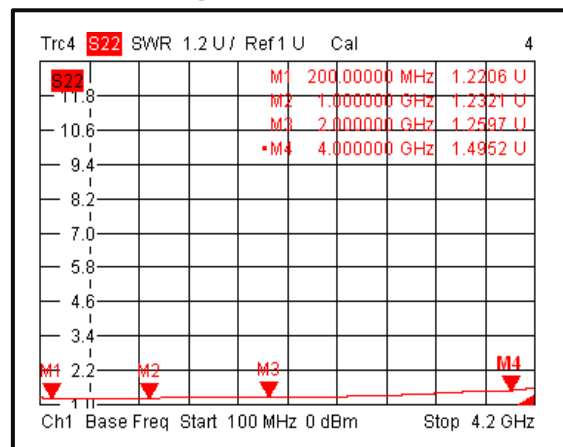
Insertion Loss @+25°C



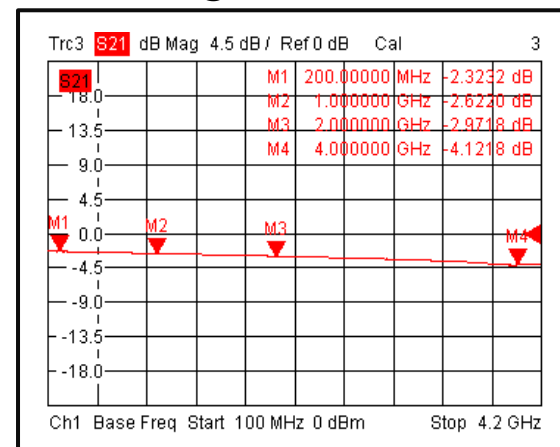
Input VSWR @+25°C



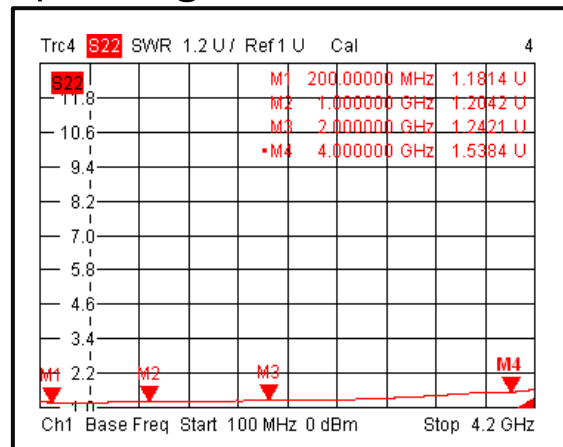
Output VSWR @+25°C



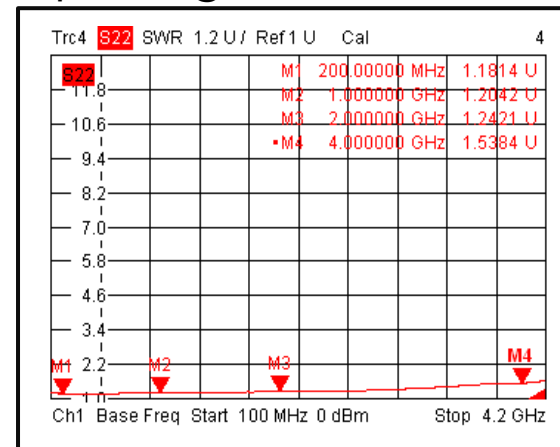
Insertion Loss @-40°C



Input VSWR @-40°C

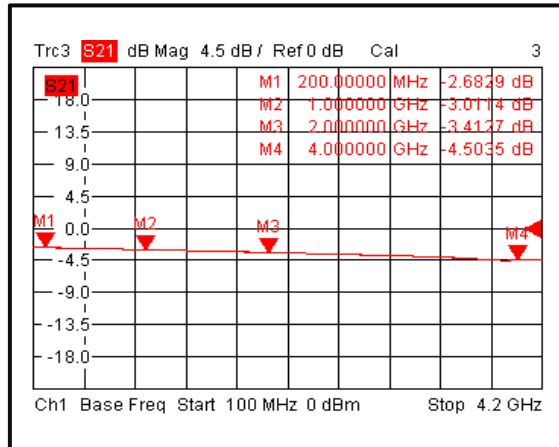


Output VSWR @-40°C

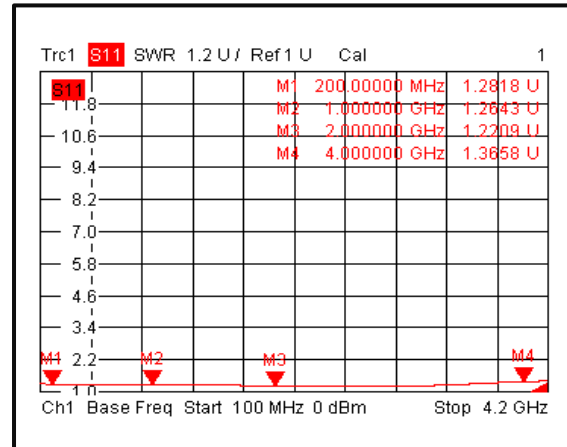


Typical Performance Plots

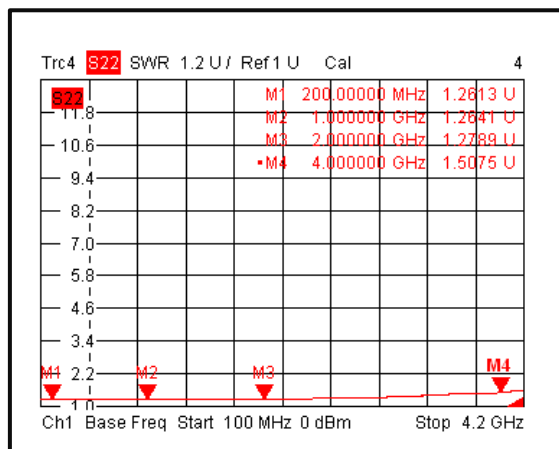
Insertion Loss @+85°C



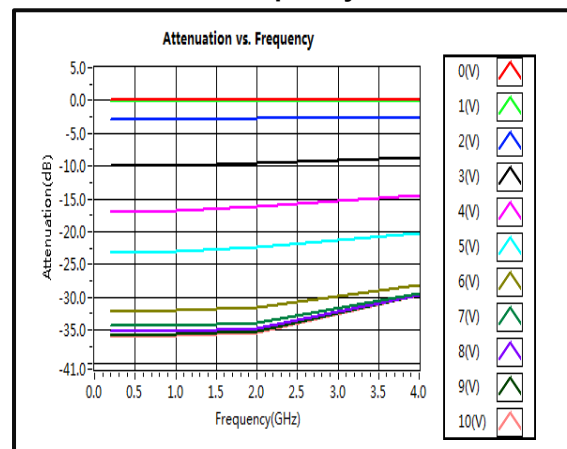
Input VSWR @+85°C



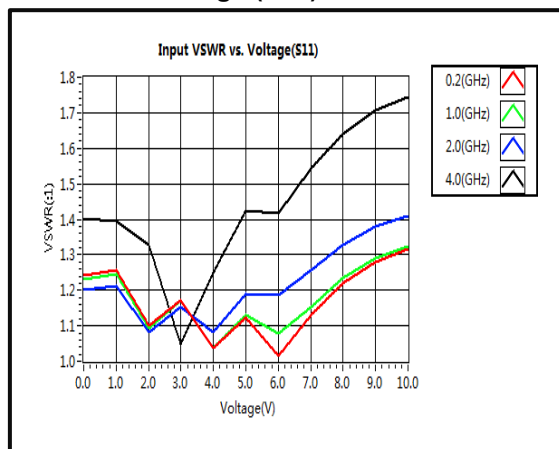
Output VSWR @+85°C



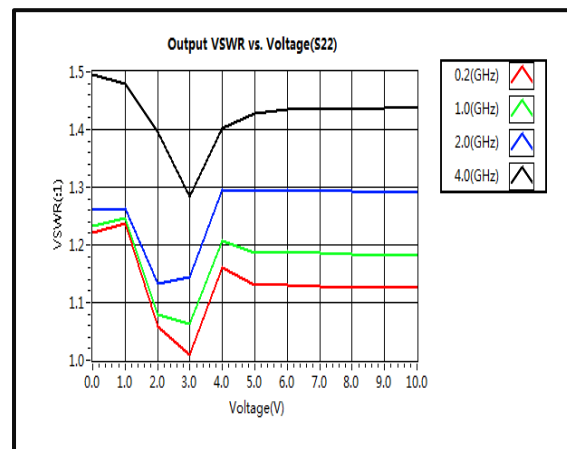
Attenuation vs. Frequency



VSWR vs. Voltage (S11)

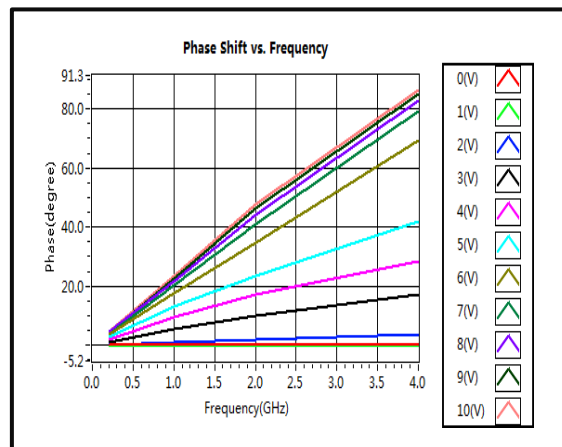


VSWR vs. Voltage (S22)

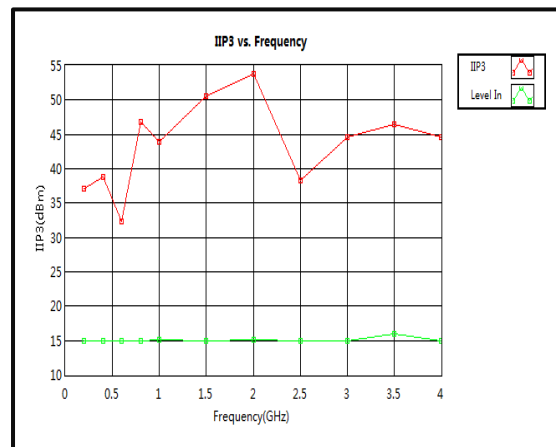


Typical Performance Plots

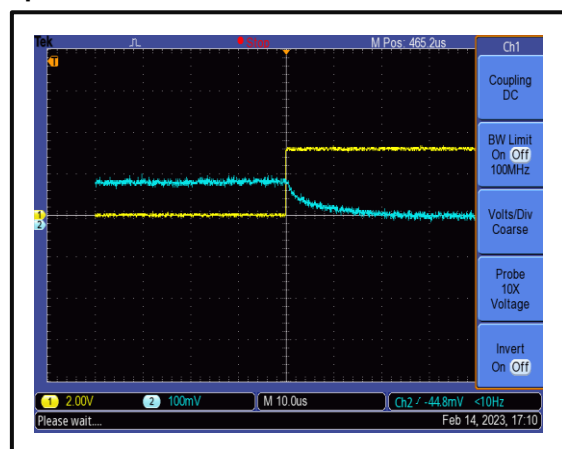
Phase Shift vs. Frequency



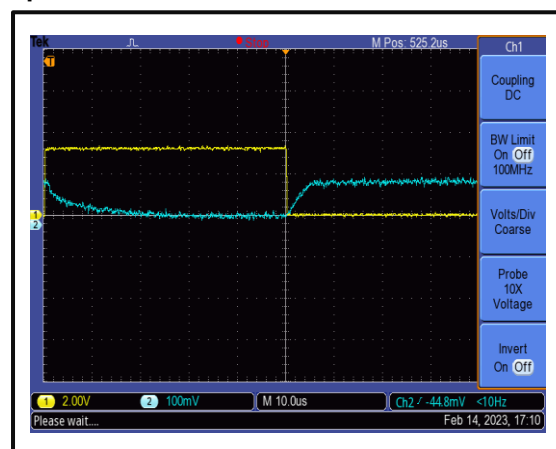
IIP3



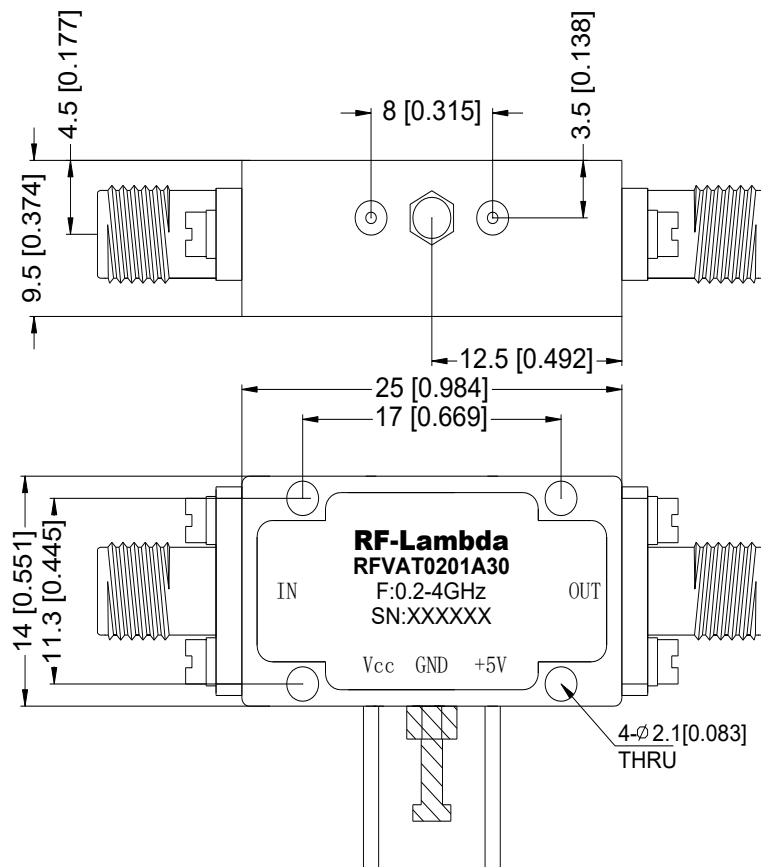
Speed



Speed

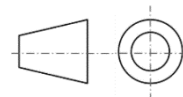


Outline Drawing



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
RFVAT0201A30	Standard	0.2GHz-4GHz Voltage Control Attenuator

Important Notice

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