Absorptive Voltage Control Attenuator 0.01GHz-43.5GHz

Product Description

RFVAT0040A30 is an absorptive voltage controlled attenuator with a frequency range of 0.01 to 43.5GHz.

The power input rating of this attenuation is 33dBm. The Insertion Loss is 5.5dB with a typical attenuation range of 34dB.

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

Features

- Absorptive Voltage Control Attenuator
- Functional Bandwidth : 0.01GHz – 43.5GHz
- Wide Attenuation Range 34dB Typical
- Insertion Loss 5.5dB Typical
- Absorptive Topology
- Double Negative 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		0.01 ~ 18			18~ 40			40~43.5		GHz
Attenuation Range	25	35		28	35		30	34		dB
Insertion Loss		4.0	4.5		5.5	6.5		7.0	8.5	dB
Insertion Loss Temperature Coefficient		0.01			0.01			0.01		dB/ °C
Input VSWR @ Insertion Loss state		1.6	2.2		1.8	2.2		1.8	2.2	: 1
Output VSWR @ Insertion Loss state		1.6	2.2		1.8	2.2		1.8	2.2	: 1
0.1dB Compression Point (P0.1dB)		27			27			26		dBm
Input Ip3		33			33			32		dBm
Control Voltage		-1	0.5		-1	0.5		-1	0.5	V
Current	40 Max.									mA
Weight	0.025 Max.									lbs.
Impedance	50									Ohms
Input / Output Connectors	2.92mm-Female (Input) – 2.92mm-Female (Output)									
Package	Epoxy Sealed (Standard)									
	Hermetically Sealed (Optional)									

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Absolute Maximum Ratings

Parameter	Rating
Supply Voltage	-3V ~ +0.5V
RF Input Power	+27dBm

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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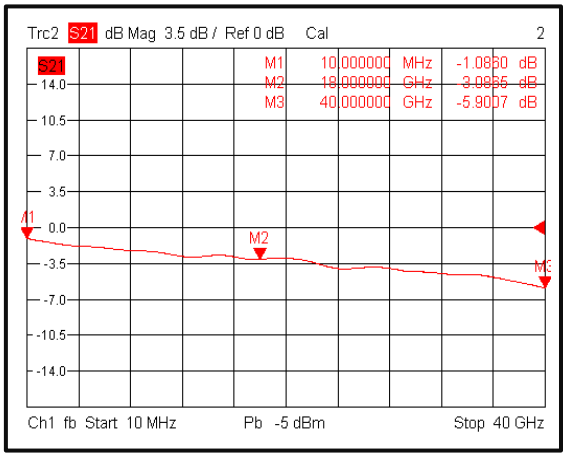
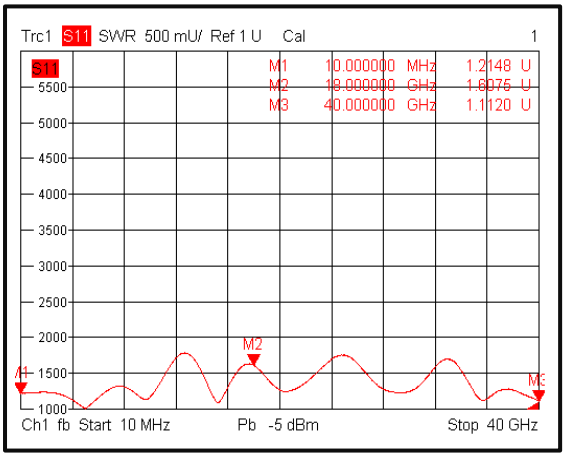
Typical Performance Plots

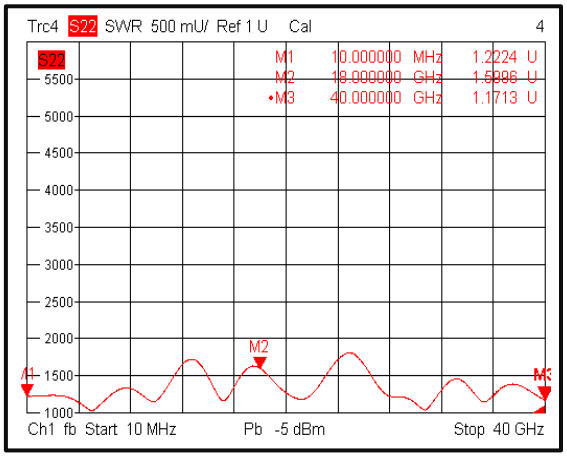
Insertion Loss @+25ºC



Input VSWR @+25ºC

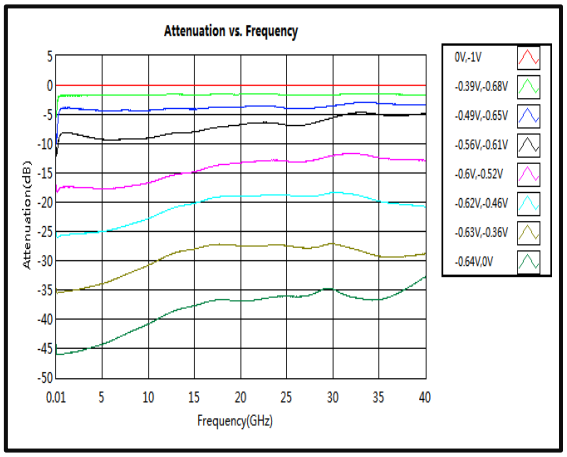


Output VSWR @+25ºC

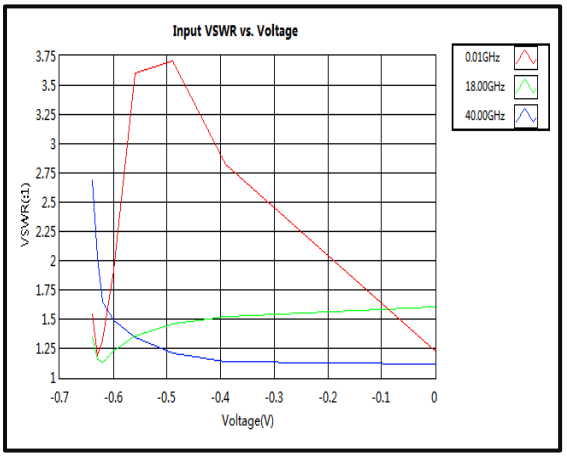


Typical Performance Plots

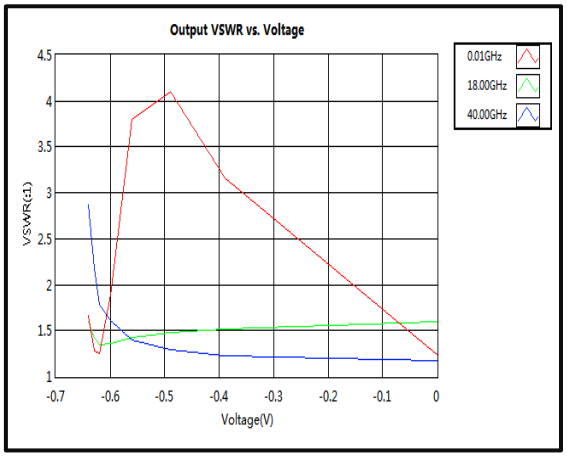
Attenuation vs. Frequency



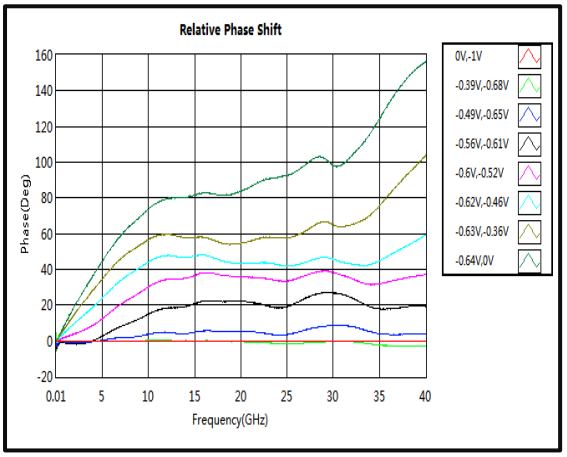
VSWR vs. Voltage (S11)



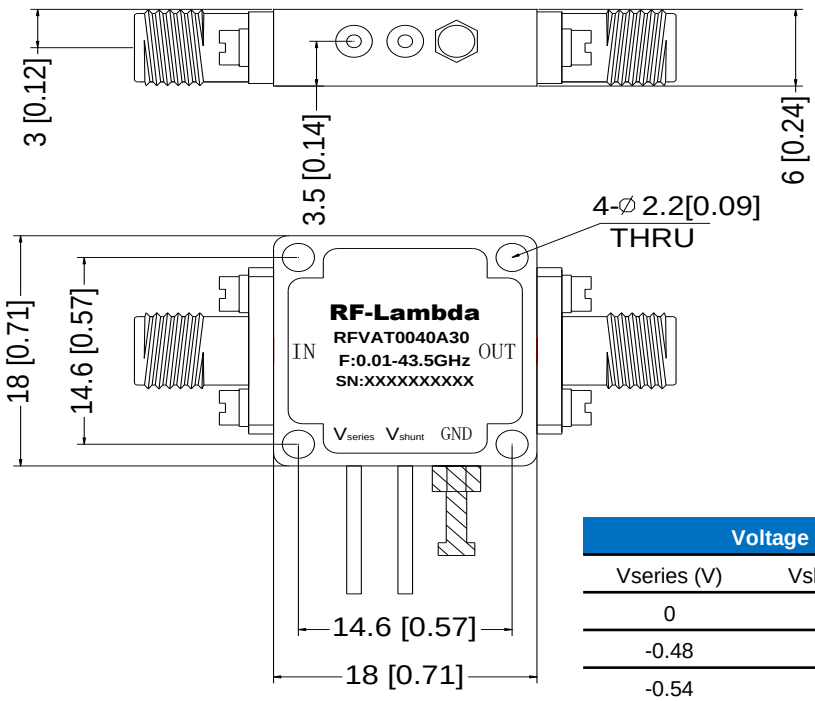
VSWR vs. Voltage (S22)



Phase Shift vs. Frequency

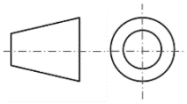


Outline Drawing



Voltage Control Table		
Vseries (V)	Vshunt (V)	Attenuation(dB)
0	-1	0
-0.48	-0.74	2
-0.54	-0.68	4
-0.57	-0.61	8
-0.63	-0.54	16
-0.63	-0.47	24
-0.63	-0.39	28
-0.64	-0.26	34
-1	0	MAX

Note: Table is for illustration purposes only.
Please refer to actual test data.



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
RFVAT0040A30	Connectors 2.92mm-Female	0.01GHz-43.5GHz Voltage Control Attenuator

Important Notice

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