

Hermetically Sealed Absorptive Voltage Control Attenuator 4GHz-30GHz



Product Description

RFVAT0430A30-H is a hermetically sealed absorptive voltage controlled attenuator with a frequency range of 4 to 30GHz.

The power input rating of this attenuation is 25dBm. The Insertion Loss is 4.0dB with a typical attenuation range of 30dB.

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

Features

- Wide Band Operation 4-30GHz
- Wide Attenuation Range 30dB
- Series-Shunt Reflective Topology
- Single Control Operation
- Customization available upon request

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		4-16			16-24			24-30		GHz
Attenuation Range	20	30		25	35		25	40		dB
Insertion Loss		2.6	3.0		3.0	3.5		4.5	5.0	dB
Insertion Loss Temperature Coefficient		0.05			0.05			0.05		dB/ °C
Input VSWR		1.7	2.2		1.7	2.2		1.7	2.2	: 1
Output VSWR		1.8	2.2		1.8	2.2		1.8	2.2	: 1
0.1dB Compression Point (P0.1dB)		23			25			23		dBm
Input Ip3		39			39			39		dBm
Switching Speed					100					ns
Control Voltage					-5~0					V
Current					5					mA
Weight					0.022 Max.					lbs.
Impedance					50					Ohms
Input / Output Connectors					2.92mm-Female (Input) – 2.92mm-Female (Output)					
Package					Hermetically Sealed					

Absolute Maximum Ratings

Parameter	Rating
Control Voltage	-6V ~ +0.3V
RF Input Power	+30dBm

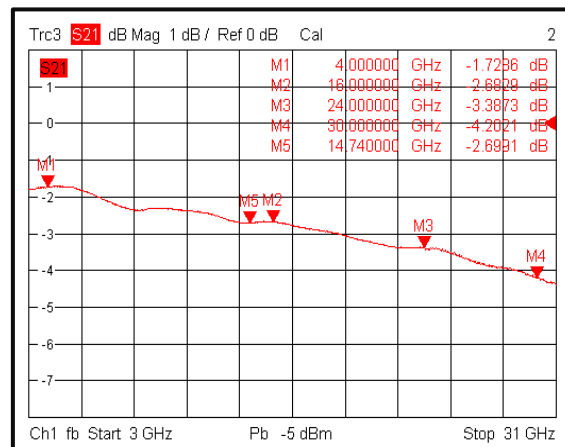
Environmental Specifications and Test Standards

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)

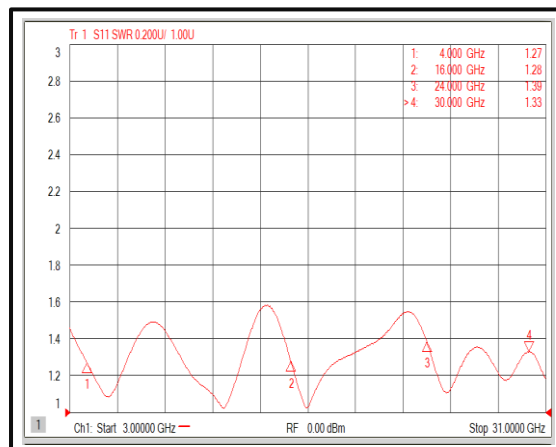
**For vibration testing details please see additional information section.

Typical Performance Plots

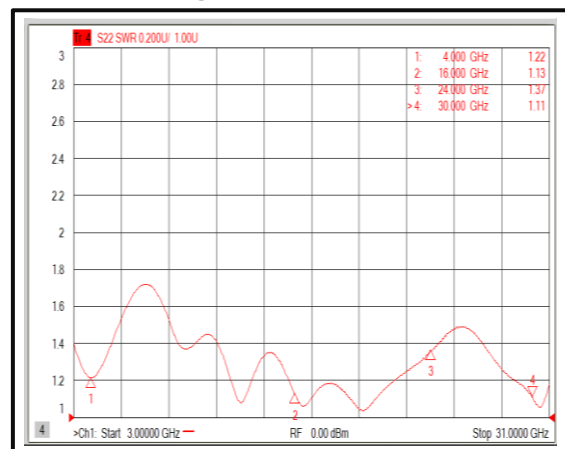
Insertion Loss @+25°C



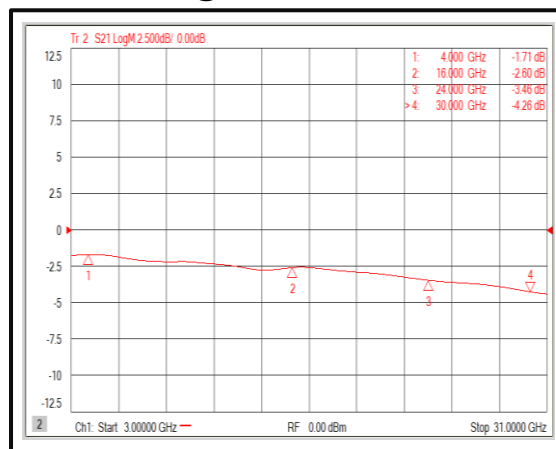
Input VSWR @+25°C



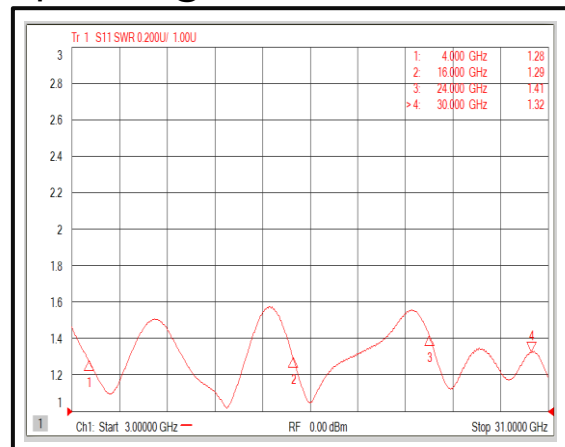
Output VSWR @+25°C



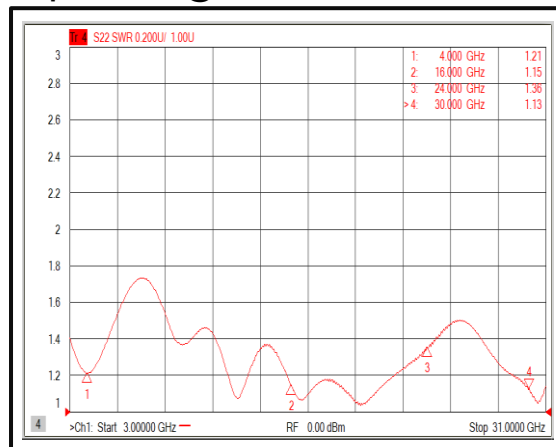
Insertion Loss @-40°C



Input VSWR @-40°C

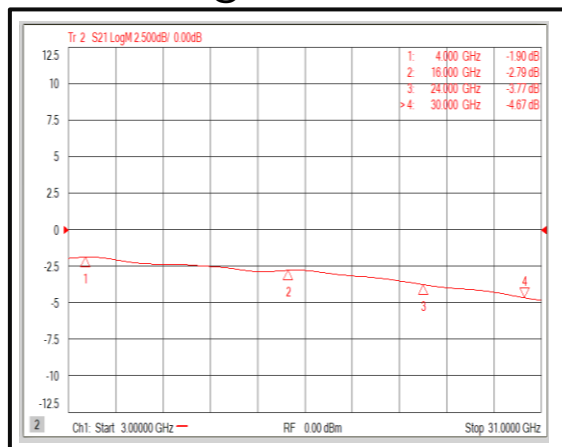


Output VSWR @-40°C

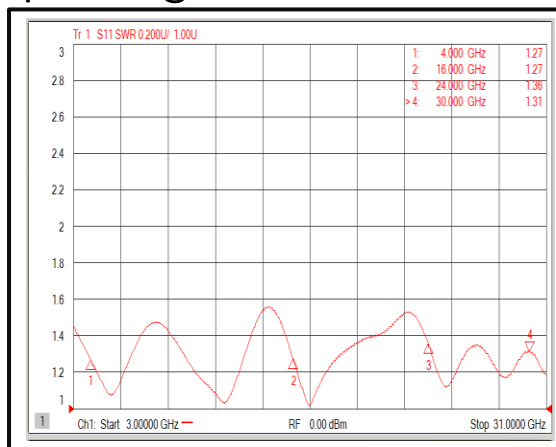


Typical Performance Plots

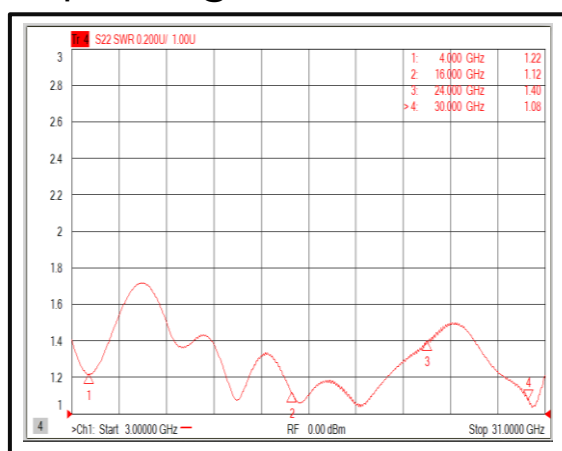
Insertion Loss @+85°C



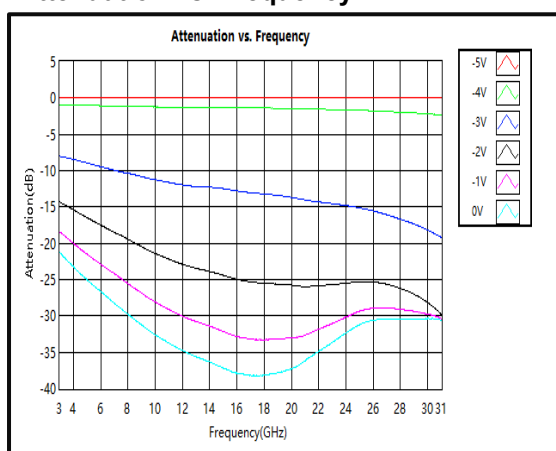
Input VSWR @+85°C



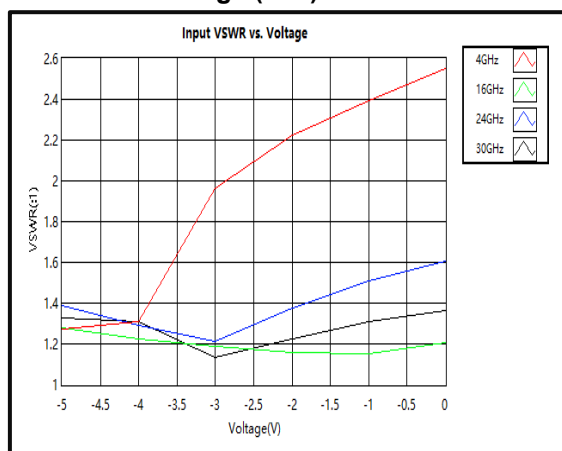
Output VSWR @+85°C



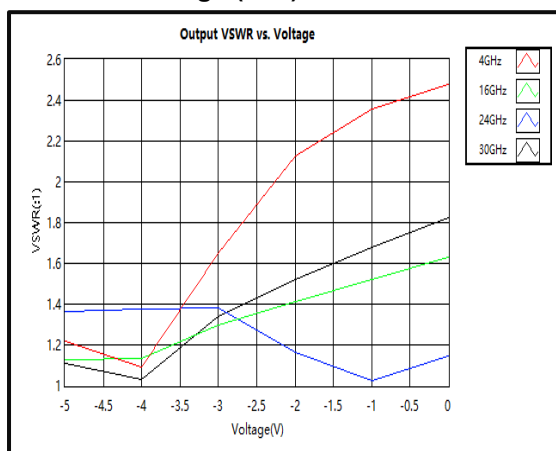
Attenuation vs. Frequency



VSWR vs. Voltage (S11)

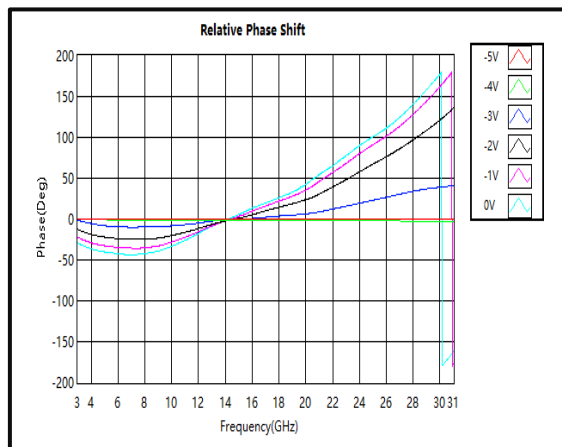


VSWR vs. Voltage (S22)

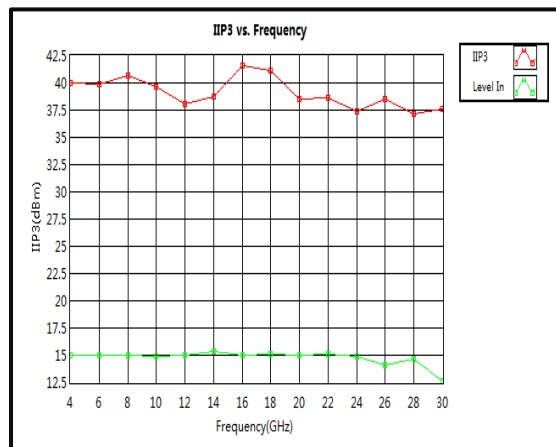


Typical Performance Plots

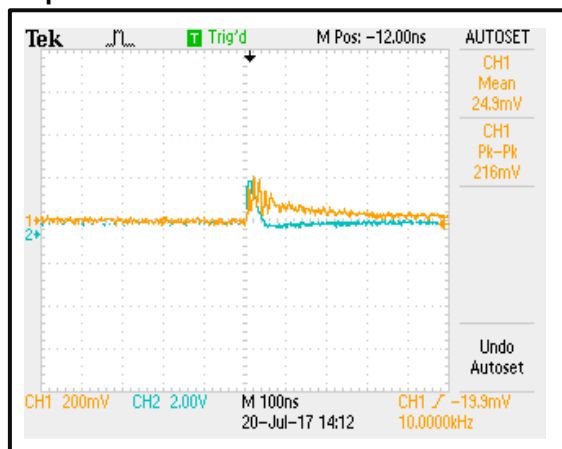
Phase Shift vs. Frequency



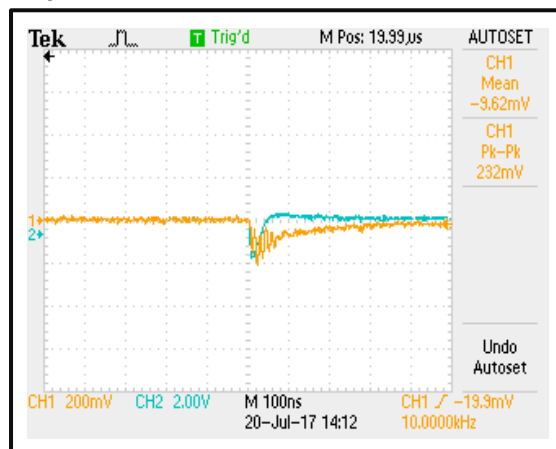
IIP3



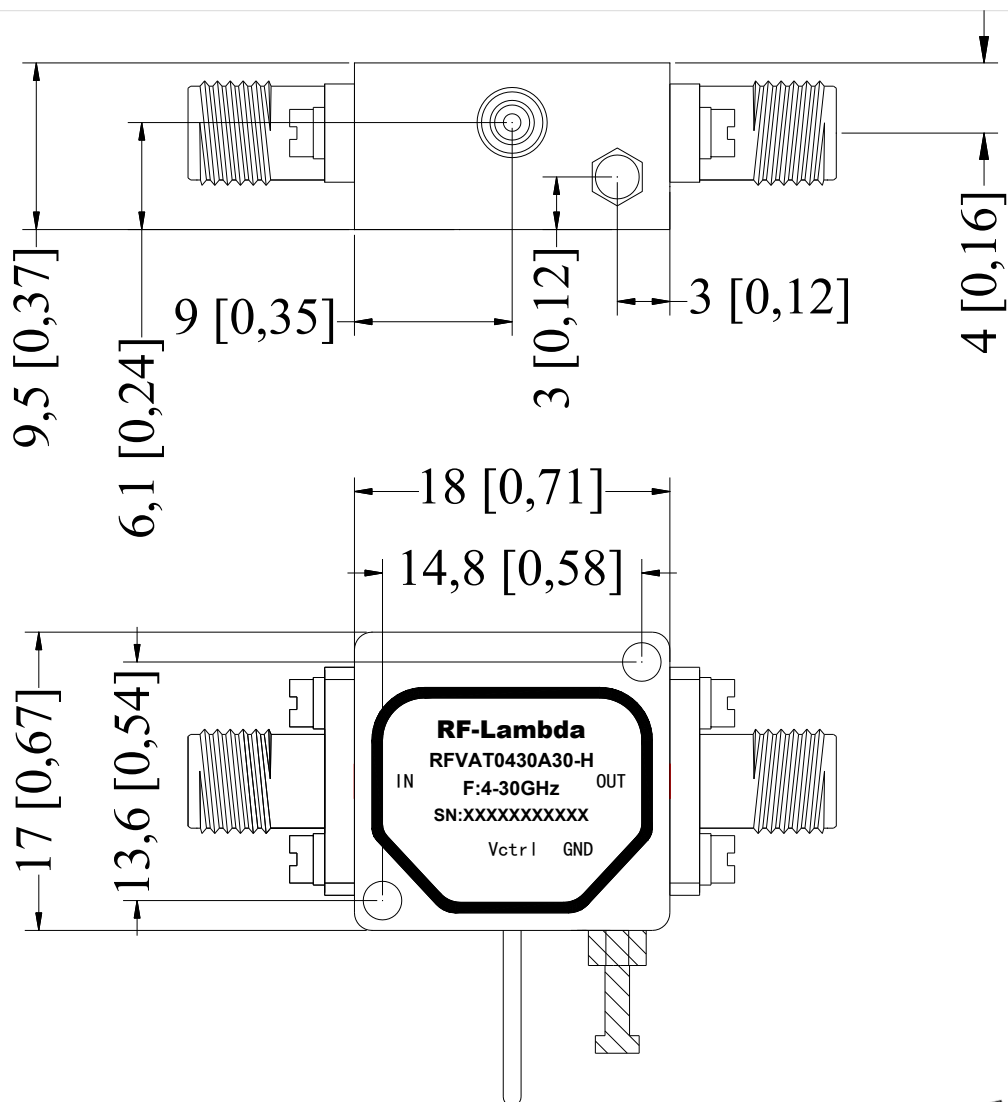
Speed



Speed

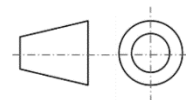


Outline Drawing



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
RFVAT0430A30-H	Input Connector 2.92mm-Female and Output Connector 2.92mm-Female	4GHz-30GHz Voltage Control Attenuator

Important Notice

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