



Absorptive Digital Control Attenuator 1 - 18GHz



Features

- Ultra Wide Band Operation 1-18GHz
- 1dB LSB Steps to 63dB
- Single Positive Control Line Per Bit
- Customization available upon request

Electrical Specifications, $T_A = +25\text{ }^\circ\text{C}$, $V_{dd} = +5\text{V}$, $V_{ss} = -5\text{V}$ & $V_{CTL} = 0 / +5\text{V}$

Description	PN: RFDAT0812G6A			
	Absorptive Digital Attenuator			
Parameters	Min	Typ.	Max	Units
Frequency Range	1		18	GHz
Attenuation Range			63	dB
Attenuation Flatness: (Referenced to Insertion Loss)		± 3.0		dB
Control Bits			6	Bit
Control Step size	1			dB
Insertion Loss		7.3	7.8	dB
Insertion Loss Temperature Coefficient		0.005		dB/ $^\circ\text{C}$
Input VSWR (All Atten. States)		1.6	2.0	:1
Output VSWR (All Atten. States)		1.6	2.0	:1
Input 0.1 dB Compression Point ($P_{o.1dB}$)		30		dBm
IP ₃ Input		45		dBm
Switching Speed		150		ns
Weight		1.41		ounces
Impedance		50		Ω
Bias Current (+5V/-5V)		130/130		mA
Input / Output Connectors	SMA - Female			
Interface and Control Connector	MICRO-D ₉ (Female)			
Finish	Gold Plated			
Material	Aluminum			
Sealing	Hermetically Sealed (Optional)			



Absolute Maximum Ratings

Biasing	+5V±10%/-5V±10%
TTL Control Voltage	0~0.8V / 2.8~5V

Ordering Information

Part No.	ECCN	Description
RFDAT0118G6A	EAR99	1-18GHz Digital Control Attenuator

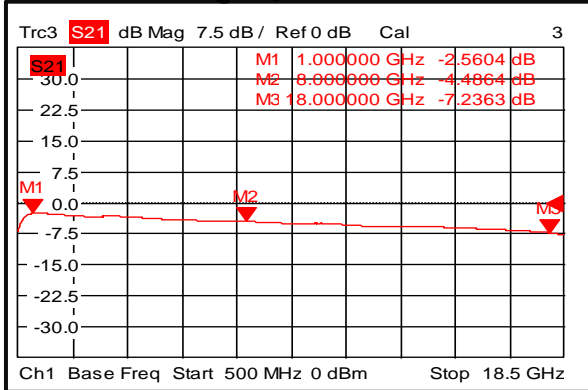
Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-40°C~+85°C
Storage Temperature		-55°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & 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	MIL-STD-883 (For Hermetically Sealed Units)

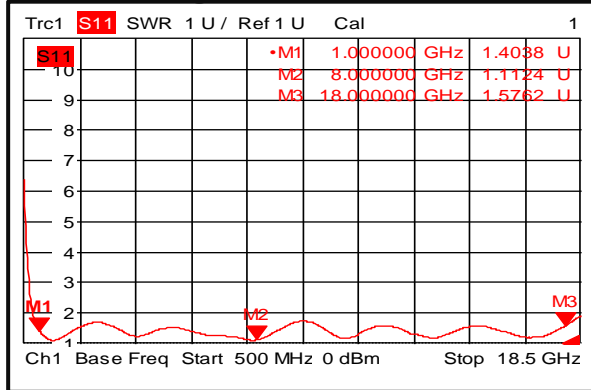


Typical Performance Plots

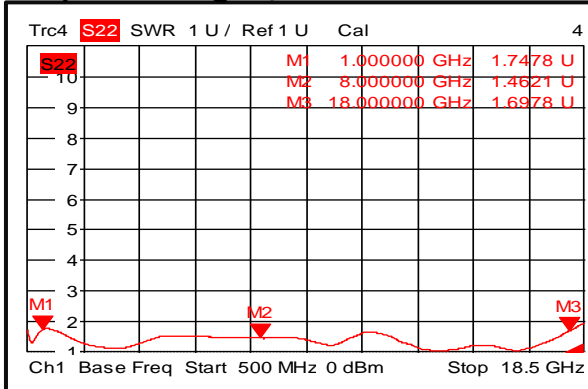
Insertion Loss @+25°C



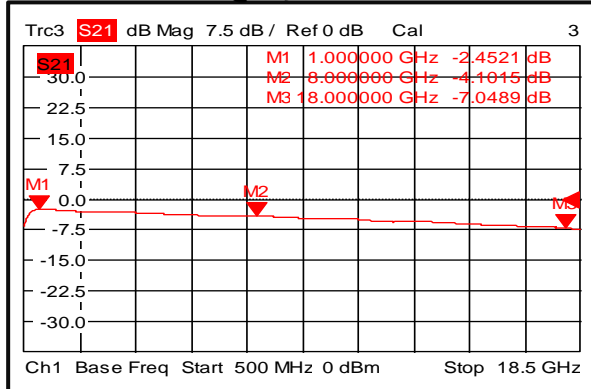
Input VSWR @+25°C



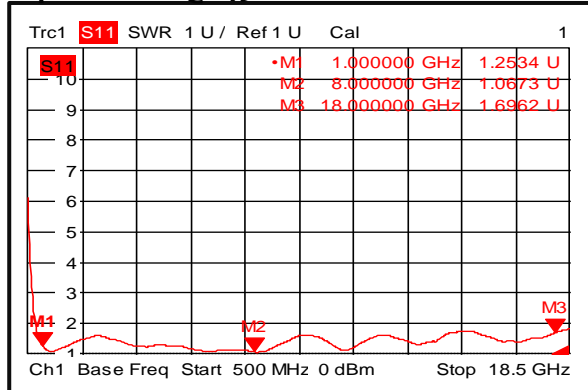
Output VSWR @+25°C



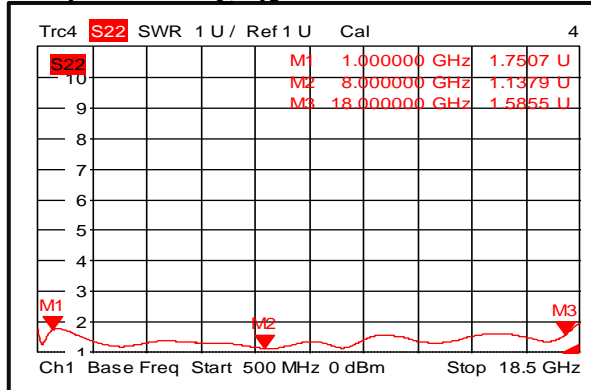
Insertion Loss @-45°C



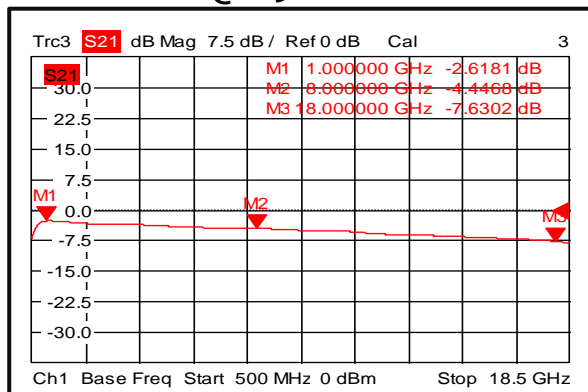
Input VSWR @-45°C



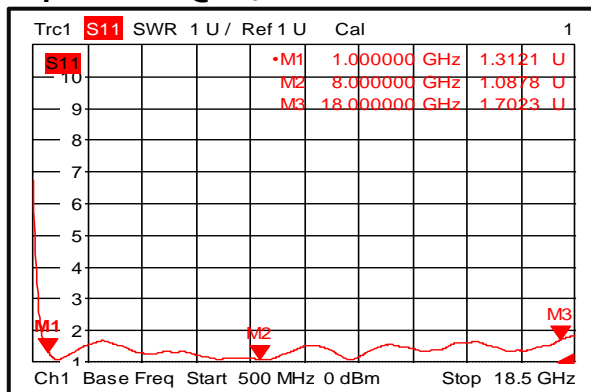
Output VSWR @-45°C



Insertion Loss @+85°C

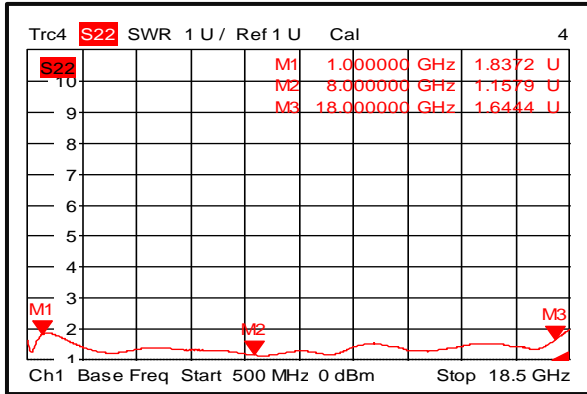


Input VSWR @+85°C

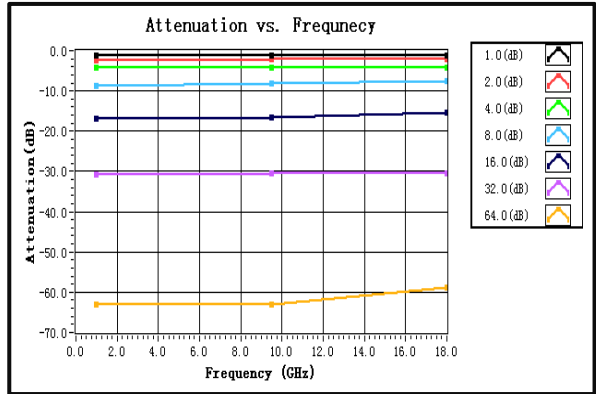




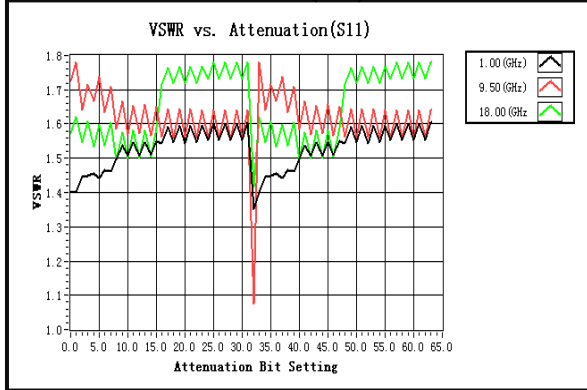
Output VSWR @+85°C



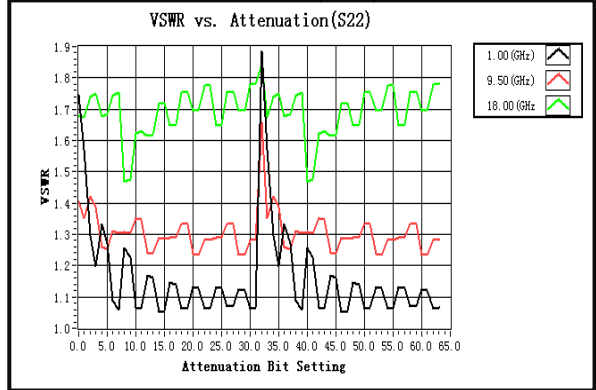
Attenuation vs. Frequency



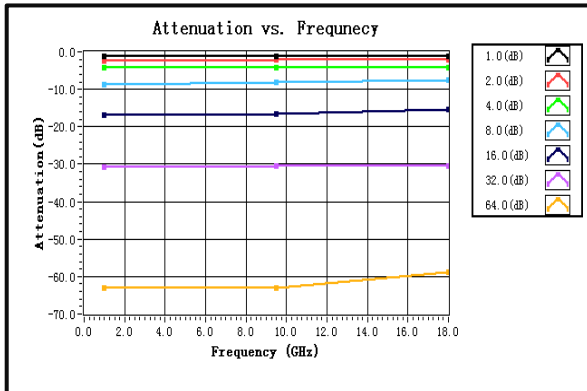
VSWR vs. Attenuation(S11)



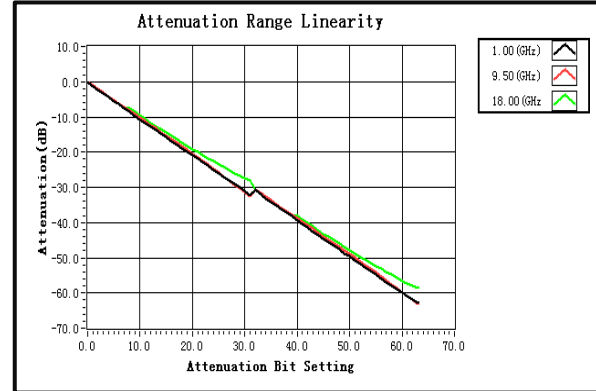
VSWR vs. Attenuation(S22)



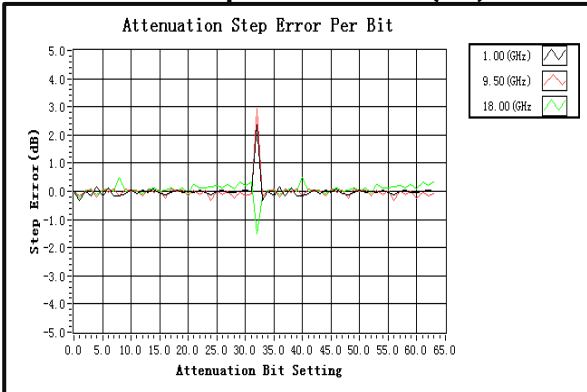
Attenuation Flatness vs. Frequency



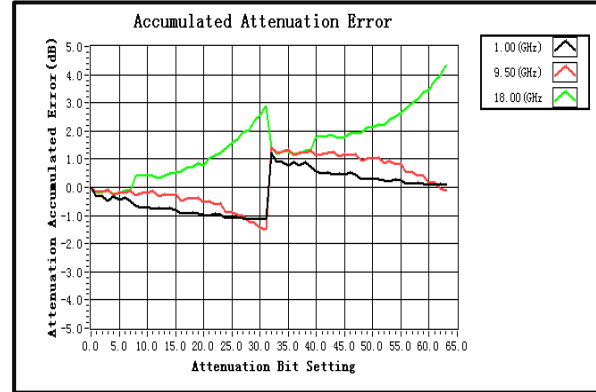
Attenuation Range Linearity



Attenuation Step Error Per Bit (dB)



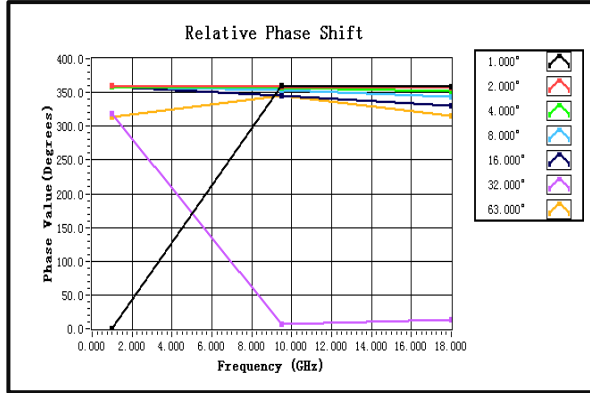
Accumulated Attenuation Error (dB)



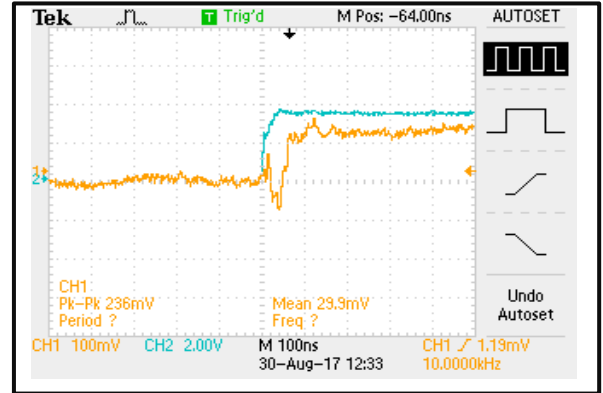
Absorptive Digital Control Attenuator 1 - 18GHz



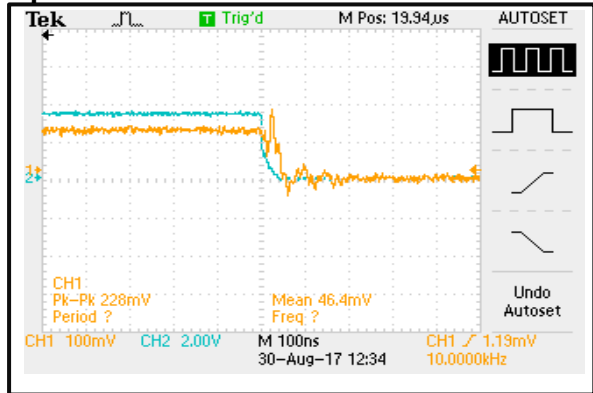
Relative Phase Shift



Speed



Speed

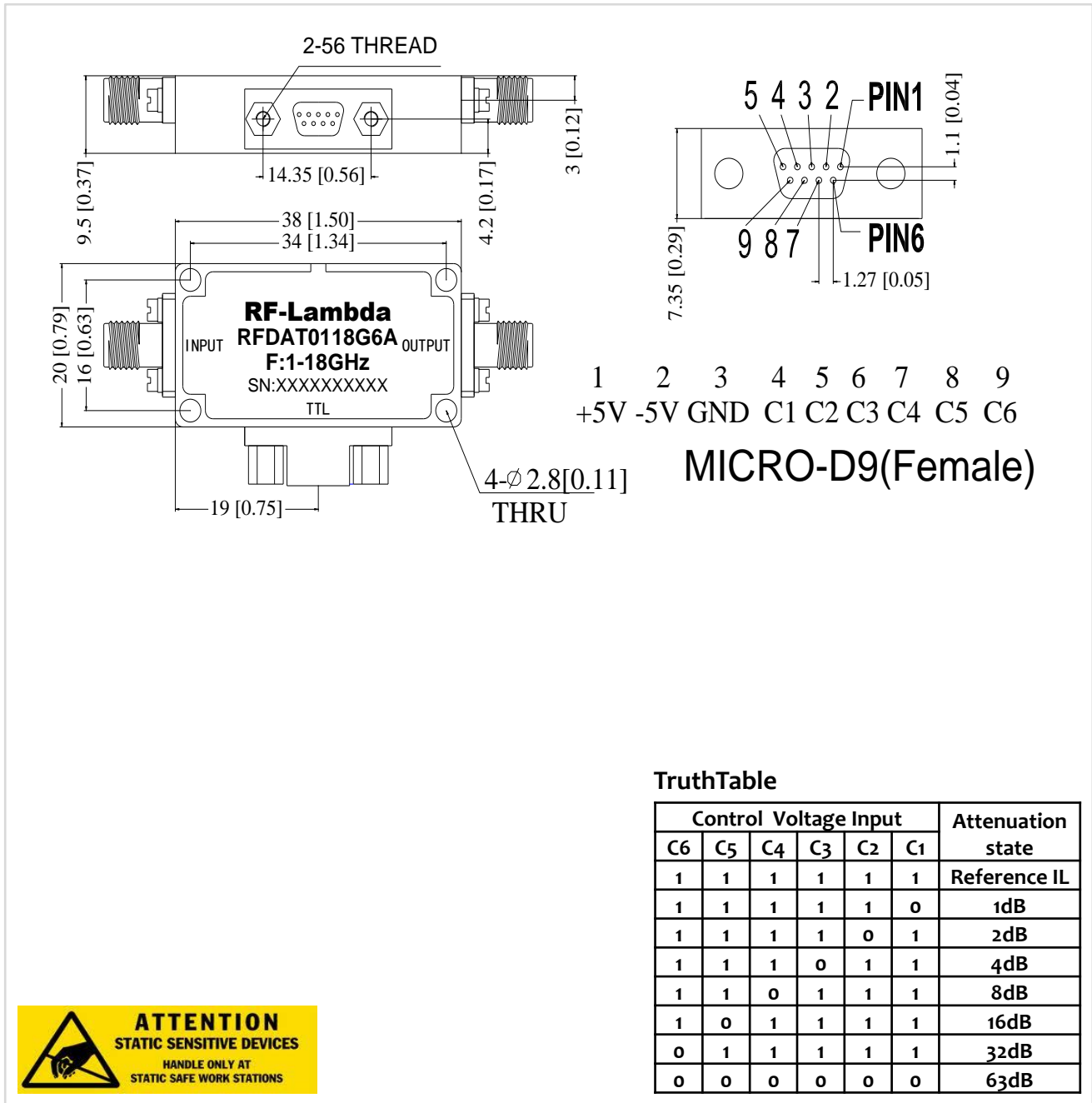


Absorptive Digital Control Attenuator 1 - 18GHz



Outline Drawing:

All Dimensions in mm [inches]



Important Notice

The information contained herein is believed to be reliable. RF-Lambda makes no warranties regarding the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for any of the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for RF-Lambda products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information. RF-Lambda products are not warranted or authorized for use as critical components in medical, life-saving, or life sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.

Absorptive Digital Control Attenuator 1 - 18GHz