



Absorptive Digital Control Attenuator 1-18GHz



Features

- Ultra Wide Band Operation 1-18GHz
- 0.5dB LSB Steps to 127.5dB
- Single Positive Control Line Per Bit
- Customization available upon request

Electrical Specifications, TA = +25° C, With Vdd = +5V, Vss = -5V & VCTL = 0/ +5V

Description	PN: RFDAT0118G8A						
	Absorptive Digital Attenuator						
Parameters	Min	Typ.	Max	Min	Typ.	Max	Units
Frequency Range	1~9			9~18			GHz
Insertion Loss		8	9		11.5	13	dB
Insertion Loss Temperature Coefficient		0.01			0.01		dB/°C
Attenuation Flatness: (Referenced to Insertion Loss)			±3			±5	dB
Input VSWR(All Atten. States)		1.9	2		1.9	2	ratio
Output VSWR (All Atten. States)		1.9	2		1.9	2	ratio
Input Power for 0.1 dB Compression		25			25		dBm
IM3		43			43		dBc
Switching Speed	200						ns
Weight	3.5						ounces
Impedance	50						Ω
Biasing(+5V/-5V)	140/140						mA
Input /Output Connector	SMA-Female(Standard)						
Control PIN	MICRO-D15						
Finishing	Gold Plating						
Material	Aluminum						
Seal	Hermetically Sealed (optional)						



RF-LAMBDA

LEADER OF BROADBAND SOLUTIONS

RFDAT0118G8A

Absolute Maximum Ratings

Biasing	+5V±10%/-5V±10%
TTL Control Voltage	0~0.8V/2~5V
RF Input power	+25dBm
Operating Temperature(°C)	-45 ~ +85
Storage Temperature(°C)	-50 ~ +125

Ordering Information

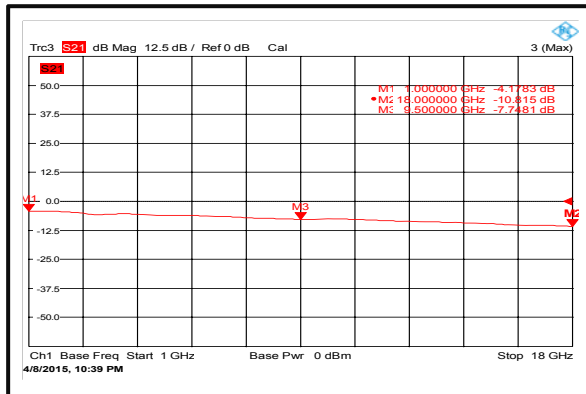
Part No	ECCN	Description
RFDAT0118G8A	EAR99	1-18GHz Digital Control Attenuator

Environment specifications

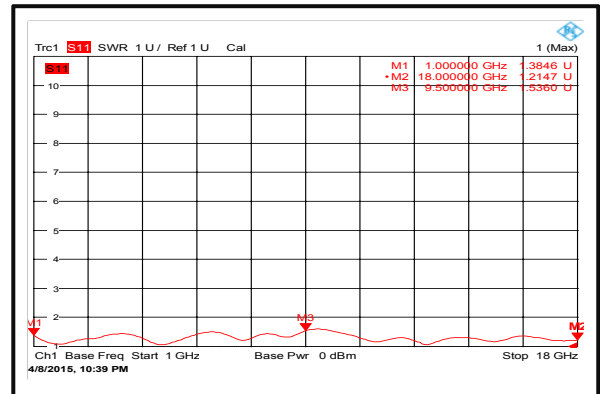
Operational Temperature (°C)	-45 ~ +85
Storage Temperature (°C)	-50 ~ +125
Altitude	30,000 ft. (Epoxy Seal Controlled environment) 60,000 ft 1.0psi min (Hermetically Seal Un-controlled environment) (Optional)
Vibration	25g rms (15 degree 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35°C, 95%RH at 40°C
Shock	20G for 11msc half sin wave, 3 axis both directions

Typical performance plots

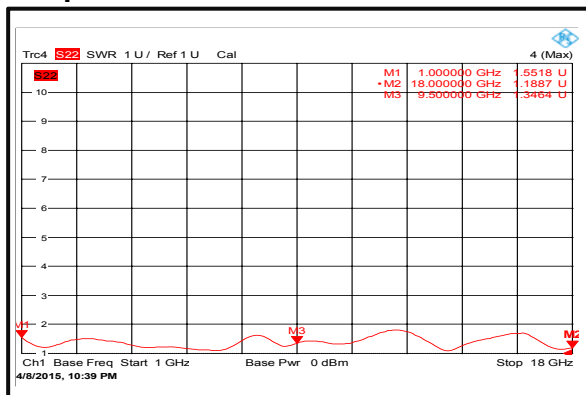
Insertion Loss



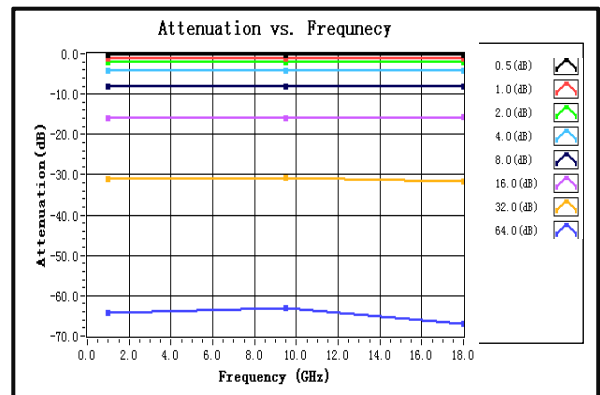
Input VSWR



Output VSWR



Attenuation vs. Frequency



Absorptive Digital Control Attenuator 1-18GHz

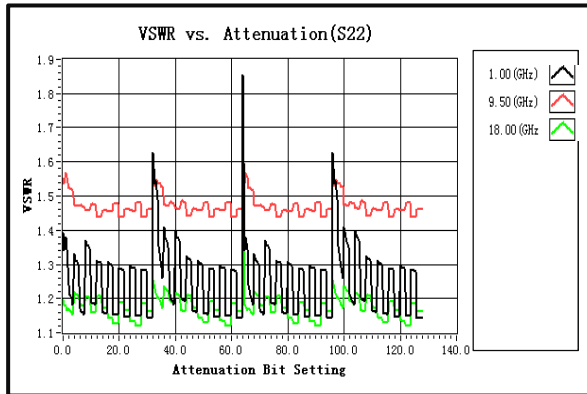


RF-LAMBDA

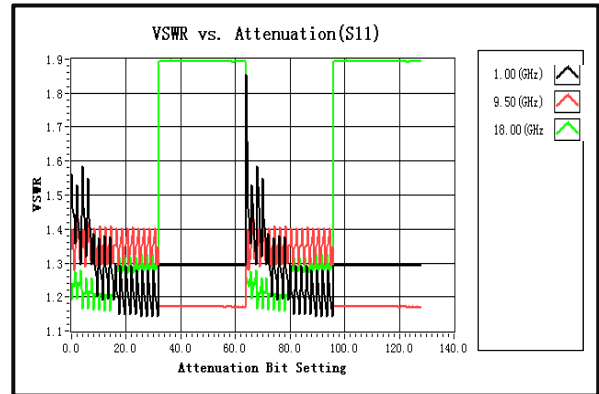
LEADER OF BROADBAND SOLUTIONS

RFDAT0118G8A

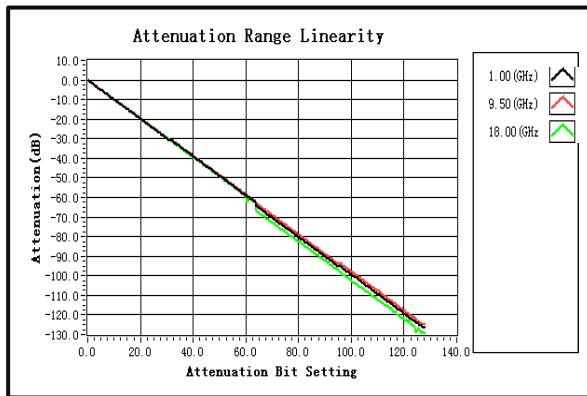
VSWR vs. Attenuation



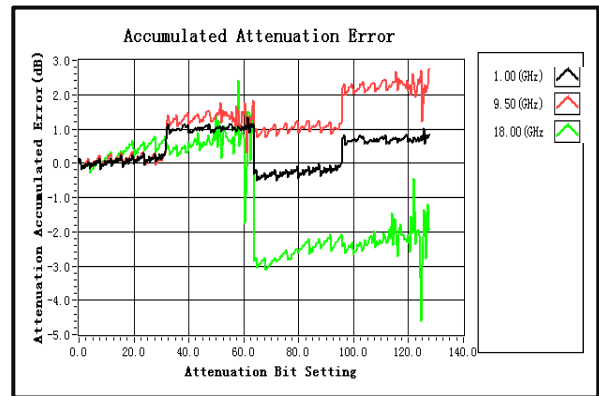
VSWR vs. Attenuation



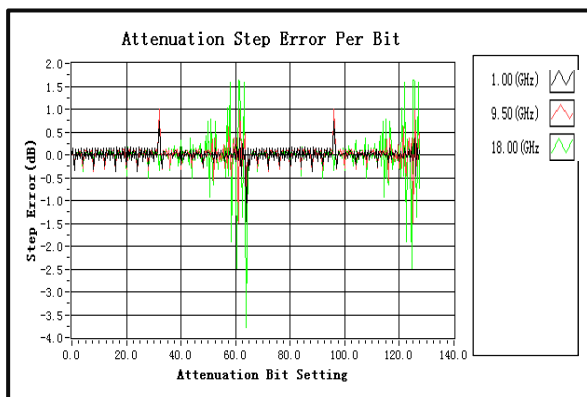
Attenuation Range Linearity



Accumulated Attenuation Error



Attenuation Step Error Per Bit



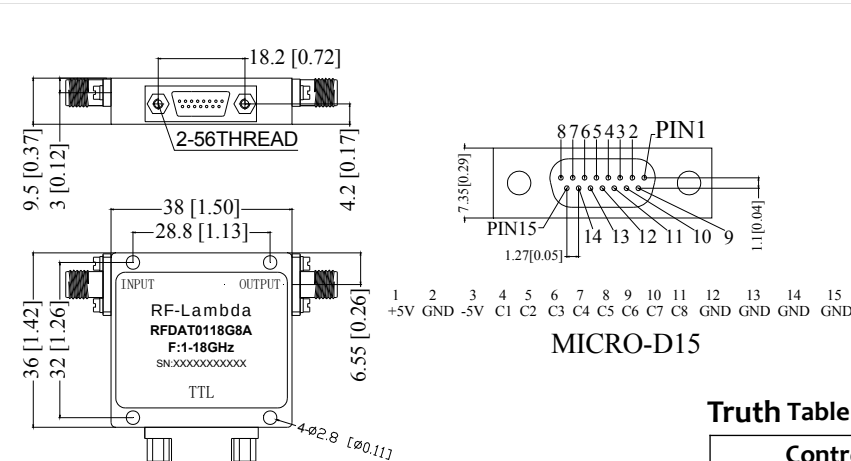
2nd Harmonic Wave output Power

Absorptive Digital Control Attenuator 1-18GHz



Outline Drawing:

All Dimensions in mm (inches)



Truth Table

Control Voltage Input								Attenuation state
C8	C7	C6	C5	C4	C3	C2	C1	
1	1	1	1	1	1	1	1	Reference IL
1	1	1	1	1	1	1	0	0.5dB
1	1	1	1	1	1	0	1	1dB
1	1	1	1	1	0	1	1	2dB
1	1	1	1	0	1	1	1	4dB
1	1	1	0	1	1	1	1	8dB
1	1	0	1	1	1	1	1	16dB
1	0	1	1	1	1	1	1	32dB
0	1	1	1	1	1	1	1	64dB
0	0	0	0	0	0	0	0	127.5



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.