



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RFDAT0812G6A

Absorptive Digital Control Attenuator 8-12GHz



Features

- Wide Band Operation 8-12GHz
- 1dB LSB Steps to 63dB
- Single Positive Control Line Per Bit
- Customization available upon request

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

Description	PN: RFDAT0812G6A			
	Absorptive Digital Attenuator			
Parameters	Min	Typ	Max	Units
Frequency Range	8		12	GHz
Attenuation Range			63	dB
Attenuation Flatness: (Referenced to Insertion Loss)		±2		dB
Control Bits			6	Bit
Control Step size	1			dB
Insertion Loss		5.0	6.5	dB
Insertion Loss Temperature Coefficient		0.005		dB/°C
Input VSWR (All States)		1.4	1.8	: 1
Output VSWR (All States)		1.4	1.8	: 1
Input 0.1 dB Compression Point		30		dBm
IP3 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-D9(Female)			
Finishing	Gold Plating			
Material	Aluminum			
Sealing	Hermetically Sealed (optional)			

Absorptive Digital Control Attenuator 8-12GHz



Absolute Maximum Ratings

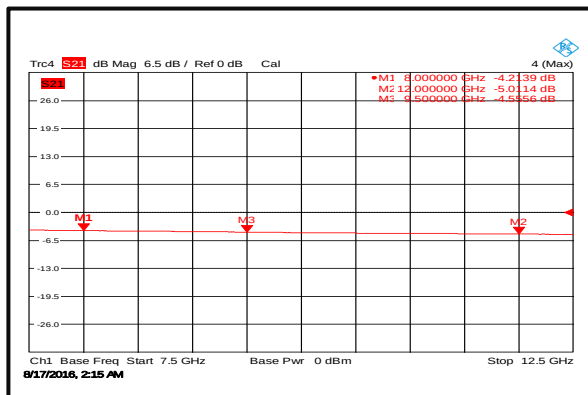
Biasing	+5V±10%/-5V±10%
TTL Control Voltage	0~0.8V / 2~5V
RF Input Power	+30dBm

Ordering Information

Part No.	ECCN	Description
RFDAT0812G6A	EAR99	8-12GHz Digital Control Attenuator

Typical Performance Plots

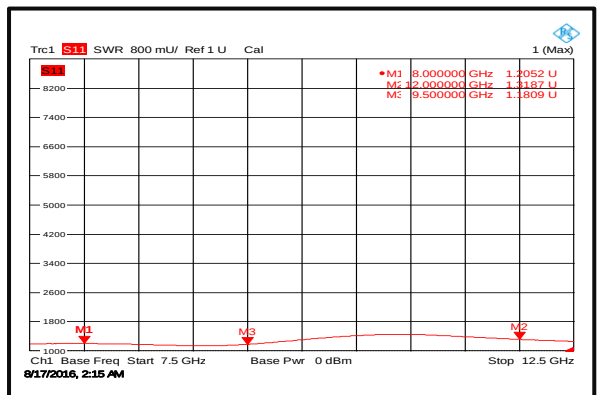
Insertion Loss



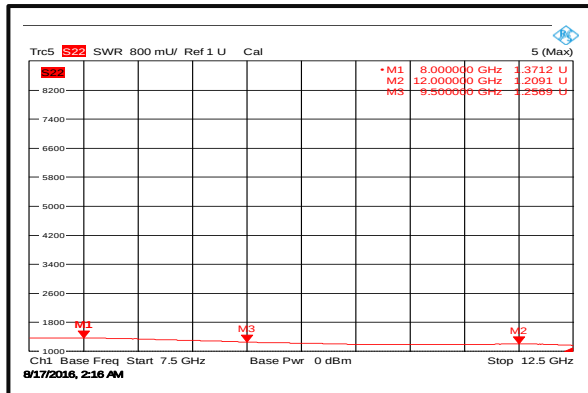
Environmental Specifications

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

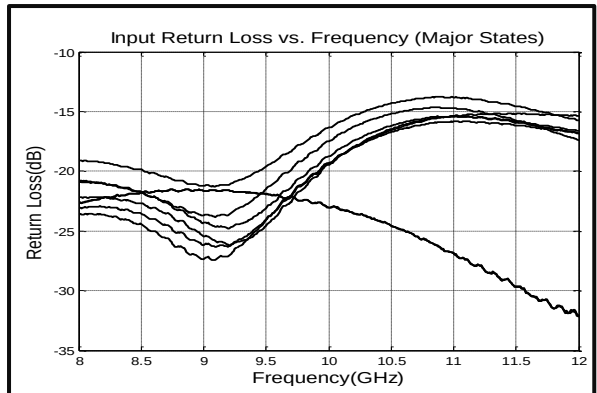
Input VSWR



Output VSWR

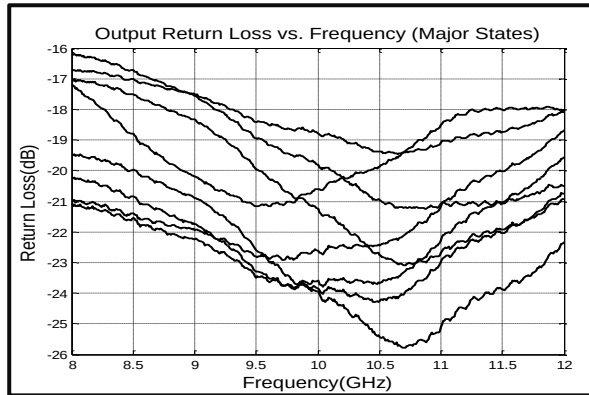


Input Return Loss vs. Frequency

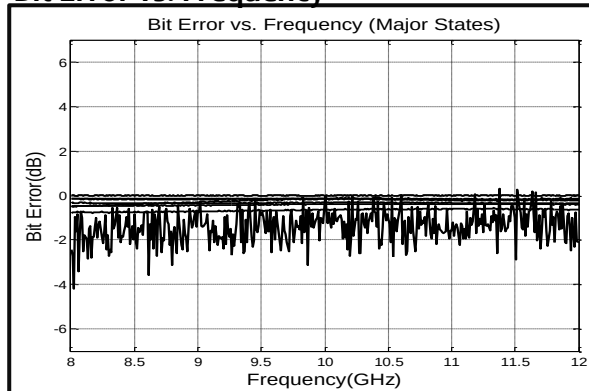




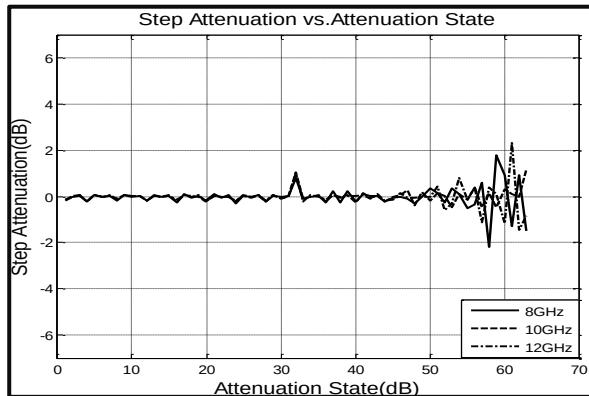
Output Return Loss vs. Frequency



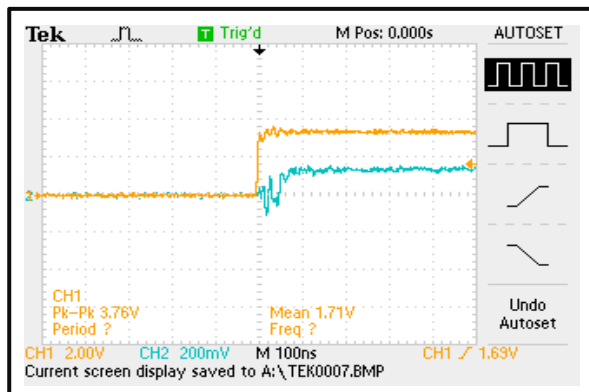
Bit Error vs. Frequency



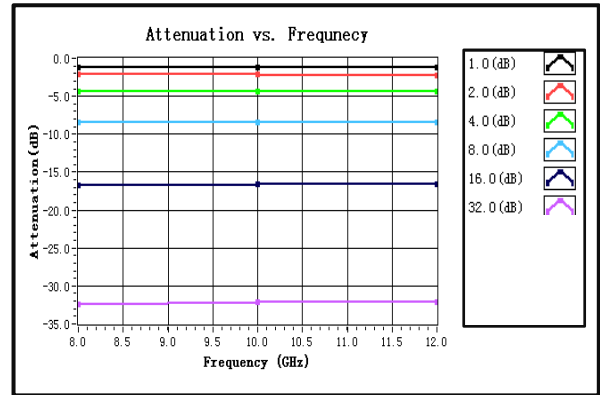
Step Attenuation vs. Attenuation State



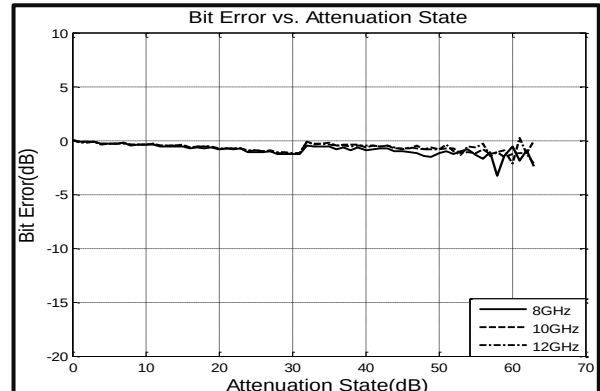
Speed



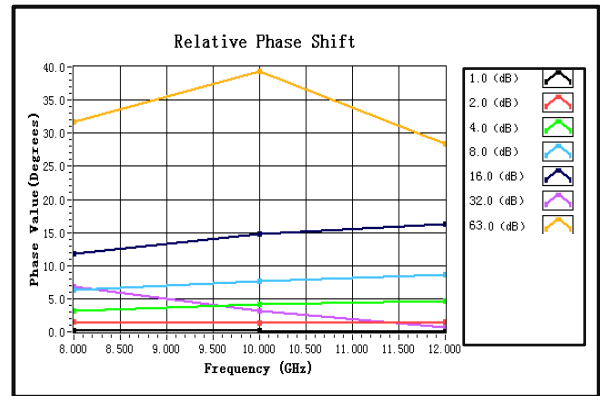
Attenuation Flatness vs. Frequency



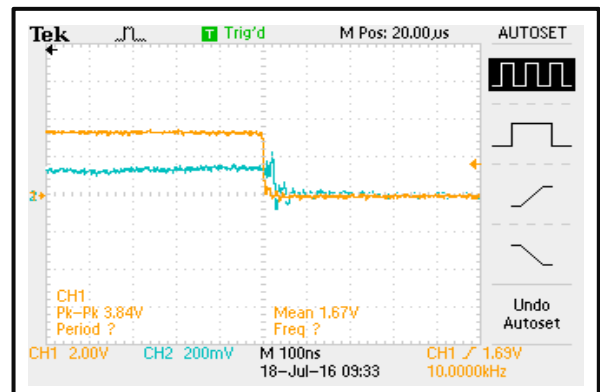
Bit Error vs. Attenuation State



Relative Phase Shift



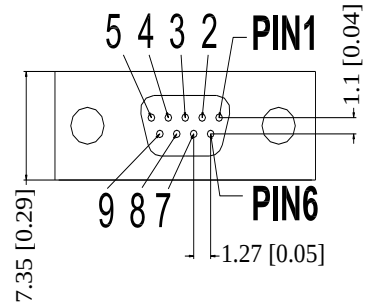
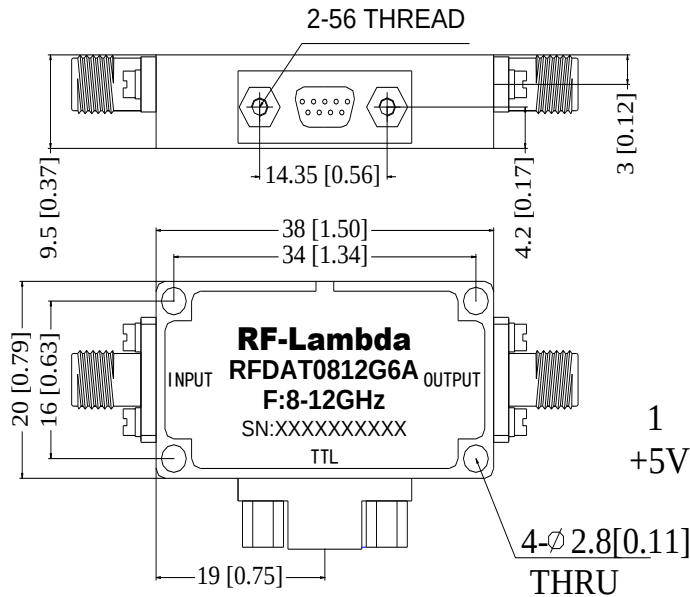
Speed





Outline Drawing:

All Dimensions in mm [inches]



1 2 3 4 5 6 7 8 9
+5V -5V GND C1 C2 C3 C4 C5 C6

MICRO-D9(Female)

TruthTable

Control Voltage Input						Attenuation state
C6	C5	C4	C3	C2	C1	Reference IL
1	1	1	1	1	1	Reference IL
1	1	1	1	1	0	1dB
1	1	1	1	0	1	2dB
1	1	1	0	1	1	4dB
1	1	0	1	1	1	8dB
1	0	1	1	1	1	16dB
0	1	1	1	1	1	32dB
0	0	0	0	0	0	63dB



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