



Absorptive Digital Control Attenuator 0.1 – 40GHz



Features

- Ultra Wide Band Operation 0.1-40GHz
- 1dB LSB Steps to 31dB
- Single Positive Control Line Per Bit
- Customization available upon request

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

Description	PN:RFDAT0040G5A									
	Absorptive Digital Attenuator									
Parameters	Min	Typ	Max	Min	Typ	Max	Min	Typ.	Max	Units
Frequency Range	0.1-18			18-30			30-40			GHz
Attenuation Range	31	32		31	32		31	32		dB
Attenuation Flatness: (Referenced to Insertion Loss)		±1			±1.5			±2.0		dB
Control Bits			5			5			5	Bit
Control Step size		1			1			1		dB
Insertion Loss		4.5	5		6.0	7.5		7.5	8.5	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/°C
Input VSWR(All Atten. States)			1.5			2			2.2	:1
Output VSWR (All Atten. States)			1.5			2			2.2	:1
Input 0.1 dB Compression Point (Po.1dB)			25			25			25	dBm
IP3 Input		43			43			43		dBm
Switching Speed			200			200			200	ns
Weight	1.41									ounces
Impedance	50									Ω
Bias Current (+5V /- 5V)	20/20									mA
Input / Output Connectors	2.92mm-Female									
Interface and Control Connector	MICRO-D9(Female)									
Finishing	Gold Plating									
Material	Aluminum									
Sealing	Hermetically Sealed (optional)									

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Absolute Maximum Ratings

Biassing	+5V±10%/-5V±10%
TTL Control Voltage	0~0.8V/2~5V

Ordering Information

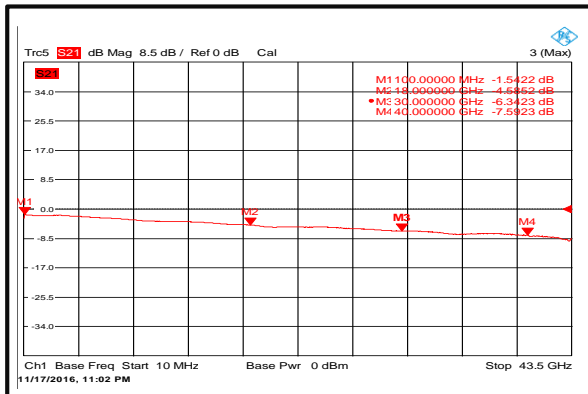
Part No.	ECCN	Description
RFDAT0040G5A	EAR99	0.1-40GHz Digital Control Attenuator

Environmental Specifications

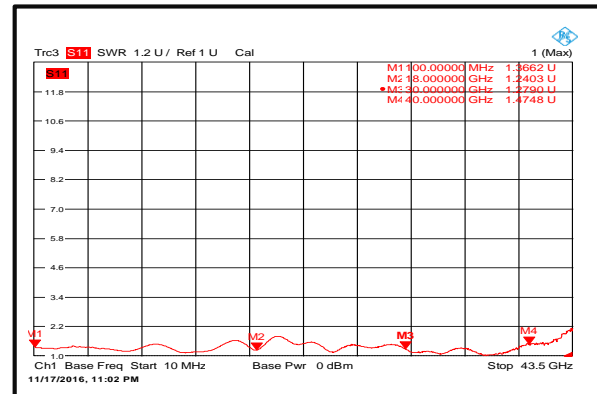
Operational Temperature (°C)	-45 ~ +85
Storage Temperature (°C)	-50 ~ +125
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c,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

Typical Performance Plots

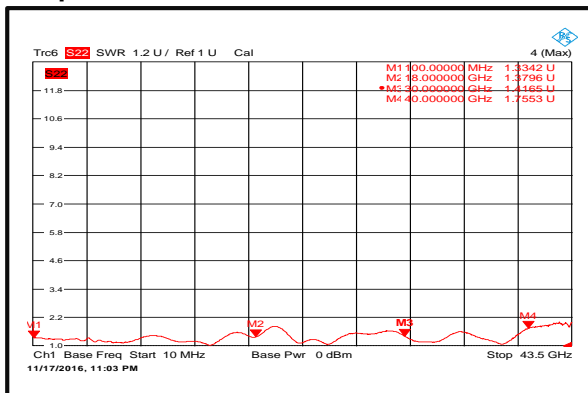
Insertion Loss



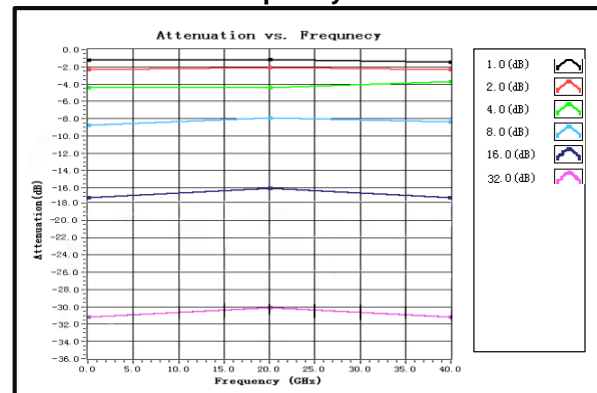
Input VSWR



Output VSWR

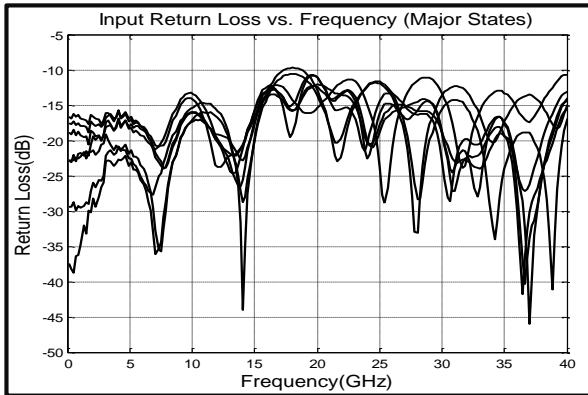


Attenuation vs. Frequency

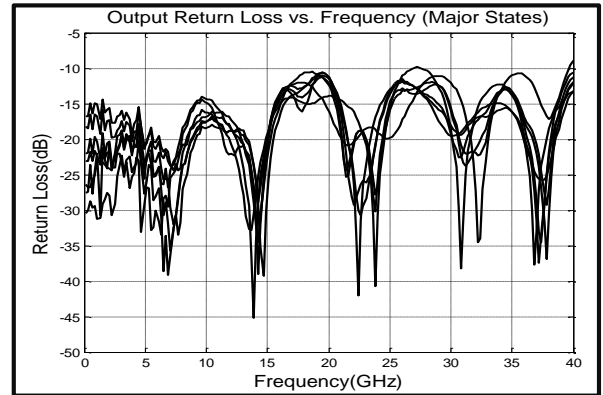




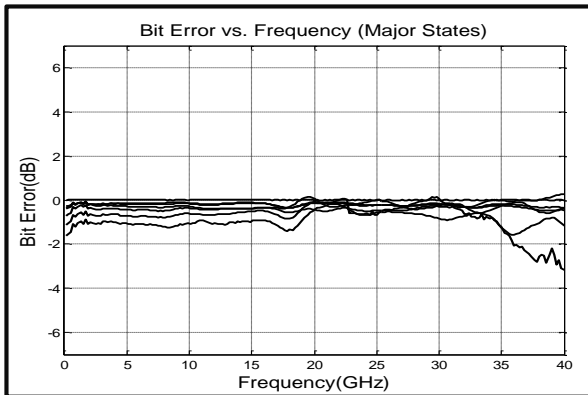
Input Return Loss vs. Frequency



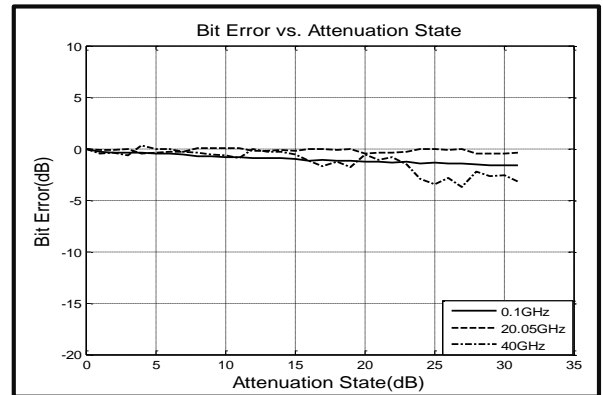
Output Return Loss vs. Frequency



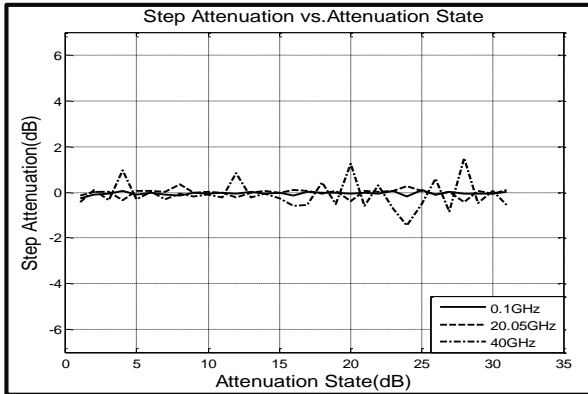
Bit Error vs. Frequency



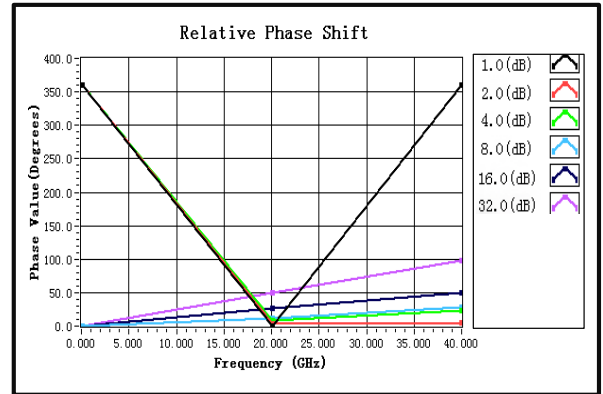
Bit Error vs. Attenuation State



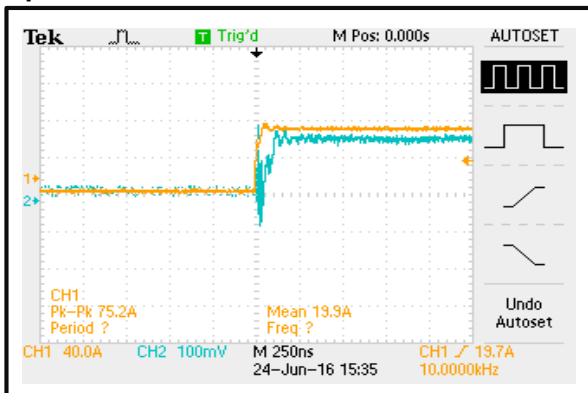
Step Attenuation vs. Attenuation State



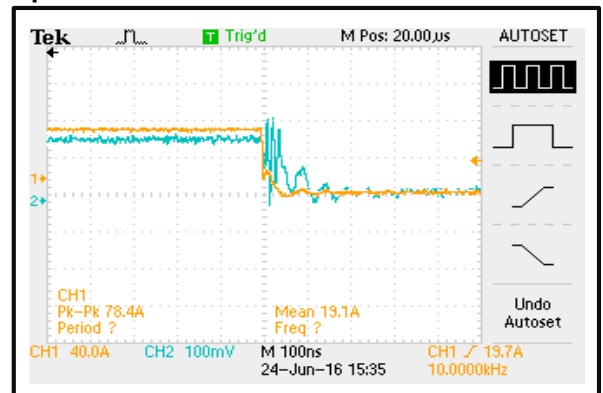
Relative Phase Shift



Speed



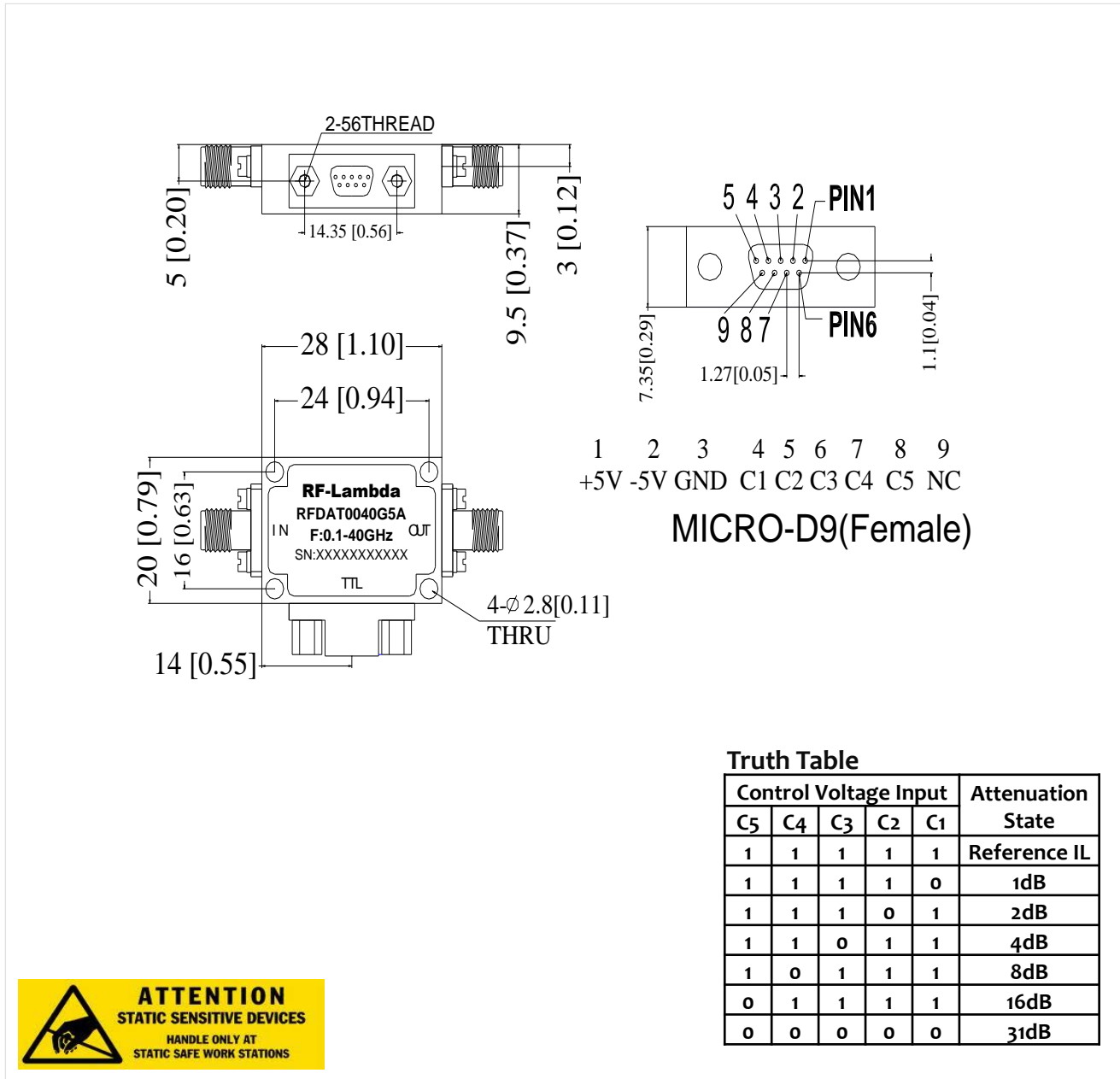
Speed





Outline Drawing:

All Dimensions in mm [inches]



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