Absorptive Digital Control Attenuator 0.01GHz-40GHz

Note: Photo is for illustration purposes only.
Please refer to outline drawing.

Product Description

RFDAT0040G8B is an absorptive digital control attenuator with a frequency range of 0.01 to 40GHz.

The maximum power input of this attenuator is 25dBm. The insertion loss is 8dB with a typical attenuation range of 31.875dB.

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

Features

- Absorptive Digital Control Attenuator
- 0.125dB LSB Steps to 31.875dB
- Single Positive Control Line Per Bit

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=+25ºC) ,Vdd = +5V, VCTL = 0 / +5V

Parameter	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range	0.01		18	18		40	GHz
Attenuation Range		31.875			31.875		dB
Attenuation Flatness: (Referenced to Insertion Loss)		±2.0			±2.0		dB
Control Bits			8			8	Bit
Control Step Size		0.125			0.125		dB
Insertion Loss		6.0			8.5		dB
Insertion Loss Temperature Coefficient		0.005					dB/ °C
Input VSWR (All Atten. States)		2.0			2.5		: 1
Output VSWR (All Atten. States)		2.0			2.5		: 1
Input 0.1 dB Compression Point (P0.1dB)		24			24		dBm
IP3 Input		38			38		dBm
Switching Speed			150Typ.				ns
Bias Current (+5V)			50Typ.				mA
Weight			0.085Max.				lbs.
Impedance			50				Ohms
Input / Output Connectors			SMA-Female (Input) – SMA-Female (Output)				
Interface and Control Connector			MICRO-D15 (Female)				
Package			Epoxy Sealed (Standard)				
			Hermetically Sealed (Optional)				

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Absolute Maximum Ratings

Parameter	Rating
Biasing Voltage	+5V±10%
RF Input Power	+25dBm

Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40ºC to +85ºC (Case Temperature)
Storage Temperature	-50ºC to +105ºC
Thermal Shock	-40ºC → +85ºC (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 +85ºC 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.

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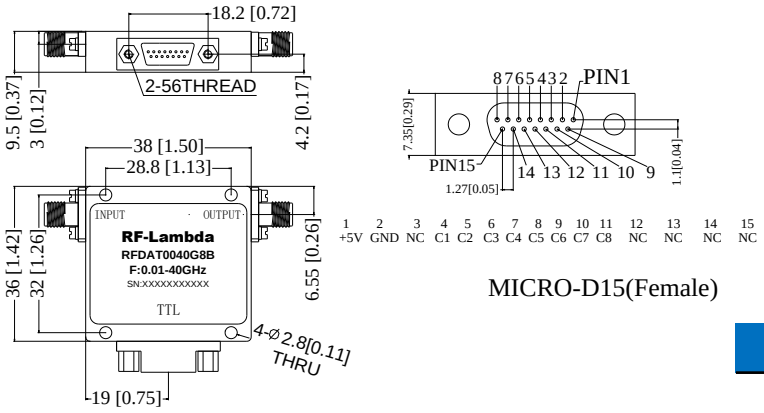
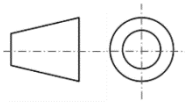
Outline Drawing



MICRO-D15(Female)

Truth Table								
TTL Control Voltage THRESHOLD								Low(0)=0~0.8 V High(1)=2.8~5 V
Control Input TTL								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	0.125dB
1	1	1	1	1	1	0	1	0.25dB
1	1	1	1	1	0	1	1	0.5dB
1	1	1	1	0	1	1	1	1dB
1	1	1	0	1	1	1	1	2dB
1	1	0	1	1	1	1	1	4dB
1	0	1	1	1	1	1	1	8dB
0	1	1	1	1	1	1	1	16dB
0	0	0	0	0	0	0	0	31.875dB



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
RFDAT0040G8B	Standard	0.01GHz-40GHz Digital Control Attenuator

Important Notice

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