Absorptive Digital Control Attenuator
0.1GHz-18GHz

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

Product Description

RFDAT0018G5B is an absorptive digital control attenuator with a frequency range of 0.1 to 18GHz.

The maximum power input of this attenuation is 27dBm. The insertion loss is 6.0dB with a typical attenuation range of 15.5dB.

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

Features

- Absorptive Digital Control Attenuator
- 0.5dB LSB Steps to 15.5dB
- 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, Vss = -5V, VCTL = 0 / +5V

Parameter	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range	0.1		14	14		18	GHz
Attenuation Range	14.0	15.5		14.0	15.5		dB
Attenuation Flatness: (Referenced to Insertion Loss)		±0.6			±0.6		dB
Control Bits			5				Bit
Control Step Size		0.5			0.5		dB
Insertion Loss		5.0	5.5		6.0	6.5	dB
Insertion Loss Temperature Coefficient		0.03			0.03		dB/ °C
Input VSWR (All Atten. States)		1.4	1.6			1.4	: 1
Output VSWR (All Atten. States)		1.6	2.0			1.4	: 1
Input 0.1dB Compression Point (P0.1dB)		27			27		dBm
IP3 Input(0dBm)		43			43		dBm
Switching Speed 50% CTRL* to 90% or 10%			100 Typ.				ns
Bias Current (+5V /- 5V)			10/10 Max.				mA
Weight			0.04 Max.				lbs.
Impedance			50				Ohms
Input / Output Connectors	SMA-Female (Input) – SMA-Female (Output)						
Interface and Control Connector	MICRO-D9 (Female)						
Package	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

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Absolute Maximum Ratings

Parameter	Rating
Biasing Voltage	+5V±10%/-5V±10%
RF Input Power	+27dBm

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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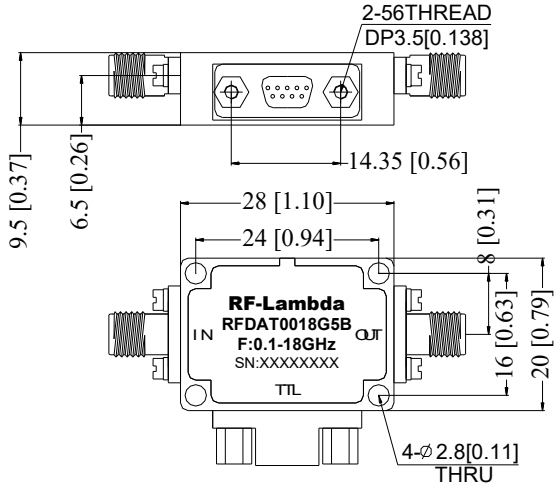
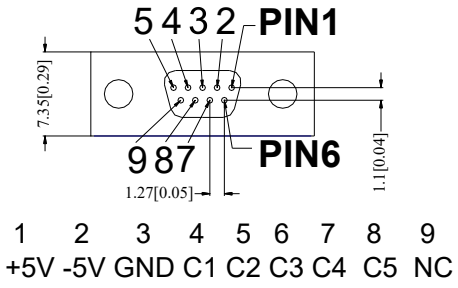
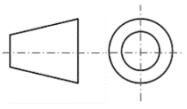
Outline Drawing





Truth Table						
TTL Control Voltage THRESHOLD						Low(0)=0~0.8V High(1)=2.8~5V
Control Input TTL						Attenuation State
C5	C4	C3	C2	C1		
1	1	1	1	1		Reference IL
1	1	1	1	0		0.5dB
1	1	1	0	1		1dB
1	1	0	1	1		2dB
1	0	1	1	1		4dB
0	1	1	1	1		8dB
0	0	0	0	0		15.5dB

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
RFDAT0018G5B	Connectors SMA-Female	0.1GHz-18GHz Digital Control Attenuator

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