

Reflective Digital Control Attenuator 12GHz-18GHz



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

Features

- Reflective Digital Control Attenuator
- 1dB LSB Steps to 63dB
- Single Positive Control Line Per Bit

Product Description

RFDAT1218G6R is a reflective digital control attenuator with a frequency range of 12 to 18GHz.

The power input of this attenuation is 30dBm typical. The insertion loss is 2.0dB with a typical attenuation range of 63dB.

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

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 ($T_A = +25^\circ\text{C}$), $V_{dd} = +5\text{V}$ & $V_{CTL} = 0 / +5\text{V}$

Parameter	Min	Typ	Max	Units
Frequency Range	12		18	GHz
Attenuation Range		63		dB
Attenuation Flatness (Referenced to Insertion Loss)		± 2.0		dB
Control Bits		6		Bit
Control Step Size		1.0		dB
Insertion Loss		2.0	2.5	dB
Insertion Loss Temperature Coefficient		0.005		dB/ °C
Input VSWR (IL State)		1.5	2.0	: 1
Output VSWR (IL State)		1.5	2.0	: 1
Input 0.1dB Compression Point (P0.1dB)		30		dBm
IP3 Input		43		dBm
Switching Speed		800 Typ.		us
Bias Current (+5V)		35 Typ.		mA
Weight		/ Max.		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)			

Absolute Maximum Ratings

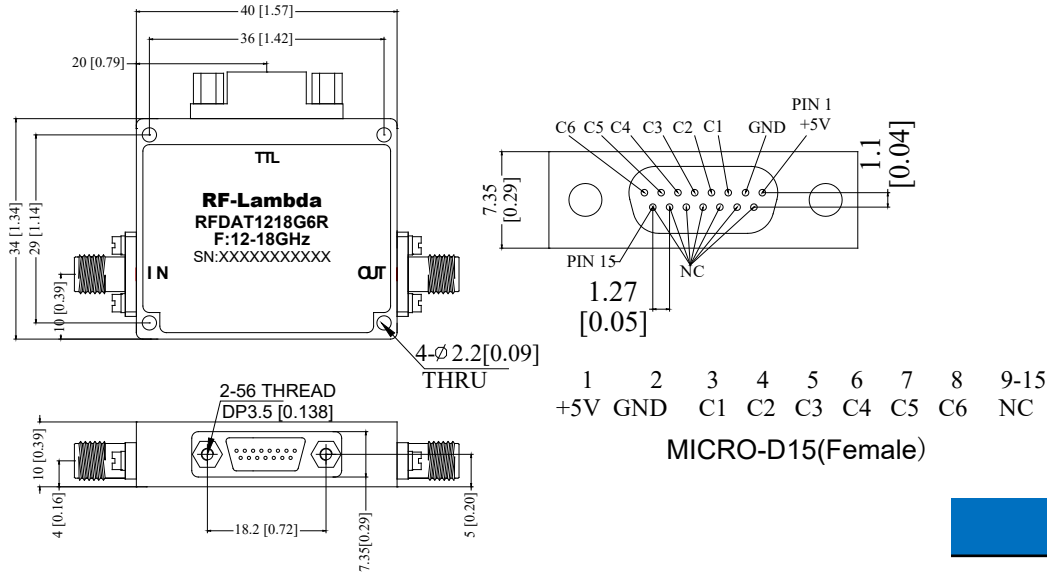
Parameter	Rating
Biasing Voltage	+6V
RF Input Power	+30dBm

Environmental Specifications and Test Standards

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

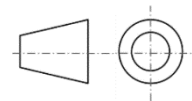
Outline Drawing



Truth Table						
TTL Control Voltage THRESHOLD						
Low(0)=0~0.8V						
High(1)=2.8~5V						
Control Input TTL						Attenuation State
C6	C5	C4	C3	C2	C1	
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

Notes:

1. Package Material: Aluminum
2. Plating: 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
RFDAT1218G6R	Standard	12-18GHz Digital Control Attenuator

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