



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RFDAT1840G8A

Absorptive Digital Control Attenuator 18 - 40GHz



Note: The photo is for illustration purposes only.
Please refer to the outline drawing.

Features

- Wide Band Operation 18-40GHz
- 0.5dB LSB Steps to 127.5dB
- Single Positive Control Line Per Bit
- Customization available upon request

Typical Applications

- Wireless Infrastructure
- Military and Aerospace
- Test and Measurement

Absorptive Digital Control Attenuator 18 - 40GHz

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: RFDAT1840G8A						
	Absorptive Digital Attenuator						
Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	18~30			30~40			GHz
Attenuation Range		127.5			127.5		dB
Insertion Loss		24			29		dB
Insertion Loss Temperature Coefficient		0.01			0.01		dB/ $^\circ\text{C}$
Attenuation Flatness: (Referenced to Insertion Loss)		± 3.0			± 5.0		dB
Control Bits			8			8	Bit
Control Step Size	0.5			0.5			dB
Input VSWR(All Atten. States)			2.5			2.5	: 1
Output VSWR (All Atten. States)			2.5			2.5	: 1
Input 0.1dB Compression Point (Po.1dB)		25			25		dBm
IP3 Input		45			45		dBm
Switching Speed	100Max.						ns
Weight	/						ounces
Impedance	50						Ω
Bias Current (+5V / - 5V)	80/80 Max.						mA
Input / Output Connectors	2.92mm-Female						
Interface and Control Connector	MICRO-D15 (Female)						
Finish	Gold Plated						
Material	Aluminum						
Sealing	Hermetically Sealed (Optional)						



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Absolute Maximum Ratings

Biasing	+5V±10%/-5V±10% @25°C
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Ordering Information

Part No.	Description
RFDAT1840G8A	18-40GHz Digital Control Attenuator

Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-40°C~+85°C
Storage Temperature		-50°C~+105°C
Thermal Shock		1 Hour@ -40°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & 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	MIL-STD-883 (For Hermetically Sealed Units)

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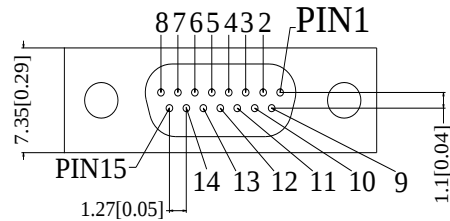
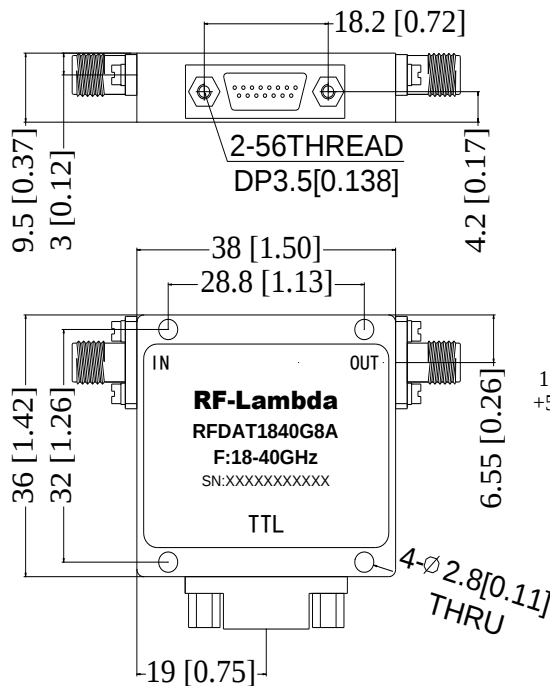
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Outline Drawing:

All Dimensions in mm [inches]



1 +5V 2 GND 3 -5V 4 C1 5 C2 6 C3 7 C4 8 C5 9 C6 10 C7 11 C8 12 GND 13 GND 14 GND 15 GND

MICRO-D15(Female)

Truth Table

TTL Control Voltage								Low(0)=0~0.8V
								High(1)=2.8~5V
Control Voltage Input								Attenuation state
C8	C7	C6	C5	C4	C3	C2	C1	Reference IL
1	1	1	1	1	1	1	1	Reference IL
1	1	1	1	1	1	1	0	0.5dB
1	1	1	1	1	1	0	1	1dB
1	1	1	1	1	0	1	1	2dB
1	1	1	1	0	1	1	1	4dB
1	1	1	0	1	1	1	1	8dB
1	1	0	1	1	1	1	1	16dB
1	0	1	1	1	1	1	1	32dB
0	1	1	1	1	1	1	1	64dB
0	0	0	0	0	0	0	0	127.5dB



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