

TTL Controlled Programmable Attenuator, 31 dB, from 100 MHz to 40 GHz, 1 dB Steps, 2.92mm Female



PE70A8008

Features

- Ultra Wide Band 5 Bit Solid State Programmable Attenuator
- Frequency Range 100 MHz to 40 GHz
- Attenuation Range: 0 to 31 dB in 1 dB steps
- Attenuation Steps: 1, 2, 4, 8, 16 dB
- Insertion Loss 6 dB typ
- Attenuation Accuracy +/- 2.5 dB typ
- Switching Speed 200 nsec typ
- Max RF Input Power +25 dBm
- DC Voltage +5, -5 Vdc
- DC Current 10 mA typ
- 50 Ohm Design
- -40°C to +85°C Operating Temperature
- 2.92 Female Connectors
- Micro D-Sub 9 Pin Female Connector for DC and TTL controls
- Rugged Mil Grade Package Design

Applications

- Military & Commercial Communication Systems
- Microwave Radio Systems
- Radar Systems
- Test & Measurement
- Research & Development
- RF Wideband Front Ends

Description

The PE70A8008 is a ultra wide band 5 Bit Solid State Programmable Attenuator which operates over the frequency range of 100 MHz to 40 GHz. The 50 ohm design supports TTL control logic and has an attenuation range that covers 0 to 31 dB in 1 dB steps. Attenuation steps are 1, 2, 4, 8, and 16 dB. Insertion loss is 6 dB typical with a maximum RF input power of +25 dBm. Additional typical performance includes +/- 2.5 dB attenuation accuracy and switching speed of 200 nsec. Operational temperature range is -40°C to +85°C, and the design requires two DC supplies, +5 Vdc and -5Vdc, both at 10 mA nominal. The compact and rugged package design supports 2.92mm female RF input/output connectors, and a micro D-Sub 9 pin female connector Socket for DC and TTL controls.

Electrical Specifications (Values at +25°C, sea level)

Description	Min	Typ	Max	Unit
Frequency Range	0.1		40	GHz
Impedance		50		Ohms
Insertion Loss		6	9	dB
VSWR		1.7:1		
Survial Power Average -40 to +85 deg C				
DC Voltage		+5		Vdc
DC Current	10			mA
TTL Low for Thru Path		+2 to +5		Vdc
TTL High for Attenuation		+0 to +0.8		Vdc
Step Size		1		dB
Switching Time		200	500	ns

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	0.1-10	10-18	18-33	33-40		GHz
Insertion Loss, Typ	3.5	5	6.8	8.5		dB

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Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
VSWR, Max	1.8	1.8	2	2.4		
VSWR, Typ	1.5	1.6	1.8	1.9		

Electrical Specification Notes:

1, 2, 4, 8, 16 dB bit Attenuation Steps, Guaranteed Monotonic, DC Voltage not allowed on RF Connectors

Performance by Frequency

Accuracy of Attenuation	Frequency	Maximum		
1-10 dB	0.1-18 GHz	± 0.75 dB		
	18-40 GHz	± 1.00 dB		
11-15 dB	0.1-18 GHz	± 1.00 dB		
	18-40 GHz	± 1.50 dB		
16-23 dB	0.1-18 GHz	± 1.50 dB		
	18-40 GHz	± 2.00 dB		
24-31 dB	0.1-18 GHz	± 2.00 dB		
	18-33 GHz	± 3.00 dB		
	33-40 GHz	± 4.00 dB		
Description	Minimum	Typical	Maximum	Units
RF Input Power (Average)			+20	dBm
RF Input Power (0.1 dB Compression)			+25	dBm

Mechanical Specifications

Size

Length	0 in [0 mm]
Width	0 in [0 mm]
Height	0 in [0 mm]
Weight	0.5 lbs [226.8 g]
Connector 1	2.92mm Female
Connector 2	2.92mm Female

Environmental Specifications

Temperature

Operating Range	-40 to +85 deg C
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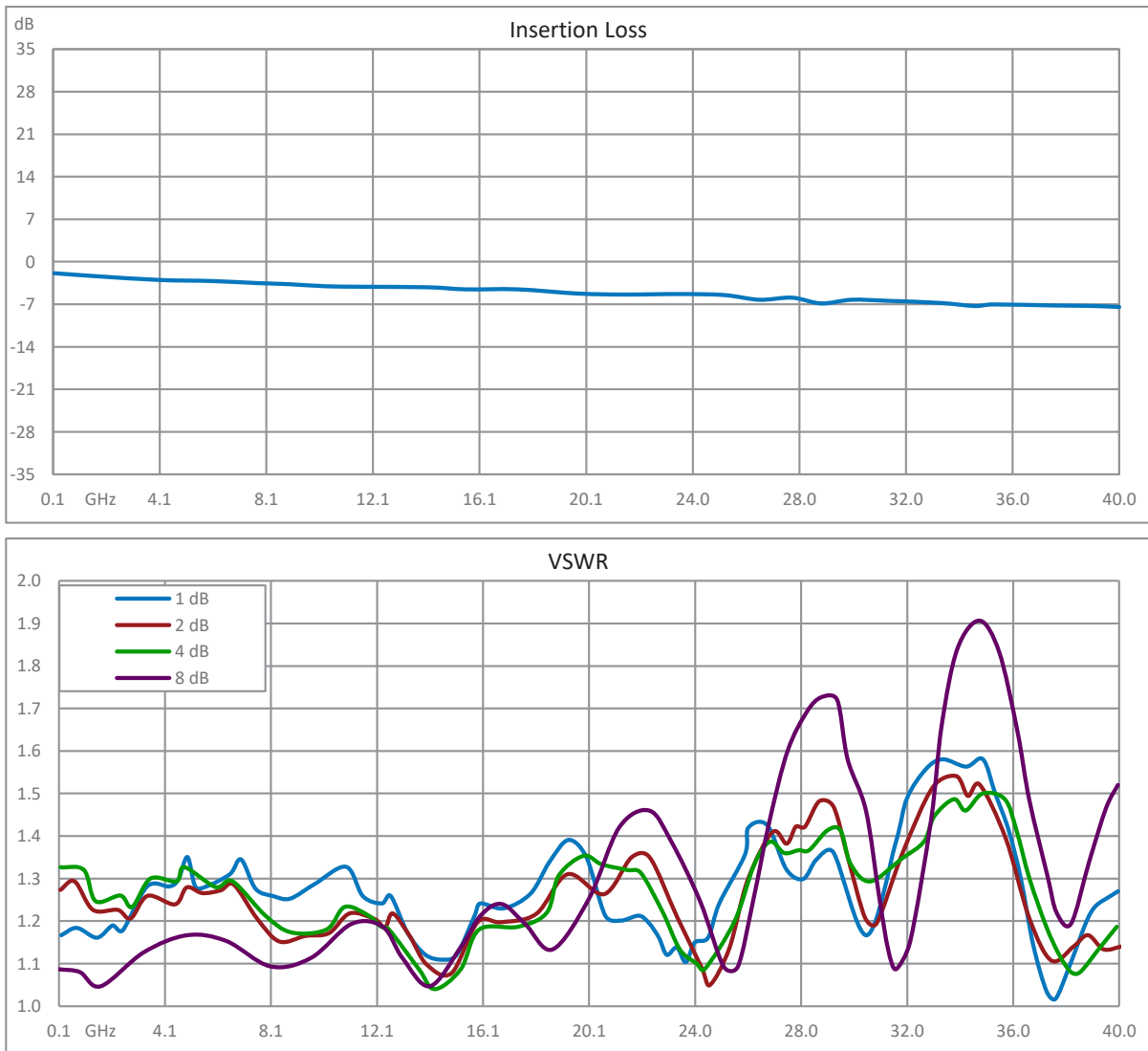
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

- Values at 25 °C, sea level

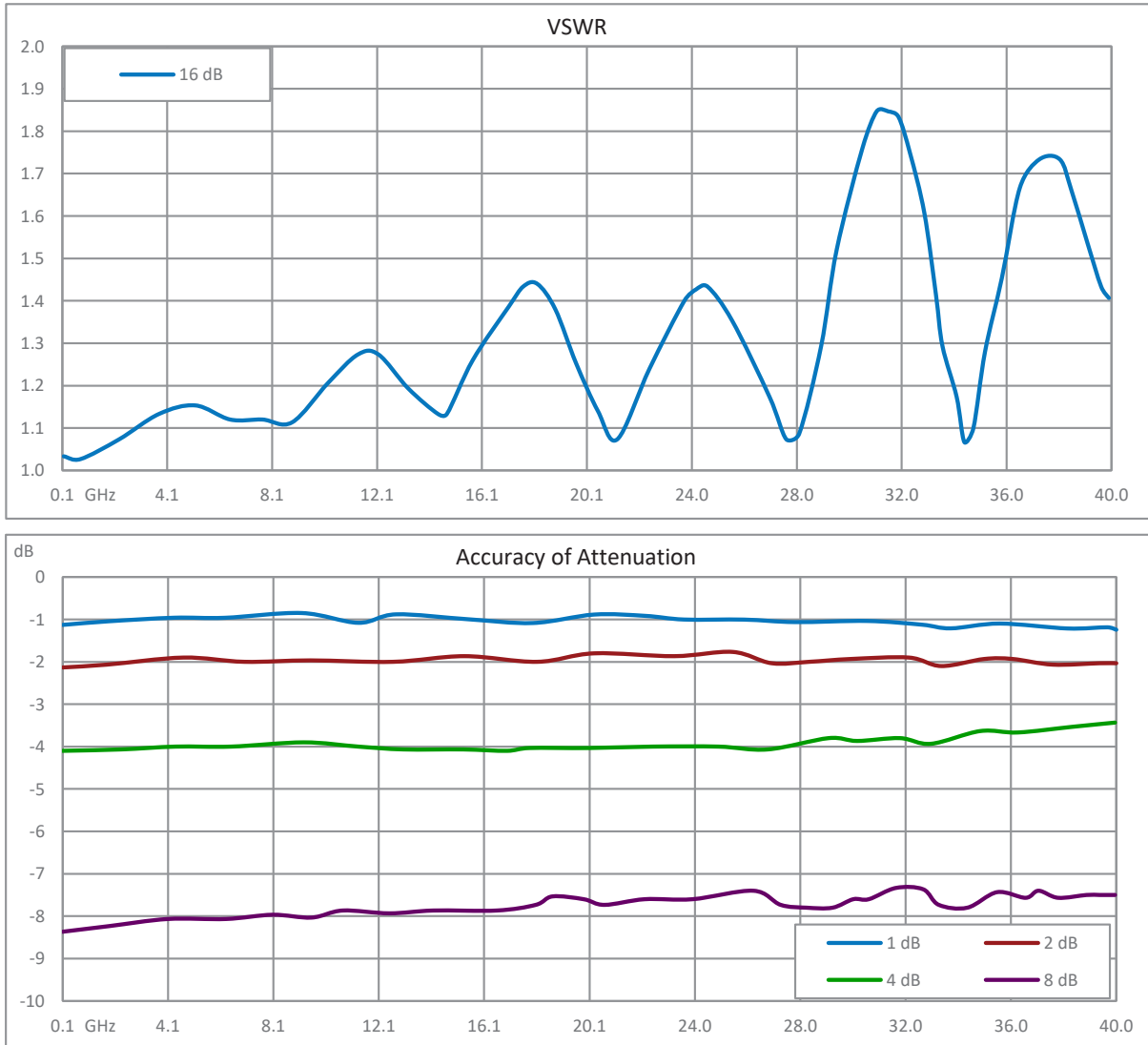
Typical Performance Data



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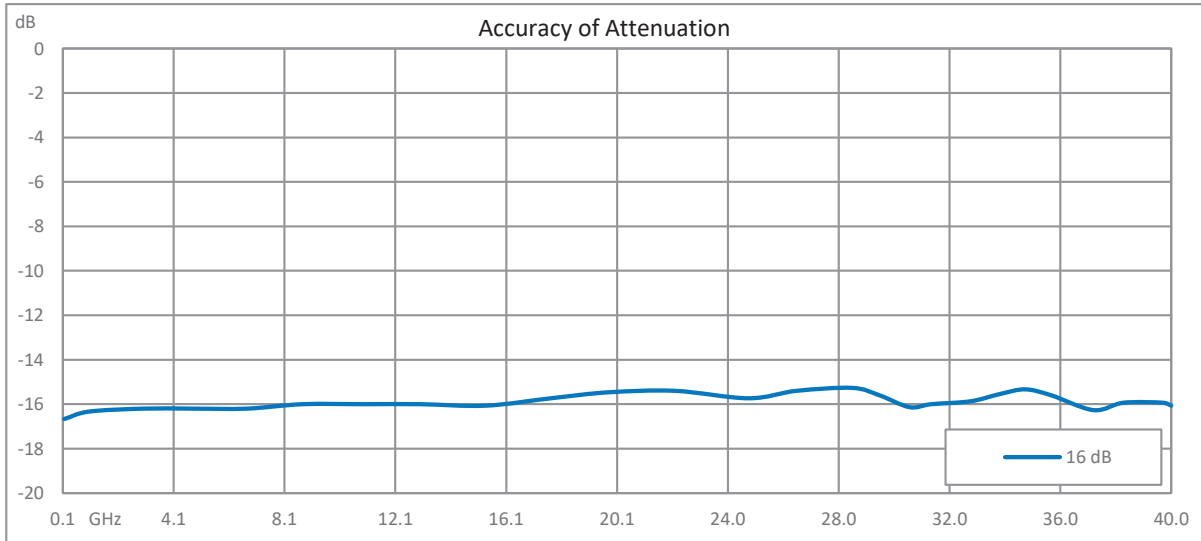
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Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [TTL Controlled Programmable Attenuator, 31 dB, from 100 MHz to 40 GHz, 1 dB Steps, 2.92mm Female PE70A8008](#)

URL: <https://www.pasternack.com/0db-relay-controlled-sma-female-sma-female-25-watts-attenuator-pe70a8008-p.aspx>

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T-Rev.D