



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

### TECHNICAL DATA SHEET

PE70A8008

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.

#### 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
- Radar Systems
- Test & Measurement
- Research & Development
- RF Wideband Front Ends
- Microwave Radio Systems

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

Description	Minimum	Typical	Maximum	Units
Frequency Range	0.1		40	GHz
Impedance		50		Ohms
Insertion Loss		6	9	dB
VSWR		1.7:1		
DC Voltage		+5,-5		Vdc
DC Current (per supply)		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

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](#)



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**Performance by Frequency**

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

**Attenuation 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**

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:



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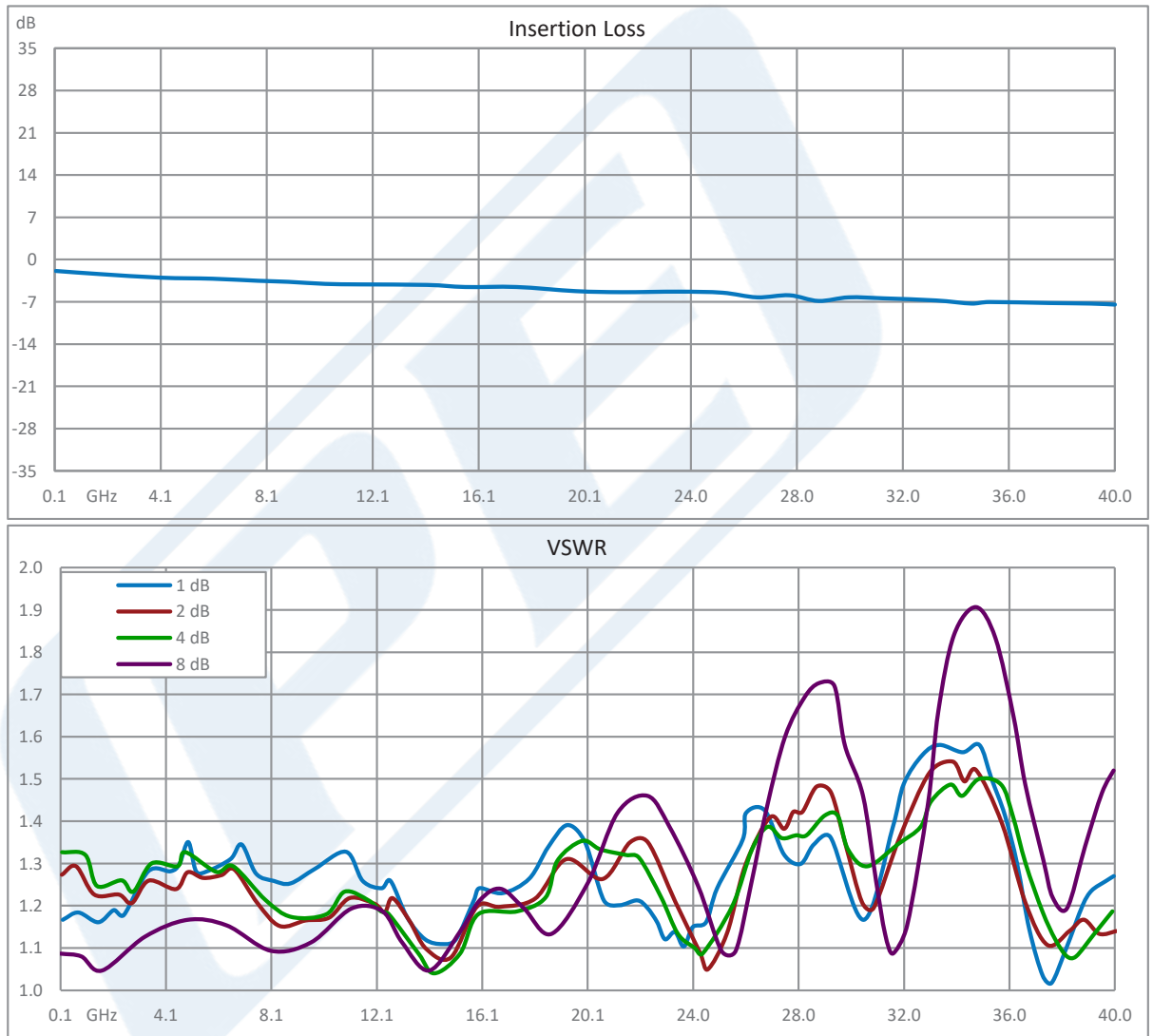


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Performance Data



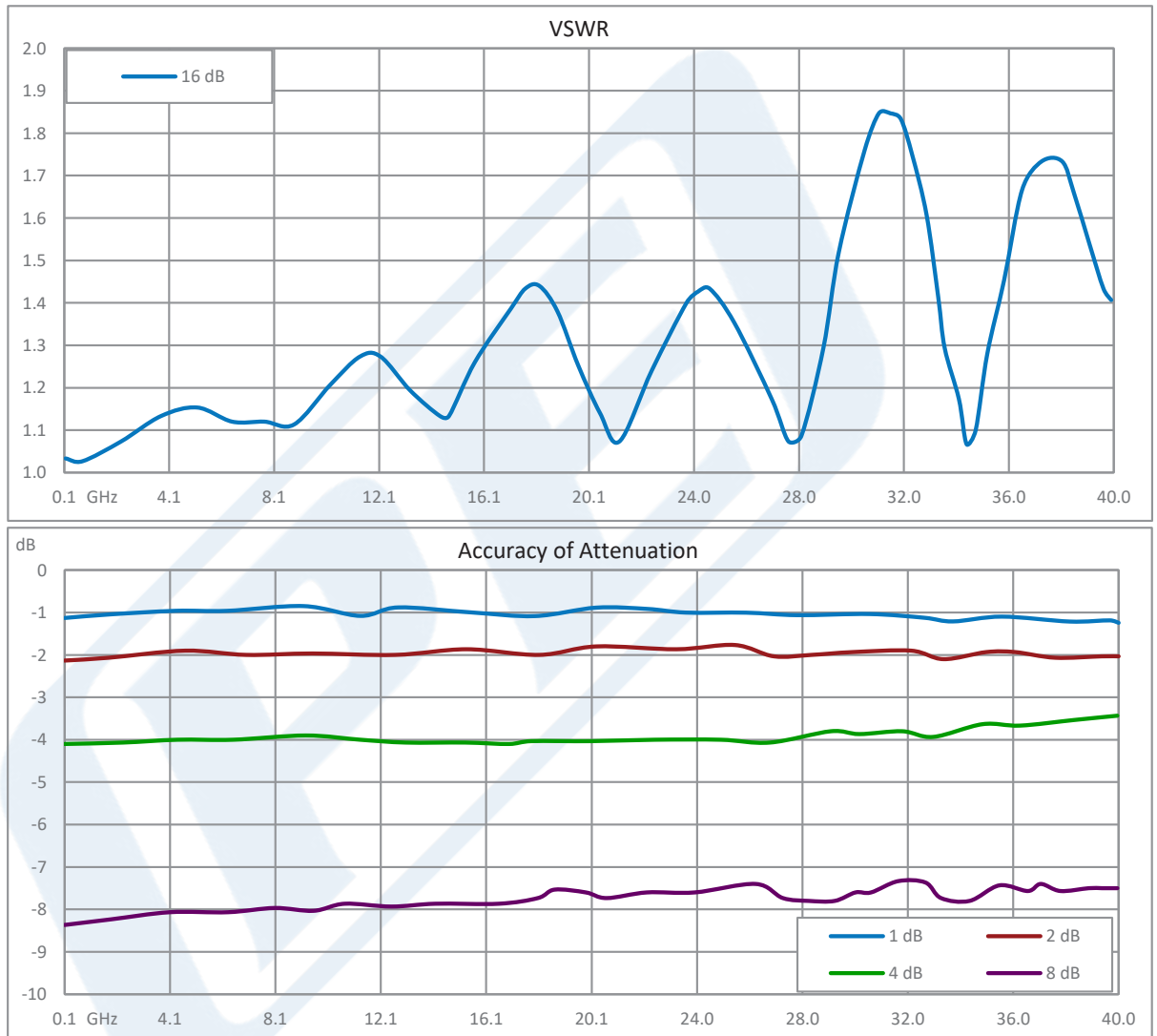
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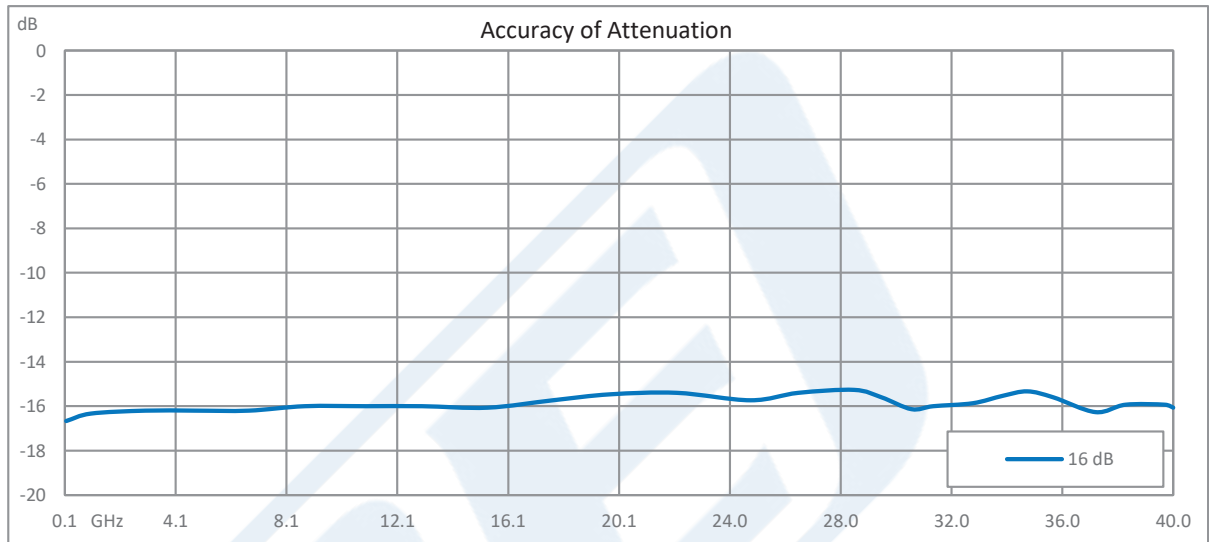
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TTL Controlled Programmable Attenuator, 31 dB, from 100 MHz to 40 GHz, 1 dB Steps, 2.92mm Female from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

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](https://www.pasternack.com/0db-relay-controlled-sma-female-sma-female-25-watts-attenuator-pe70a8008-p.aspx)

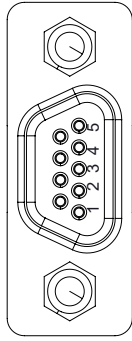
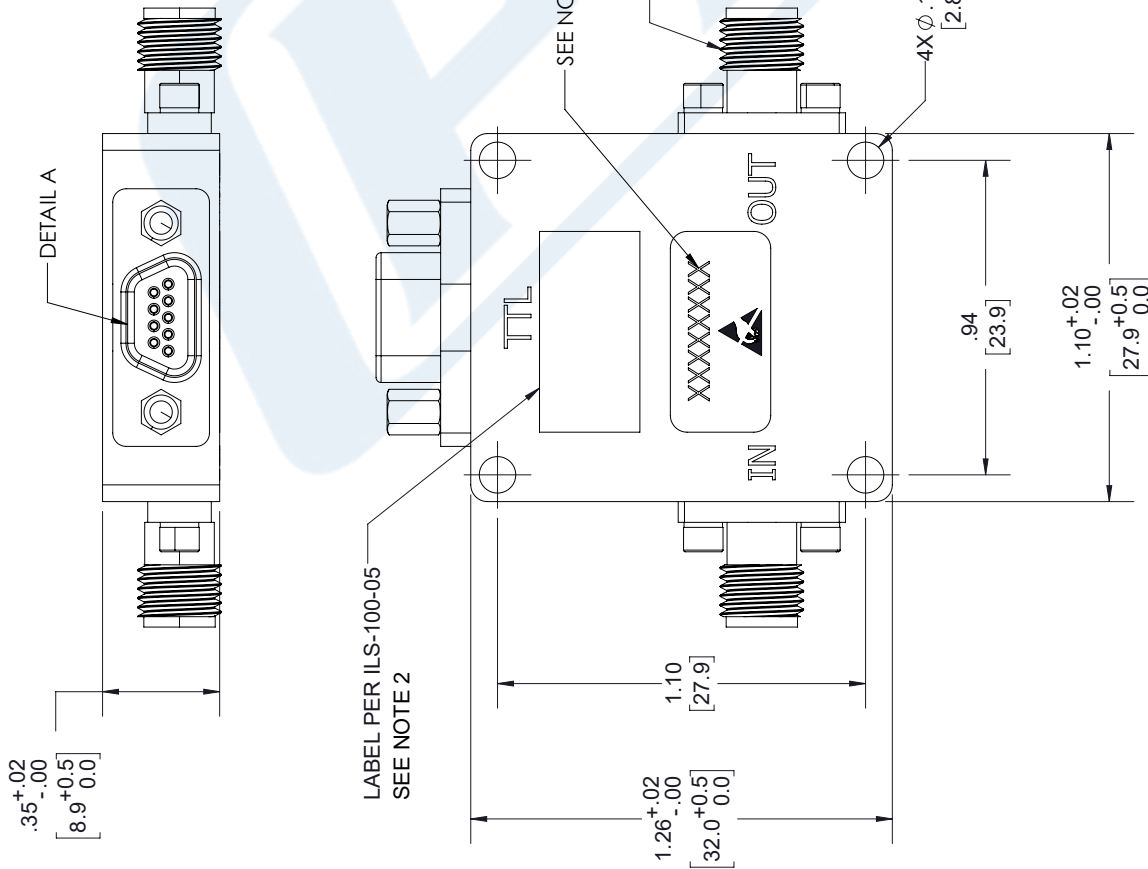
URL: <https://www.pasternack.com/0db-relay-controlled-sma-female-sma-female-25-watts-attenuator-pe70a8008-p.aspx>

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# PE70A8008 CAD Drawing

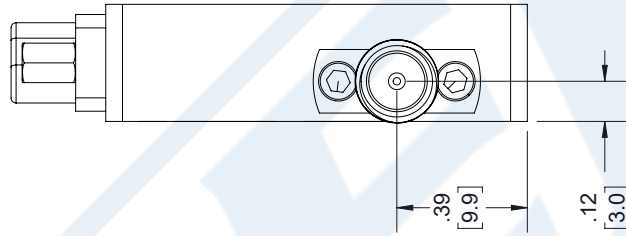
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REVISIONS		
REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	14-08-2021
		APPROVED
		TGALLA



DETAIL A  
MICRO D-SUB  
9 PIN FEMALE

PIN	FUNCTION
1	+5Vdc
2	-5Vdc
3	GND
4	C1
5	C2
6	C3
7	C4
8	C5
9	N/C



UNLESS OTHERWISE SPECIFIED  
LEADING DIMENSIONS ARE INCHES  
DIMENSIONS IN [ ] ARE MILLIMETERS

TOLERANCES:  
 .X = ±.2 [5.08] FRACTIONS ± 1/32  
 .XX = ±.02 [.51] ANGLES ± 1°  
 .XXX = ±.005 [.13] CABLE LENGTH (L) TOLERANCES:  
 L ≤ 12 [305] = +1 [25] / -0  
 12 [305] < L ≤ 60 [1524] = +2 [51] / -0  
 60 [1524] < L ≤ 120 [3048] = +4 [102] / -0  
 120 [3048] < L ≤ 300 [7620] = +6 [152] / -0  
 300 [7620] < L = +5%L / -0  
 ALL DIMENSIONS SHOWN  
 ARE FOR REFERENCE ONLY.



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SHEET	1	OF	1
SCALE	N/A		



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REV	A
ITEM NO.	PE70A8008
DRAWN BY	MVEERAPPAN
CAGE CODE	53919

NOTES:

1. SERIAL NUMBER AND DATE CODE ARE COMBINED. EX: 202008280001.
2. LABEL PER ILS-100-05. FOR INTERNAL REFERENCE ONLY.  
LABEL LOCATION SHOULD BE SAME AS SHOWN.

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