



USB Controlled Programmable Attenuator, 63 dB, from 100 MHz to 18 GHz, 0.5 dB Steps SMA Female

TECHNICAL DATA SHEET

PE70A8012

The PE70A8012 is an 7 Bit USB Controlled Solid State Programmable Attenuator which operates over a wide band frequency range of 100 MHz to 18 GHz. The 50 ohm solid state design supports a USB interface and MS .NET 4.0+ framework. A downloadable USB test software manual available. The PE70A8012 has an attenuation range that covers 0 to 63 dB in 0.5 dB steps. Attenuation steps are 0.5, 1, 2, 4, 8, 16, and 32 dB. Insertion loss is 4 dB typical with a maximum RF input power of +25 dBm. Additional typical performance includes +/- 0.5 dB attenuation accuracy, and switching speed of 0.35 microseconds. Operational temperature range is -40°C to +85°C, and the DC supply is +5 Vdc @ 2 mA nominal. The compact and rugged package design supports SMA female RF input/output connectors, and a USB Mini-B connector for DC and TTL controls. A 6' USB A to USB Mini-B cable is included.

Features

- USB Controlled 7 Bit Solid State Programmable Attenuator
- Frequency Range 100 MHz to 18 GHz
- Attenuation Range: 0 to 63 dB in 0.5 dB steps
- Attenuation Steps: 0.5, 1, 2, 4, 8, 16, 32 dB
- Insertion Loss 4 dB typ
- Attenuation Accuracy +/- 0.5 dB typ
- Switching Speed 0.35 microseconds typ
- Max RF Input Power +25 dBm
- DC Voltage +5 Vdc
- DC Current 2 mA typ
- 50 Ohm Design
- -40°C to +85°C Operating Temperature
- SMA Female Connectors
- USB Mini-B 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

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

Description	Minimum	Typical	Maximum	Units
Frequency Range	0.1		18	GHz
Impedance		50		Ohms
Mean Attenuation Range	0		63	dB
Insertion Loss		4	7	dB
VSWR		1.5:1	2:1	
DC Voltage		+5		Vdc
DC Current		2		mA
Accuracy of Attenuation				dB
0.5 dB to 3.5 dB		±0.25		dB
4 dB to 14.5 dB		±0.5		dB
15 dB to 31.5 dB		±0.75		dB
32 dB to 63 dB		±1		dB
Step Size	1			dB

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [USB Controlled Programmable Attenuator, 63 dB, from 100 MHz to 18 GHz, 0.5 dB Steps SMA Female PE70A8012](#)



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Switching Time	350	1,000	ns
RF Input Power (Operating- Input Side)		+24	dBm
RF Input Power (Operating-Output Side)		+15	dBm
RF Input Power (No Damage- Input Side)		+25	dBm
RF Input Power (No Damage-Output Side)		+16	dBm

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	0.1 to 1	1 to 3	3 to 6	6 to 12.4	12.4 to 18	GHz
Insertion Loss, Typ	2	2.7	3.2	4.5	6.4	dB
VSWR, Max	1.6	1.6	1.6	2	2	
VSWR, Typ	1.3	1.3	1.3	1.6	1.6	

Electrical Specification Notes:
0.5, 1, 2, 4, 8, 16, and 32 dB bit Attenuation Steps

Mechanical Specifications

Size

Weight	0.35 lbs [158.76 g]
Connector 1	SMA Female
Connector 2	SMA 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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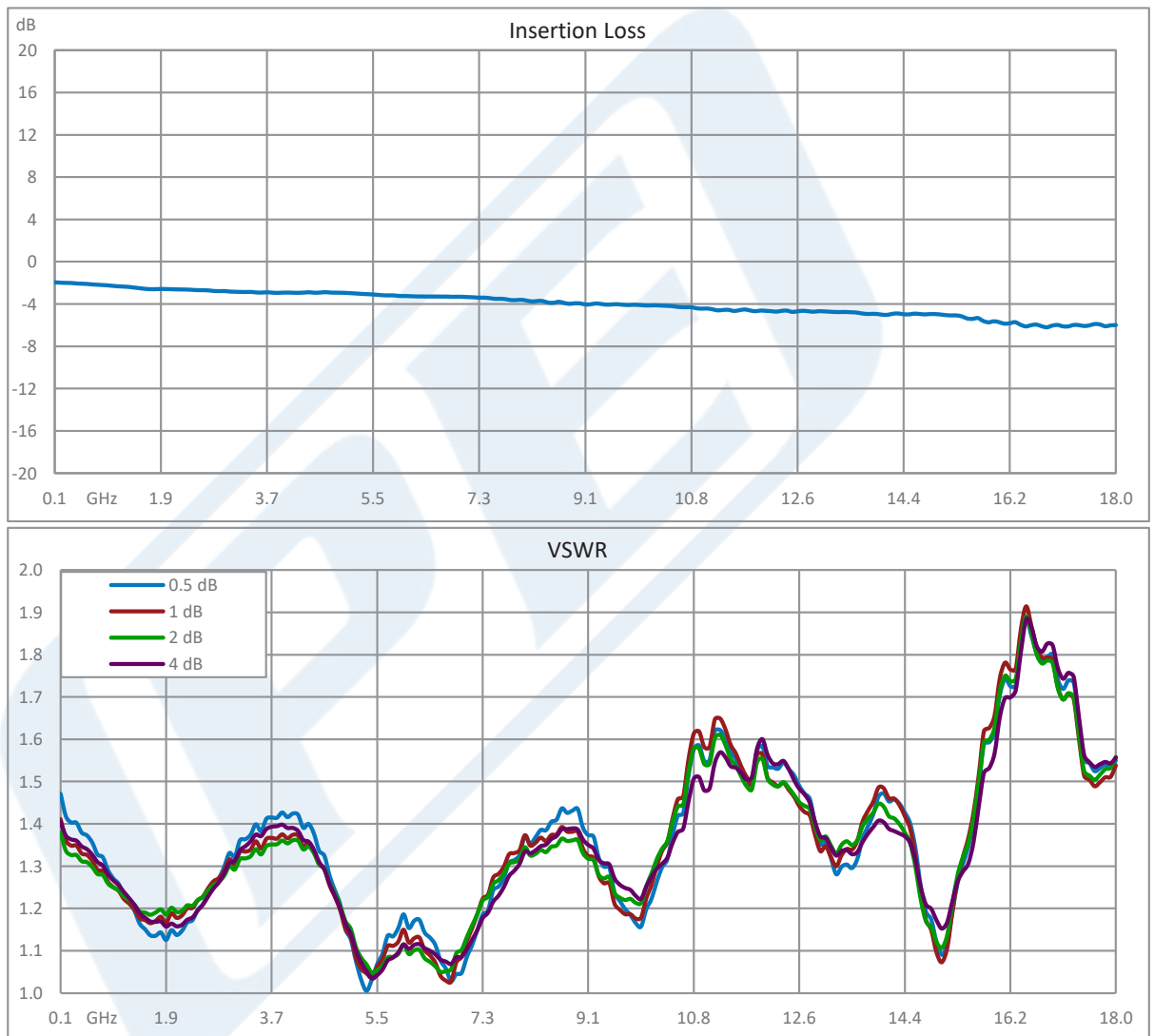


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Performance Data



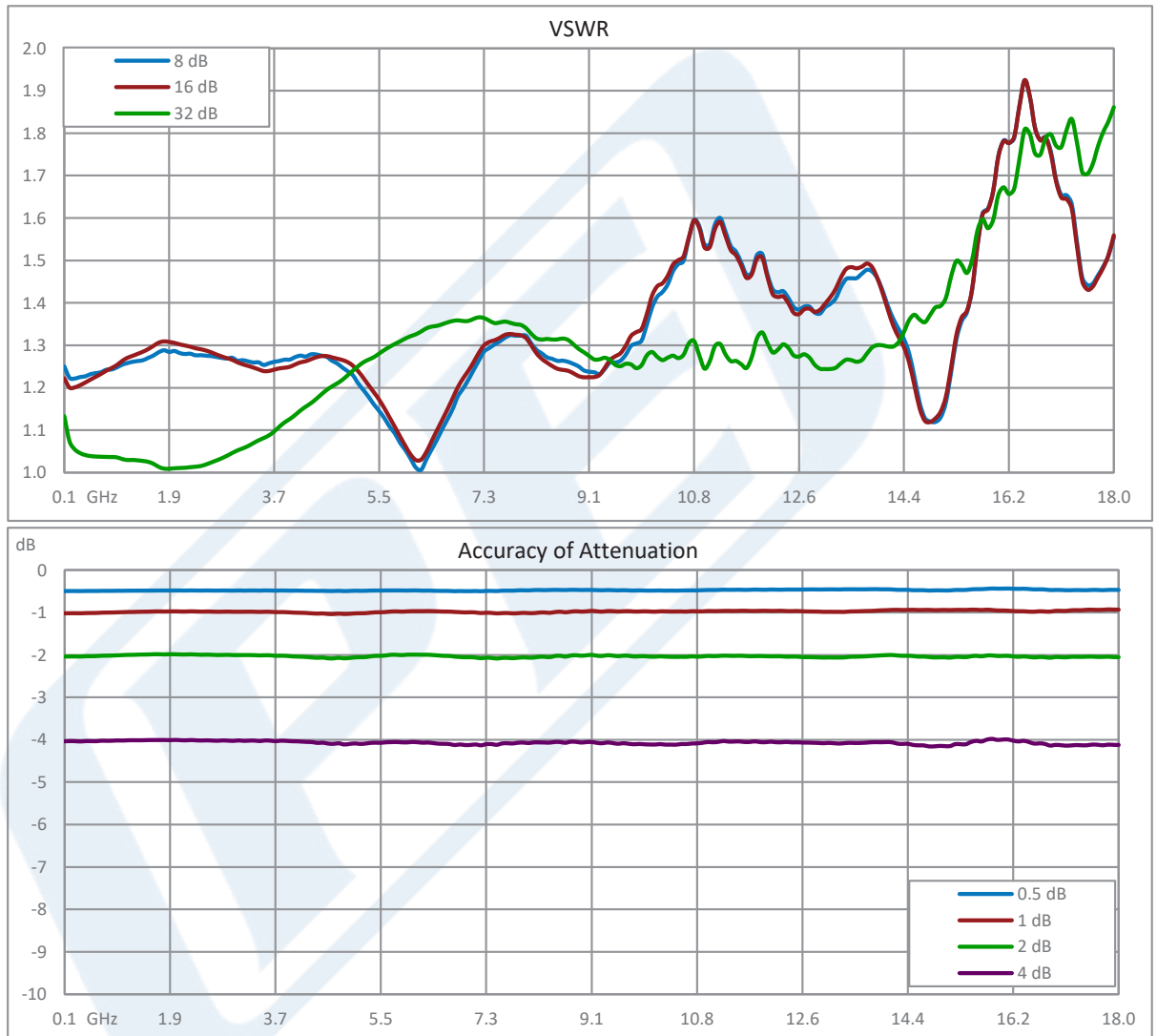
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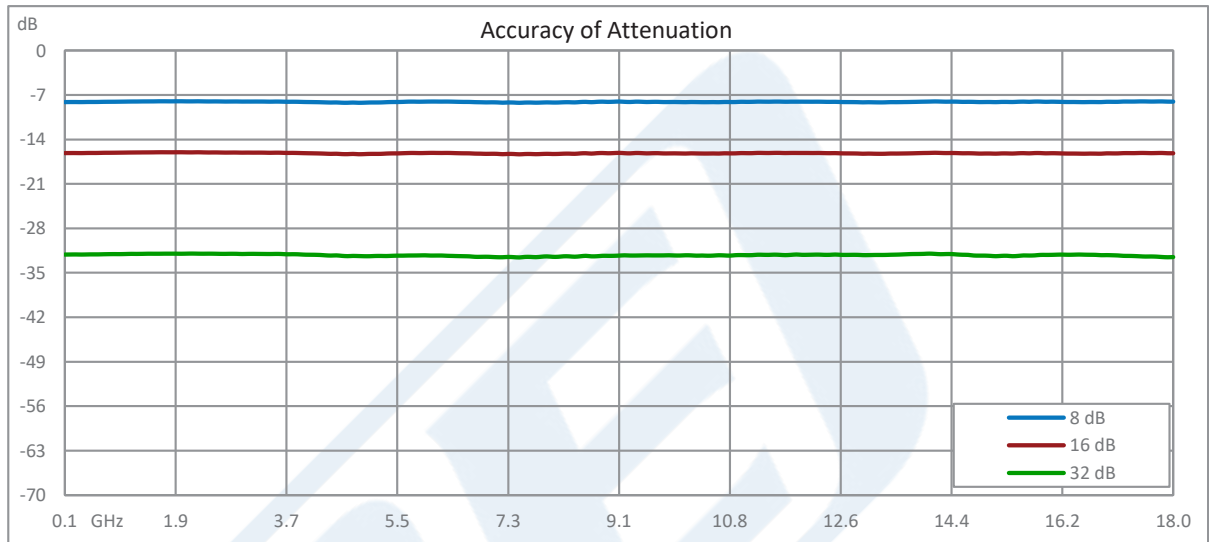
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USB Controlled Programmable Attenuator, 63 dB, from 100 MHz to 18 GHz, 0.5 dB Steps SMA Female from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% 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: [USB Controlled Programmable Attenuator, 63 dB, from 100 MHz to 18 GHz, 0.5 dB Steps SMA Female PE70A8012](https://www.pasternack.com/63db-relay-controlled-sma-female-sma-female-24-watts-attenuator-pe70a8012-p.aspx)

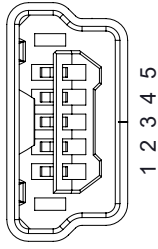
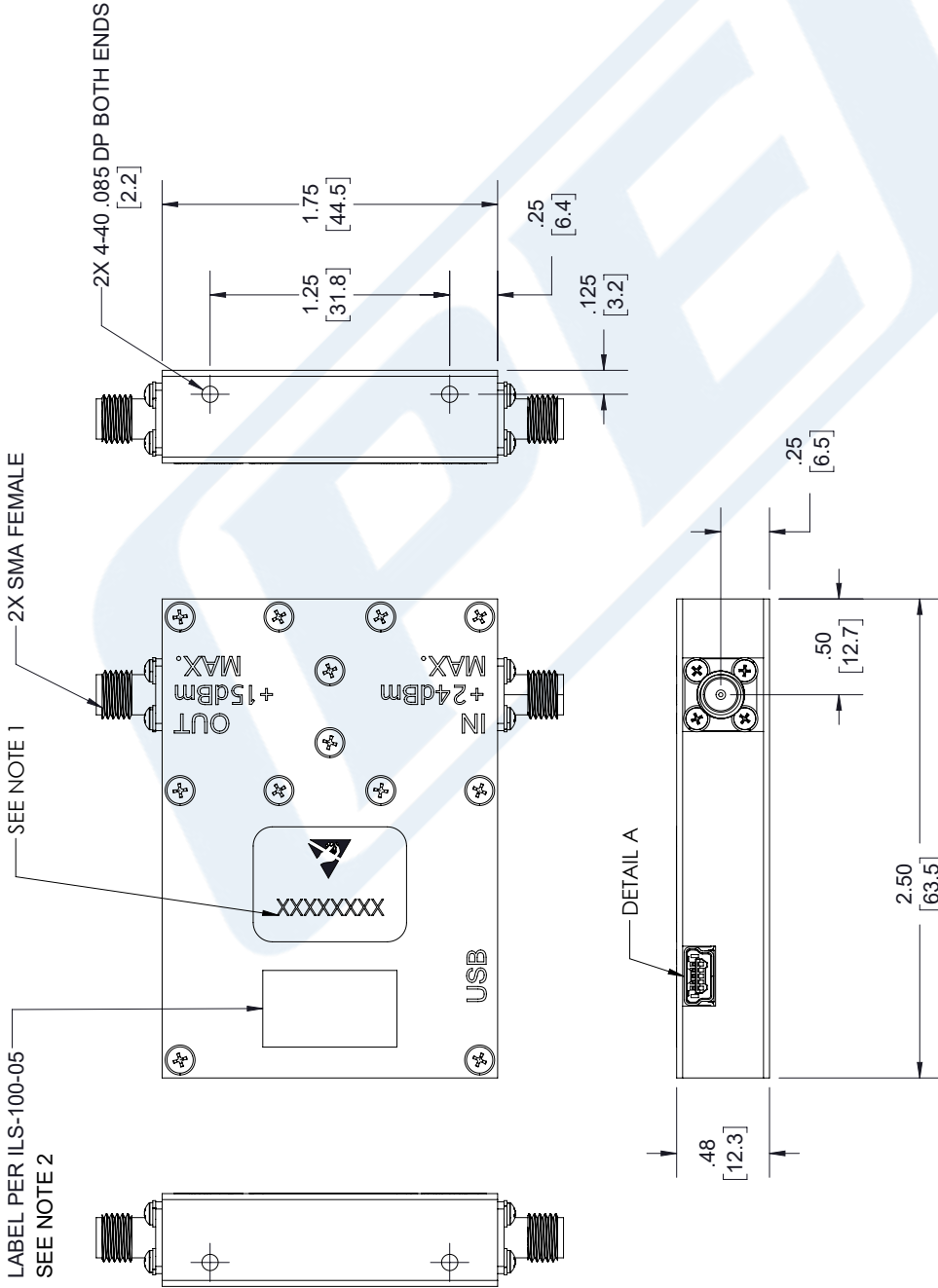
URL: <https://www.pasternack.com/63db-relay-controlled-sma-female-sma-female-24-watts-attenuator-pe70a8012-p.aspx>

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PE70A8012 CAD Drawing

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



DETAIL A
USB MINI-B

PIN	FUNCTION
1	+5VDC
2	D-
3	D+
4	NO CONNECTION
5	GROUND

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

TOLERANCES:
.X = ±.2 [5.08] FRACTIONS
.XX = ±.02 [.51] ±.1/32
.XXX = ±.005 [.13] ANGLES ± 1°

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.

THIRD-ANGLE PROJECTION

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SHEET 1 OF 1
SCALE N/A

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SIZE A CAGE CODE MVEERAPPAN DRAWN BY MVEERAPPAN ITEM NO. PE70A8012 REV A

- NOTES:
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