

Voltage Variable PIN Diode Attenuator, 0 to 40 dB,  
400 MHz to 6 GHz, SMA, 15-Pin D-Subminiature Control



**PE70A1000**

**Features**

- PIN Diode Attenuator
- 0.4 GHz to 6 GHz Frequency Range
- Operating Temperature -50°C to +100°C
- 40 dB Attenuation
- 0 - 10 VDC Linear Voltage Control Range
- 15 Pin D-SUB Connector with mating D-SUB
- Guaranteed to meet MIL-STD-202F Environmental Test Conditions

**Applications**

- Electronic Warfare
- Test & Measurement
- Electronic Countermeasures
- Military & Space
- Radar
- Military Communications Systems
- Microwave Radio

**Description**

The PE70A1000 is a Non-Reflective Linear Voltage Controlled 40 dB PIN Diode Attenuator that operates from 0.4 GHz to 6 GHz. Typical performance includes 3 dB insertion loss, 1.5:1 VSWR, attenuation accuracy of 0.37 dB, and fast switching time of < 5  $\mu$ s. The attenuator has a control voltage range of 0 to +10 Vdc (linearized), uses a dual +/- 12 VDC supply, and is rated for an input power of +23 dBm CW at P1dB. The rugged and compact package assembly supports SMA Female connectors and a 15 pin D-SUB connector for DC control and biasing. Operating temperature is -50°C to +100°C. And for highly reliable operation, the model is guaranteed to meet MIL-STD-202F environmental test conditions for Humidity, Shock, Vibration, Altitude, and Temperature Cycle.

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

Description	Minimum	Typical	Maximum	Units
Frequency Range	0.4		6	GHz
Attenuation Range	0		40	dB
Insertion Loss		3	4	dB
VSWR		1.5:1	2:1	
Input at 0.1 dB Compression Point		+23		dBm
Accuracy of Attenuation				
0 dB to 12 dB			0.5	dB
12 dB to 24 dB			0.24	dB
24 dB to 36 dB			0.47	dB
36 dB to 40 dB			0.43	dB
Switching Time		5	10	us
Switching Speed			10	us
Control Voltage	0		10	Volts
DC Power Supply				
to 12 VDC			59	mA
to -12 VDC			36	mA
Attenuation Range	0		40	dB

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### Mechanical Specifications

#### Size

Length	2 in [50.8 mm]
Width	1.81 in [45.97 mm]
Height	0.88 in [22.35 mm]
Weight	0.242 lbs [109.77 g]
Input Connector	SMA Female
Output Connector	SMA Female
Power and Control	15-Pin D-Subminiatur

### Environmental Specifications

#### Temperature

Operating Range	-50 to +100 deg C
Storage Range	-65 to +125 deg C
Humidity	MIL-STD-202F, METHOD 103B COND. B
Shock	MIL-STD-202F, METHOD 213B COND. B
Vibration	MIL-STD-202F, METHOD 204D COND. B
Altitude	MIL-STD-202F, METHOD 105C COND. B
Temperature Cycle	MIL-STD-202F, METHOD 107
Salt Spray	MIL-STD-202F, METHOD 105C COND. B

**Compliance Certifications** (see [product page](#) for current document)

### Plotted and Other Data

Notes:

- Values at +25 °C, sea level  
ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

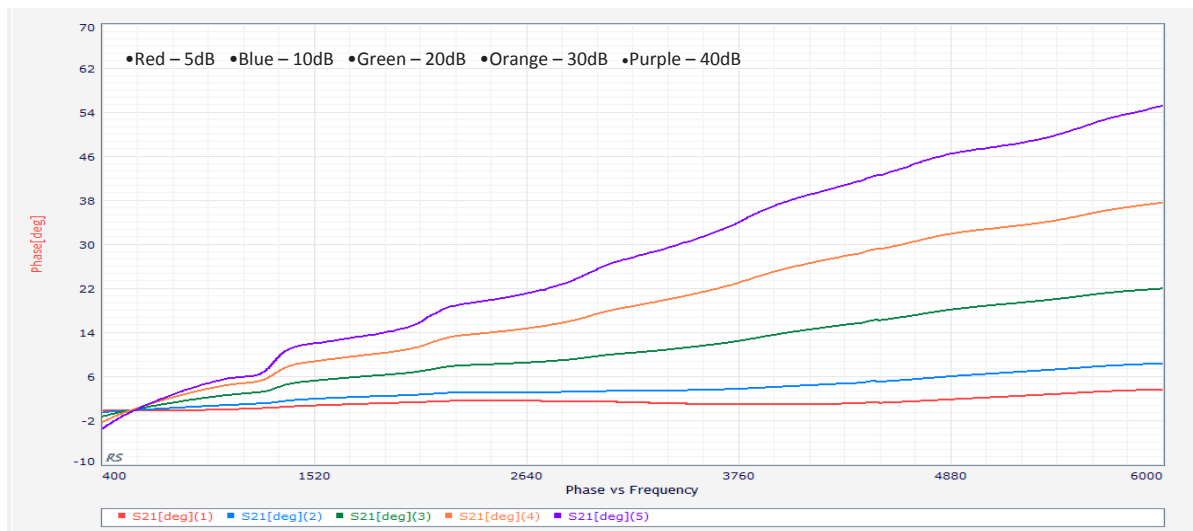
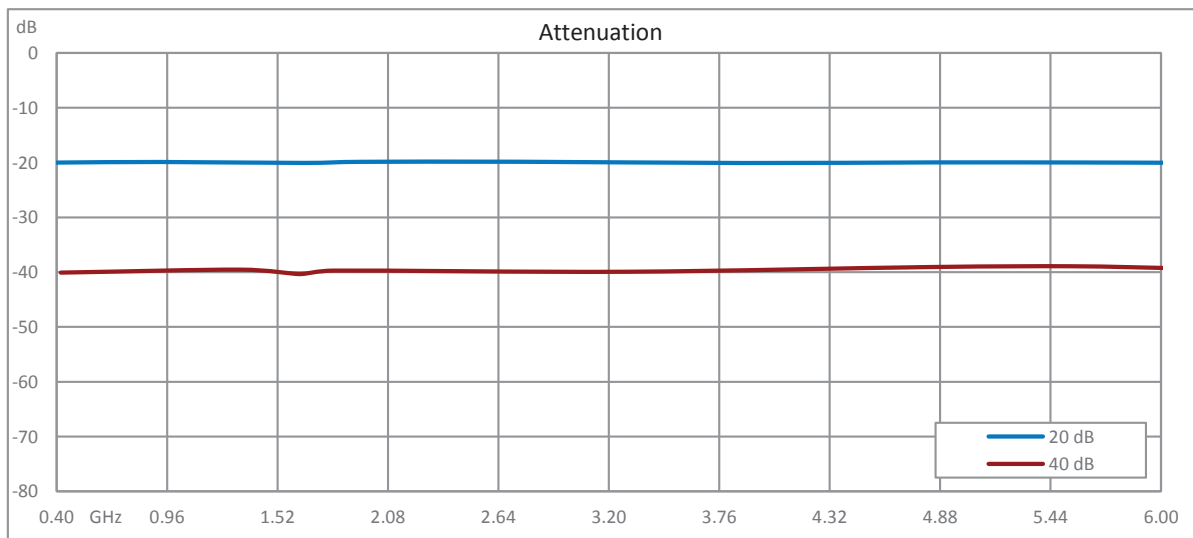
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## PE70A1000

### Functional Block Diagram

### Performance Data

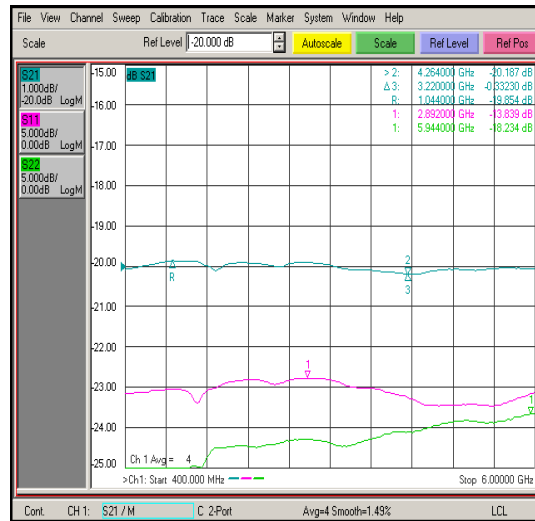


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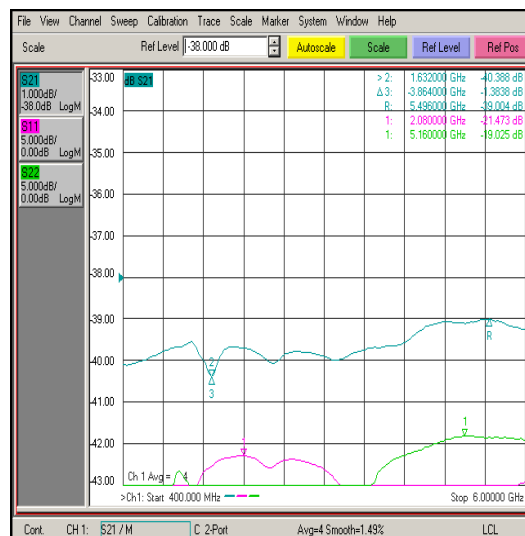


**PE70A1000**

**20dB Attenuation**



**40dB Attenuation**



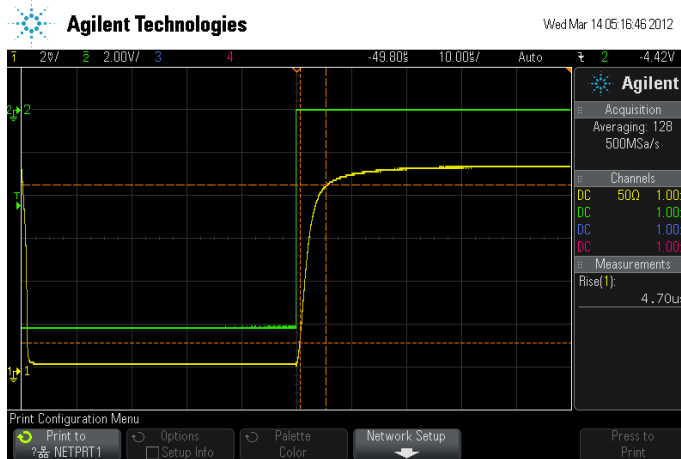
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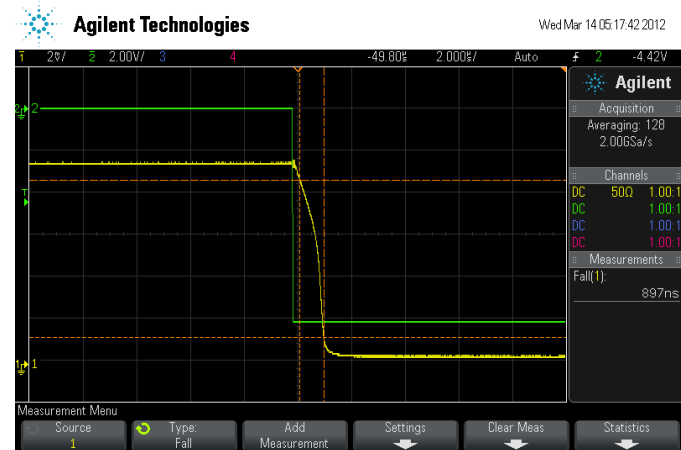
**Delay ON Time**

**Measured @ 4GHz, 5dBm with a Crvstal Detector**



**Channel 1 (Yellow Trace): RF output**  
**Channel 2 (Green Trace): 10 Volt Input from Signal Generator**

**Measured @ 4GHz, 5dBm with a Crvstal Detector**



**Channel 1 (Yellow Trace): RF output**  
**Channel 2 (Green Trace): 10 Volt Input from Signal Generator**

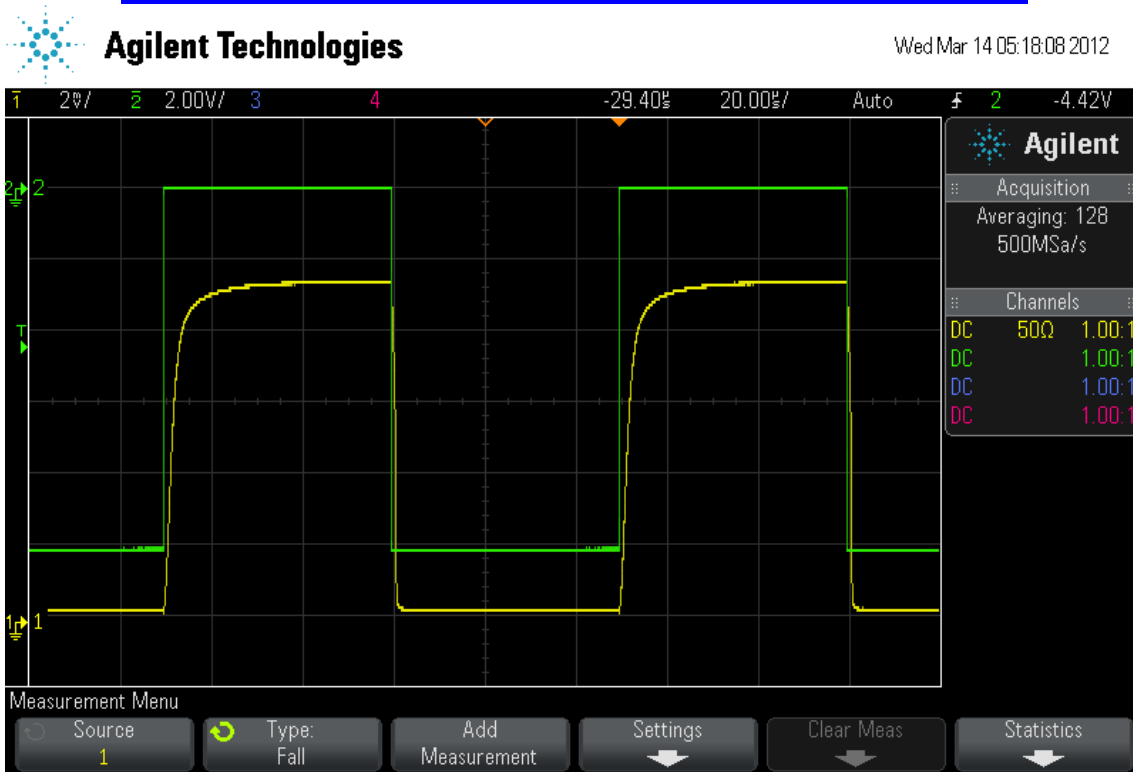
Voltage Variable PIN Diode Attenuator, 0 to 40 dB,  
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**PE70A1000**

Switching

Measured @ 4GHz, 5dBm with a Crystal Detector



**Channel 1 (Yellow Trace): RF output**  
**Channel 2 (Green Trace): 10 Volt Input from Signal Generator**

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Voltage Variable PIN Diode Attenuator, 0 to 40 dB, 400 MHz to 6 GHz, SMA, 15-Pin D-Subminiature Control 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.

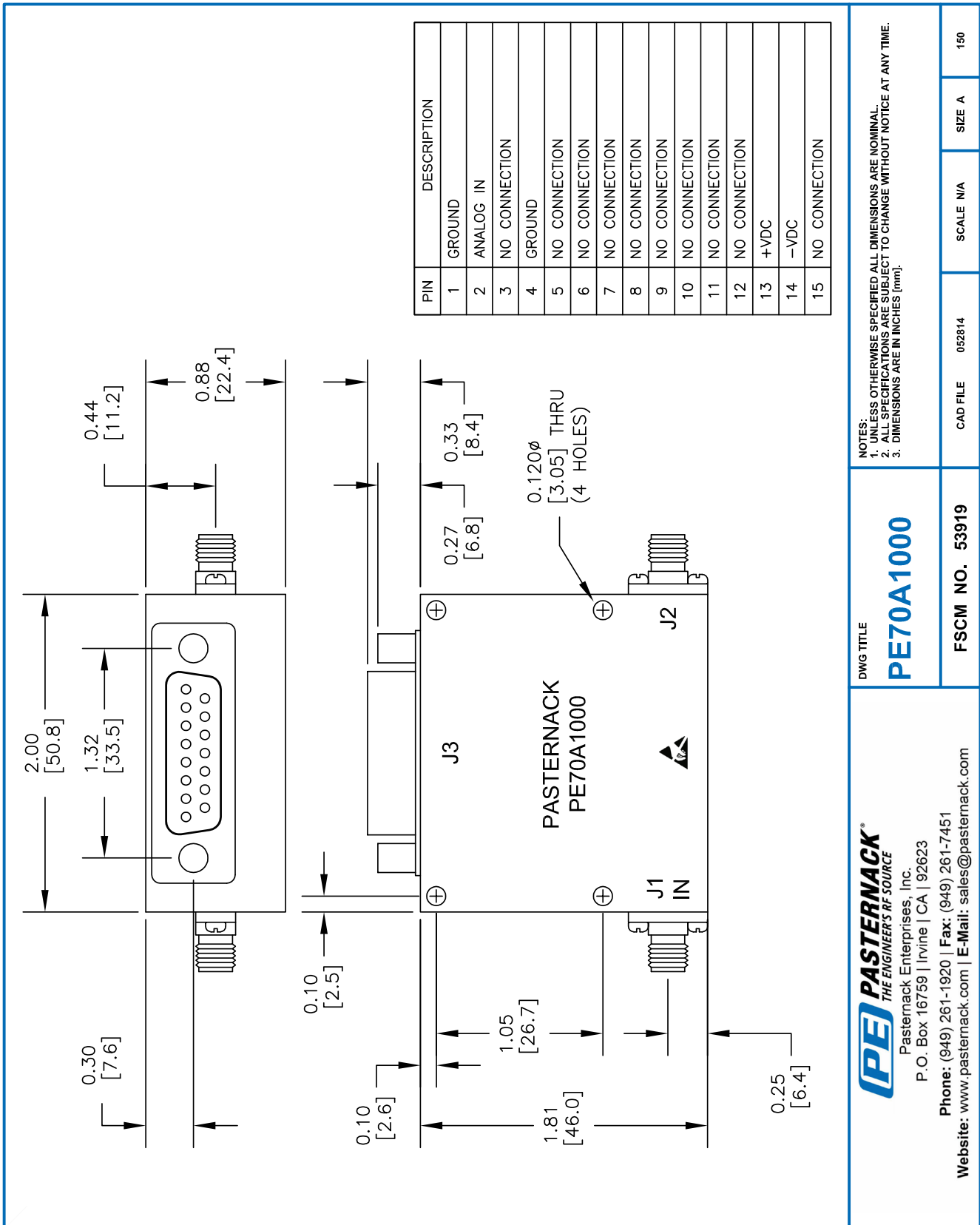
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Voltage Variable PIN Diode Attenuator, 0 to 40 dB, 400 MHz to 6 GHz, SMA, 15-Pin D-Subminiature Control PE70A1000](#)

URL: <https://www.pasternack.com/40db-voltage-variable-sma-female-sma-female-0-watts-pin-attenuator-pe70a1000-p.aspx>

The information contained within this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part in order to implement improvements. Pasternack Enterprises reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack Enterprises does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack Enterprises does not assume liability arising out of the use of any part or document.

# PE70A1000 CAD Drawing

Voltage Variable PIN Diode Attenuator, 0 to 40 dB, 400 MHz to 6 GHz, SMA, 15-Pin D-Subminiature Control



NOTES:  
 1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.  
 2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.  
 3. DIMENSIONS ARE IN INCHES (mm).

DWG TITLE  
**PE70A1000**

FSCM NO. 53919

CAD FILE 052814

SCALE N/A

SIZE A

150

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