

8 GHz to 12 GHz Voltage Control Attenuator, 30 dB, Field Replaceable SMA

PE70A2007



Features

- Absorptive Voltage Controlled Attenuator
- 8 GHz to 12 GHz
- Attenuation Range 30 dB typ
- Insertion Loss 1.7 dB typ
- P0.1 dB Compression Power +27 dBm
- Input IP3 45 dBm typ
- Switching Speed 2.5 usec typ
- Max RF Input Power +30 dBm
- Control Voltage 0V to 10V
- 50 Ohm Circuit Design uses an absorptive topology
- Field Replaceable SMA Female RF Connectors
- Solder Pins for DC Control
- Operational Temperature Range -40°C to +85°C
- Rugged and Compact Aluminum Gold Plated Package Design
- Environmental Test Conditions Altitude, Vibration, Humidity, Shock
- Single Control Voltage

Applications

- Test & Measurement
- Military and Commercial Communications
- Military Electronic Systems
- Research & Development

Description

The PE70A2007 is an Absorptive Analog Voltage Variable Attenuator module that operates across a frequency range from 8 GHz to 12 GHz and supports a single voltage control of 0V to 10V with 15 mA of DC Current. The 50 ohm circuit design uses an absorptive topology and offers an attenuation range from 0 to 30 dB across the full frequency band. Impressive typical performance includes 1.7 dB insertion loss, a P0.1dB compression point of +27 dBm, input IP3 of 45 dBm, switching speed of 2.5 usec, and a maximum RF input power level of +30 dBm. The low profile miniature pin package is aluminum with gold plating and supports field replaceable SMA RF connectors and solder pins for DC control. With the connectors removed, the package can be drop mounted onto a PWB. The module has an operational temperature range from -40°C to +85°C and is guaranteed to meet a series of environmental test conditions for Altitude, Vibration, Humidity, and Shock.

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

Description	Minimum	Typical	Maximum	Units
Frequency Range	8		12	GHz
Attenuation Range		30		dB
Insertion Loss		1.7	2	dB
VSWR		1.5:1	1.8:1	
RF Input Power		+30	30	dBm
Input at 0.1 dB Compression Point		+27		dBm
Switching Speed			2.5	us
Control Voltage	0		10	Volts
Impedance		50		Ohms
Input IP3		45		dBm
Attenuation Range		30		dB
IL Temperature Coefficient		0.05		dB/deg C

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Absolute Maximum Rating

Parameter	Rating
Control Voltage	0~ 13V
RF Input power	+30dBm

Mechanical Specifications

Size

Length	0.55 in [13.97 mm]
Width	0.28 in [7.11 mm]
Height	0.51 in [12.95 mm]
Weight	0.05 lbs [22.68 g]
Input Connector	Field Replaceable SMA Female
Output Connector	Field Replaceable SMA Female
Power and Control	Solder Pin

Environmental Specifications

Temperature

Operating Range	-40 to +85 deg C
Storage Range	-50 to +105 deg C
Humidity	100% RH at 35°C, 95% RH at 40°C
Shock	20G for 11 msec half sine wave, 3 axis both directions
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Altitude	30,000 Feet

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

Plotted and Other Data

Notes:

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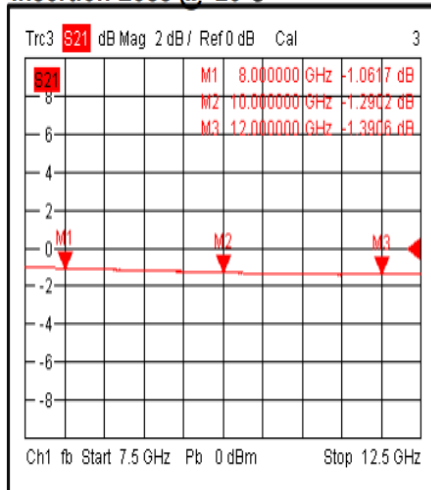


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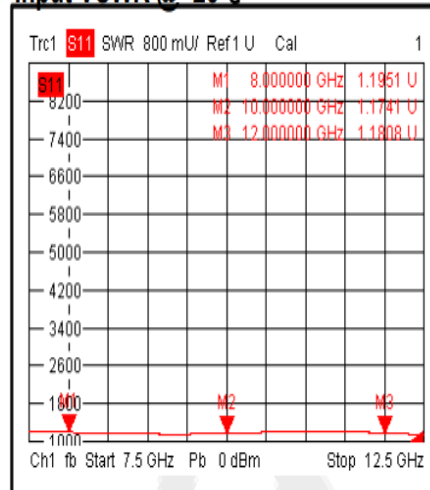
Functional Block Diagram

Performance Data

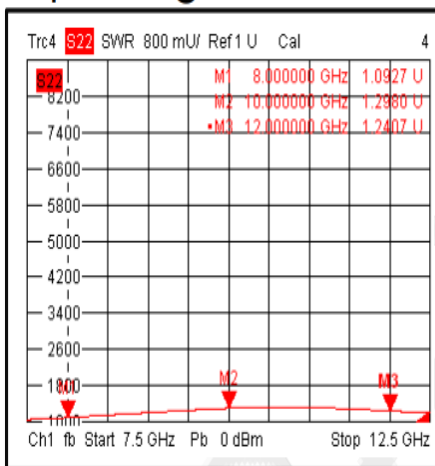
Insertion Loss @+25°C



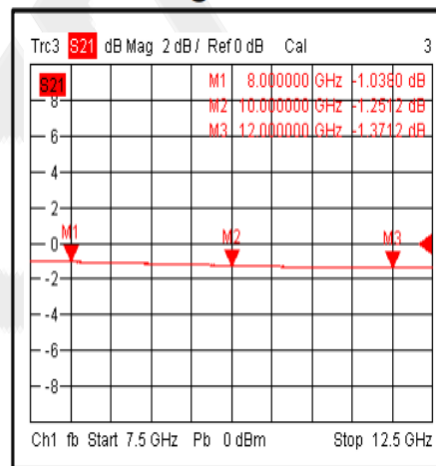
Input VSWR @+25°C



Output VSWR @+25°C



Insertion Loss @-40°C

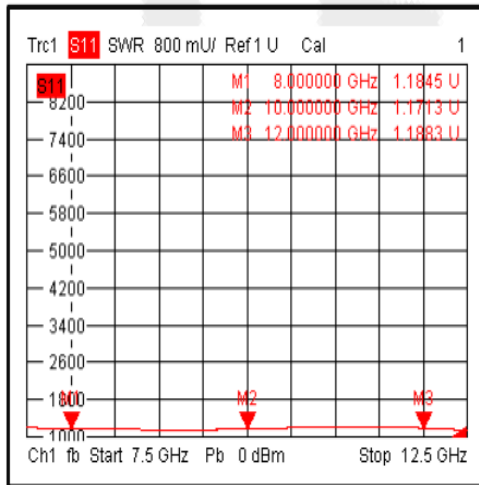


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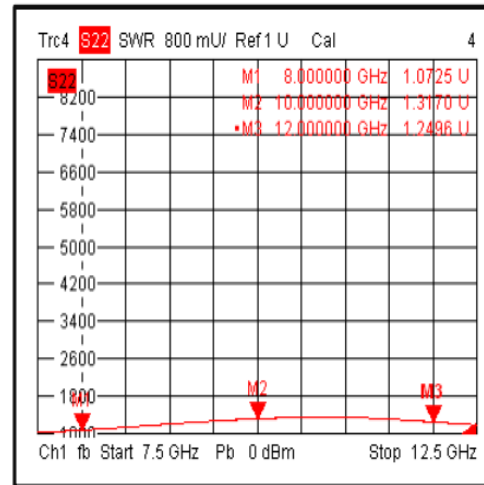
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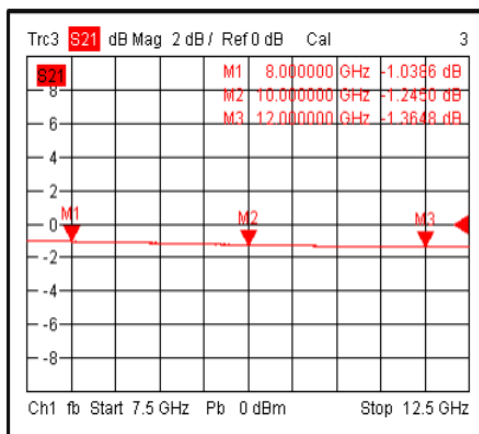
Input VSWR @-40°C



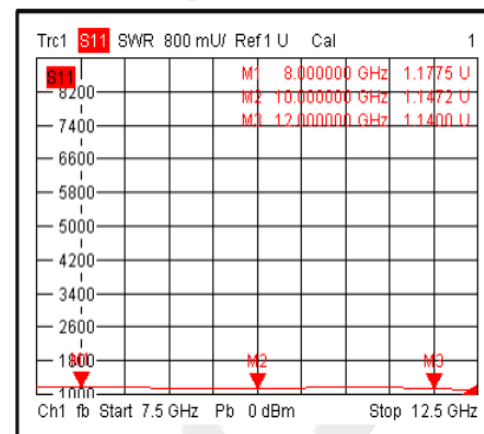
Output VSWR @-40°C



Insertion Loss @+85°C



Input VSWR @+85°C

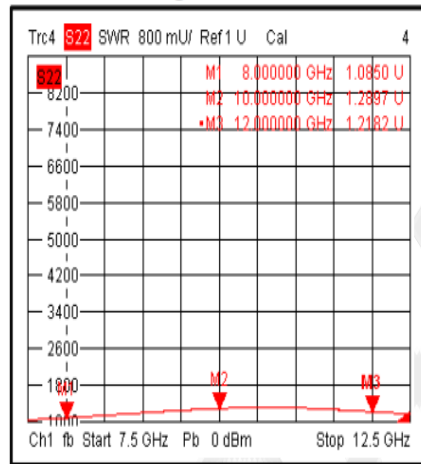


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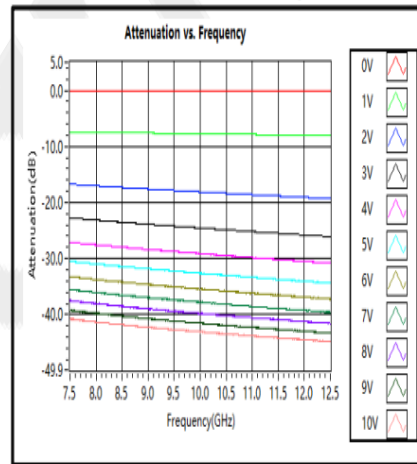
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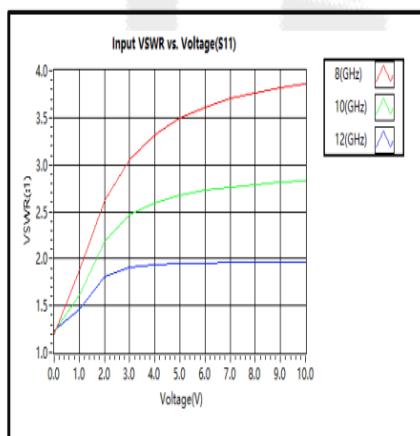
Output VSWR @+85°C



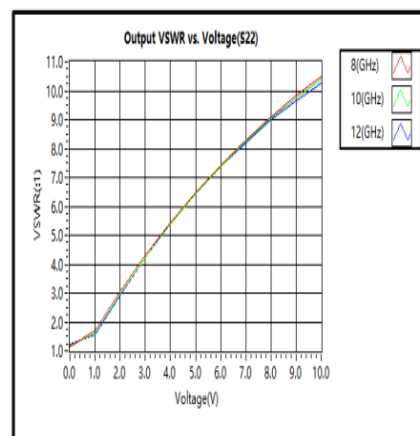
Attenuation vs. Frequency



VSWR vs. Voltage (S11)



VSWR vs. Voltage (S22)

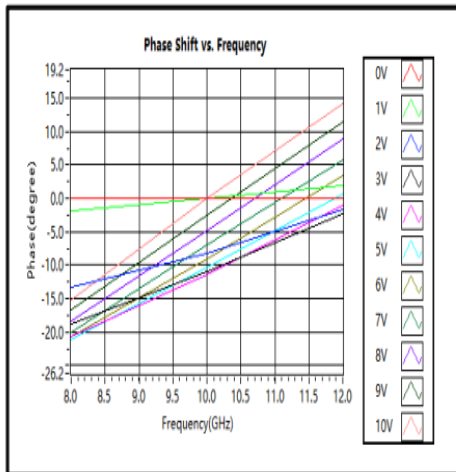


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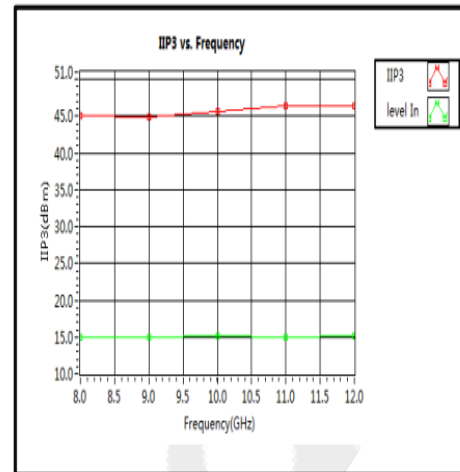
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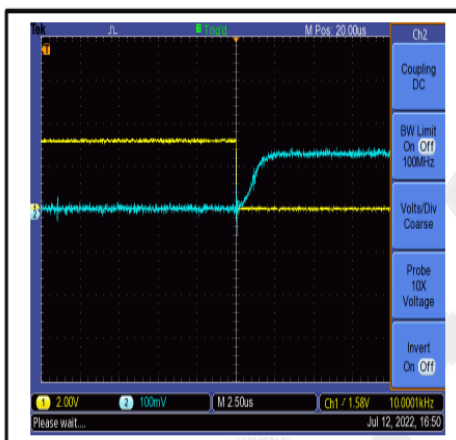
Phase Shift vs. Frequency



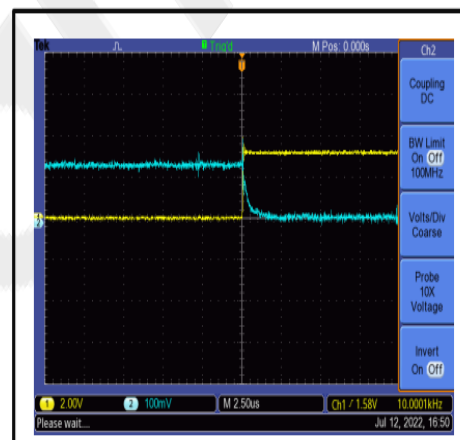
IIP3



Speed



Speed



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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: [8 GHz to 12 GHz Voltage Control Attenuator, 30 dB, Field Replaceable SMA PE70A2007](https://www.pasternack.com/30-db-voltage-variable-30-dbm-attenuator-pin-diode-12-ghz-sma-pe70a2007-p.aspx)

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PE70A2007 CAD Drawing
8 GHz to 12 GHz Voltage Control Attenuator, 30 dB, Field Replaceable SMA

