

4 GHz to 30 GHz Absorptive Voltage Variable Attenuator, 30 dB, Field Replaceable 2.92mm



PE70A2005

Features

- Absorptive Voltage Controlled Attenuator
- 4 GHz to 30 GHz
- Attenuation Range 0 to 30 dB typ
- Insertion Loss 4 dB typ
- P0.1 dB Compression Power +25 dBm typ
- Input IP3 28 dBm typ
- Max RF Input Power +30 dBm
- Switching Speed 500 usec typ
- Control Voltage -5V to 0V
- 50 Ohm Circuit Design uses Series-Shunt Topology
- Field Replaceable 2.92mm Female RF Connectors
- Solder Pins for DC Control
- Operational Temperature Range -40°C to +85°C
- Rugged and Compact Aluminum Gold Plated Package Design
- Guaranteed Environmental Test Conditions Altitude, Vibration, Humidity, Shock
- Single Control Operation

Applications

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

Description

The PE70A2005 is an Absorptive Analog Voltage Variable Attenuator module that operates across a wide frequency range from 4 GHz to 30 GHz and supports a single voltage control of -5V to 0V with 5 mA of DC Current. The 50 ohm circuit design uses series-shunt reflective topology and offers an attenuation range from 0 to 30 dB typ across the full frequency band. Impressive typical performance includes 4 dB insertion loss, a P0.1 dB compression point of +25 dBm, input IP3 of 28 dBm, 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 2.92mm 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	4		30	GHz
Attenuation Range		30		dB
Insertion Loss		4	5	dB
VSWR		1.8:1	2.2:1	
RF Input Power		+30	30	dBm
Input at 0.1 dB Compression Point		+25		dBm
Switching Speed			500	us
Control Voltage	-5		0	Volts
Impedance		50		Ohms
Input IP3		28		dBm
Attenuation Range		30		dB
IL Temperature Coefficient		0.05		dB/deg C

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Absolute Maximum Rating

Parameter	Rating
Control Voltage	-5V ~ +1V
RF Input power	+30dBm

Mechanical Specifications

Size

Length	0.71 in [18.03 mm]
Width	0.37 in [9.4 mm]
Height	0.67 in [17.02 mm]
Weight	0.05 lbs [22.68 g]
Input Connector	Field Replaceable 2.92mm Female
Output Connector	Field Replaceable 2.92mm 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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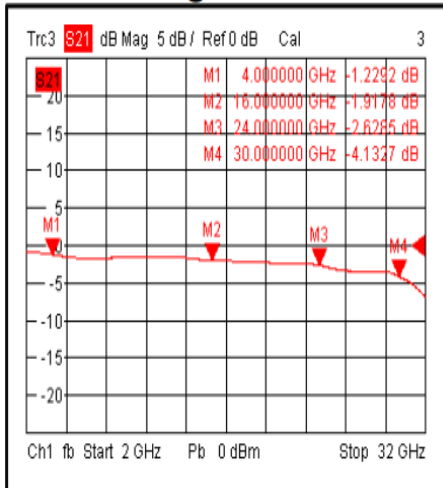


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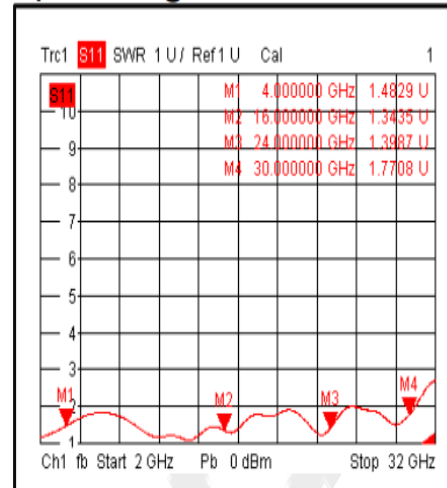
Functional Block Diagram

Performance Data

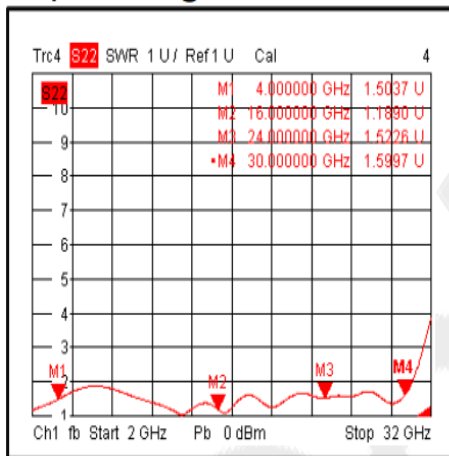
Insertion Loss @+25°C



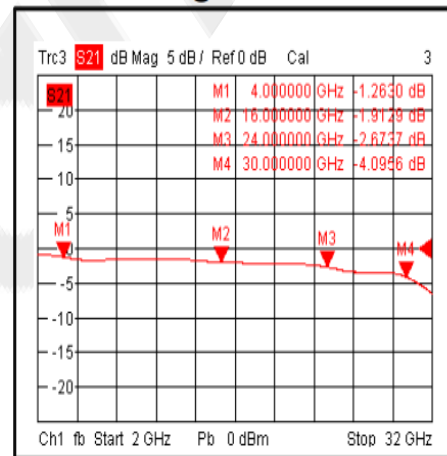
Input VSWR @+25°C



Output VSWR @+25°C



Insertion Loss @-40°C

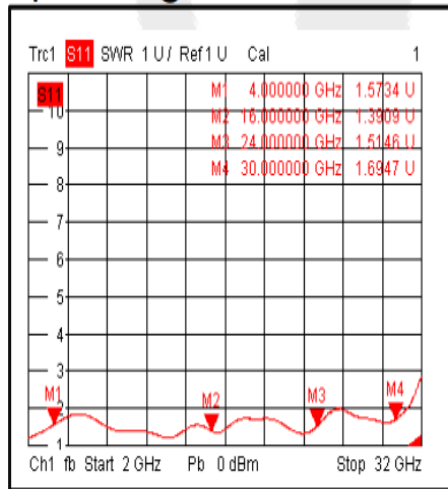


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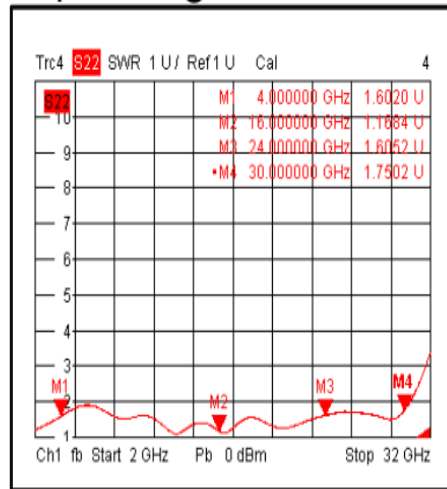
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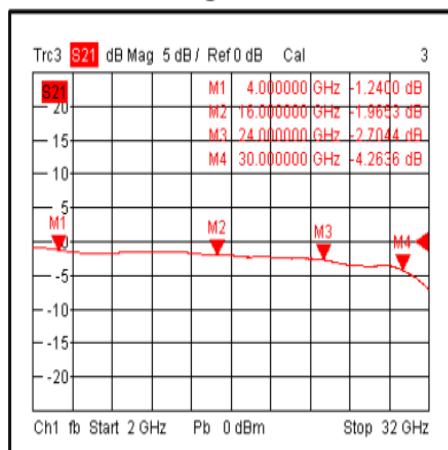
Input VSWR @-40°C



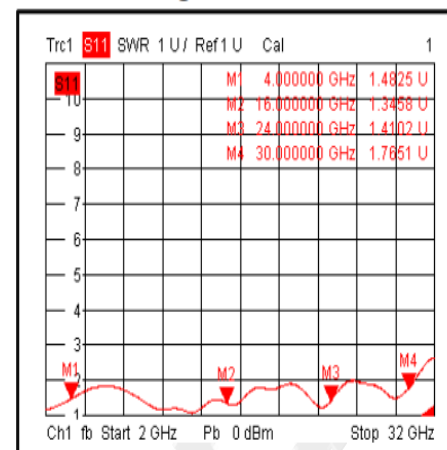
Output VSWR @-40°C



Insertion Loss @+85°C



Input VSWR @+85°C

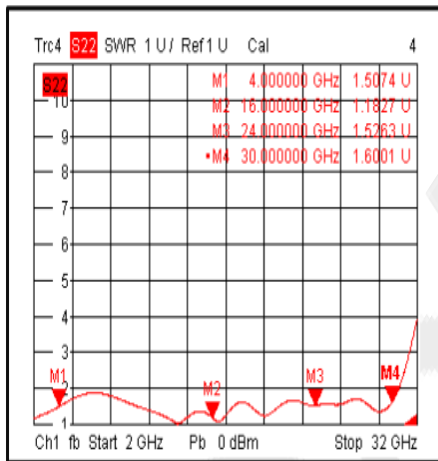


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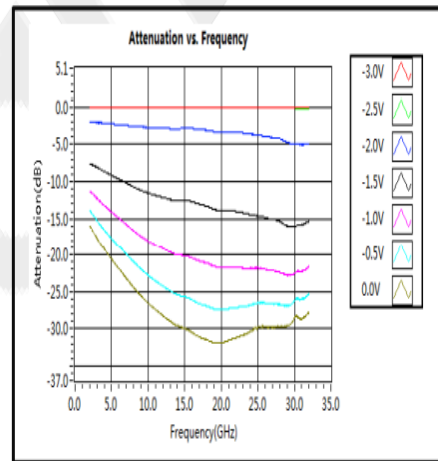
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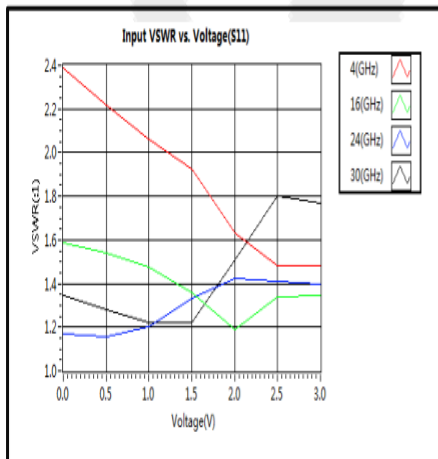
Output VSWR @+85°C



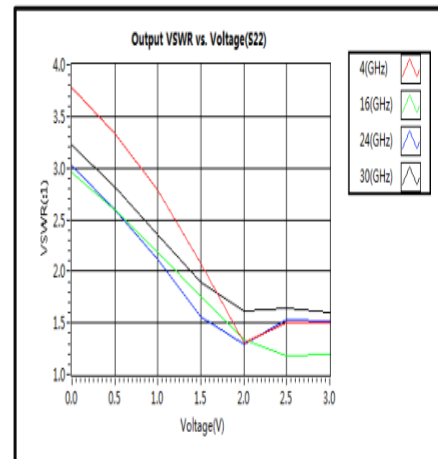
Attenuation vs. Frequency



VSWR vs. Voltage (S11)



VSWR vs. Voltage (S22)

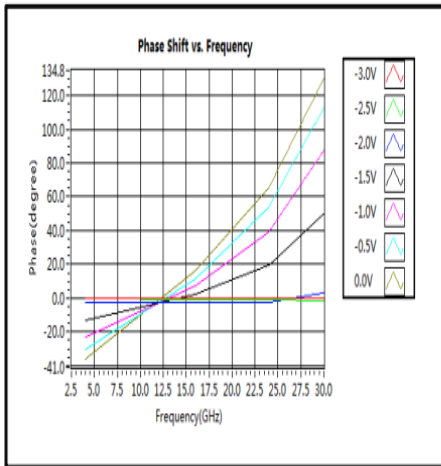


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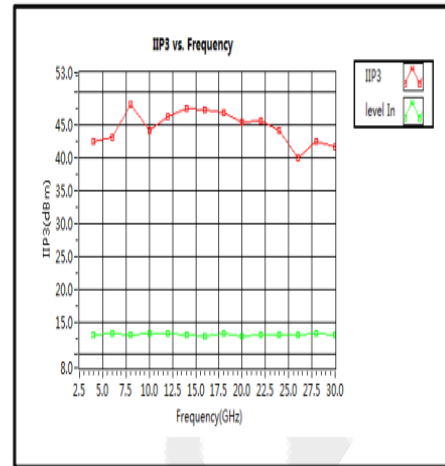


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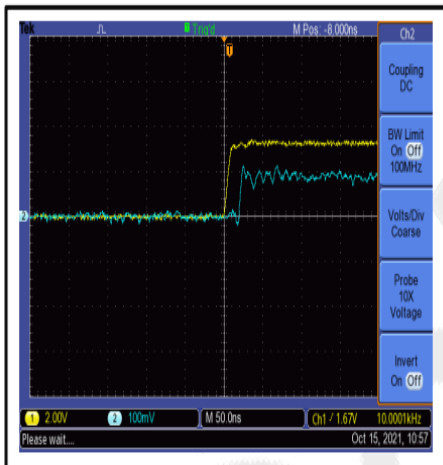
Phase Shift vs. Frequency



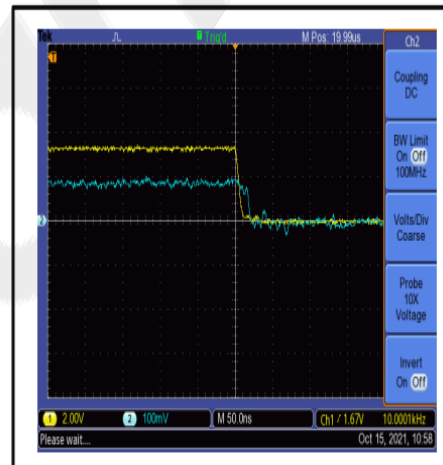
IIP3



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: [4 GHz to 30 GHz Absorptive Voltage Variable Attenuator, 30 dB, Field Replaceable 2.92mm PE70A2005](https://www.pasternack.com/30db-voltage-variable-30-dbm-attenuator-pin-diode-30-ghz-2.92mm-pe70a2005-p.aspx)

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PE70A2005 CAD Drawing

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