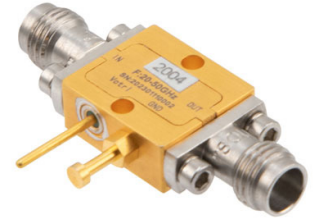


20 GHz to 50 GHz Absorptive Voltage Variable Attenuator, 40 dB, Field Replaceable 2.4mm



PE70A2004

Features

- Absorptive Voltage Controlled Attenuator
- 20 GHz to 50 GHz
- Attenuation Range 0 to 40 dB typ
- Insertion Loss 4 dB typ
- P0.1 dB Compression Power +24 dBm typ
- Input IP3 32 dBm typ
- Max RF Input Power +24 dBm
- Control Voltage -5V to 0V
- 50 Ohm Circuit Design uses Series Topology
- Field Replaceable 2.4mm 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

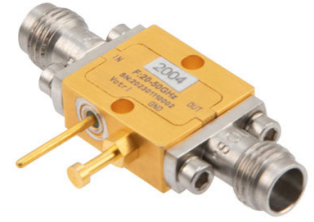
Description

The PE70A2004 is an Absorptive Analog Voltage Variable Attenuator module that operates across a wide frequency range from 20 GHz to 50 GHz and supports a single voltage control of -5V to 0V with 30 mA of DC Current. The 50 ohm circuit design uses series-shunt reflective topology and offers an attenuation range from 0 to 40 dB typ across the full frequency band. Impressive typical performance includes 4 dB insertion loss, a P0.1 dB compression point of +24 dBm, input IP3 of 32 dBm, and a maximum RF input power level of +24 dBm. The low profile miniature pin package is aluminum with gold plating and supports field replaceable 2.4mm 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	20		50	GHz
Attenuation Range		40		dB
Insertion Loss		4	5	dB
VSWR		1.7:1	2:1	
RF Input Power		+24	24	dBm
Input at 0.1 dB Compression Point		+24		dBm
Control Voltage	-5		0	Volts
Impedance		50		Ohms
Input IP3		32		dBm
Attenuation Range		40		dB
IL Temperature Coefficient		0.05		dB/deg C

20 GHz to 50 GHz Absorptive Voltage Variable
Attenuator, 40 dB, Field Replaceable 2.4mm



PE70A2004

Absolute Maximum Rating

Parameter	Rating
Control Voltage	-5-0V
RF Input power	+30dBm

Mechanical Specifications

Size

Length	0.59 in [14.99 mm]
Width	0.24 in [6.1 mm]
Height	0.51 in [12.95 mm]
Weight	0.05 lbs [22.68 g]
Input Connector	Field Replaceable 2.4mm Female
Output Connector	Field Replaceable 2.4mm Female
Power and Control	Solder Pin

Environmental Specifications

Temperature

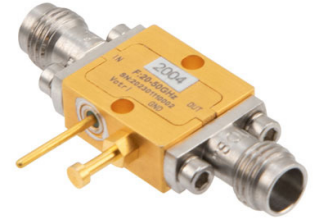
Operating Range	-40 to +85 deg C
Storage Range	-50 to +105 deg C
Humidity	100% RH at 35°C, 95% RH at 40°C
Shock	20G for 11 msec half sine wave, 3 axis both directions
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Altitude	30,000 Feet

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

Plotted and Other Data

Notes:

20 GHz to 50 GHz Absorptive Voltage Variable Attenuator, 40 dB, Field Replaceable 2.4mm

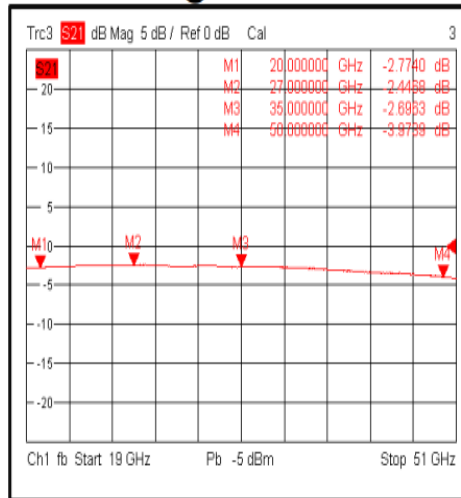


PE70A2004

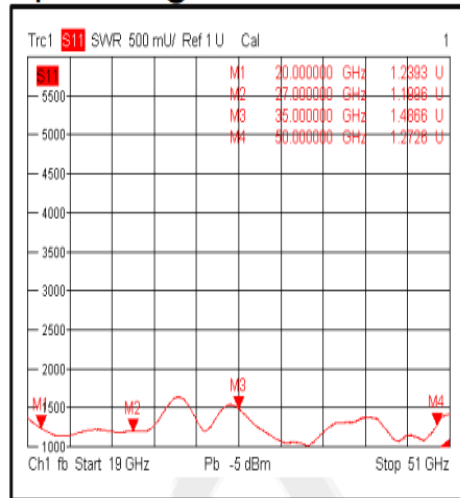
Functional Block Diagram

Performance Data

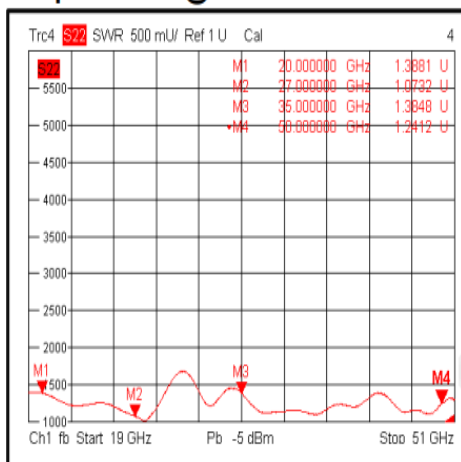
Insertion Loss@+25°C



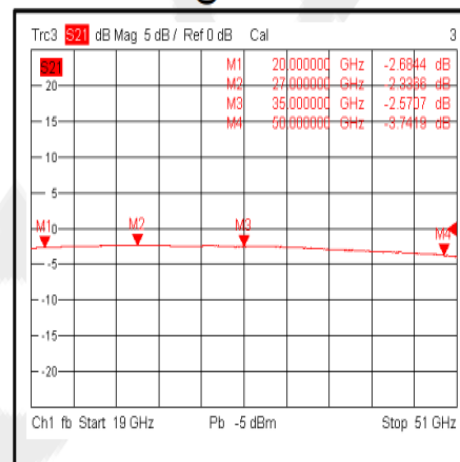
Input VSWR @+25°C



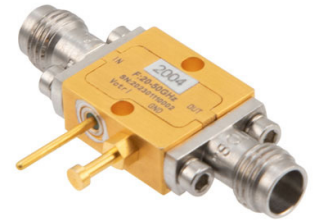
Output VSWR @+25°C



Insertion Loss @-40°C

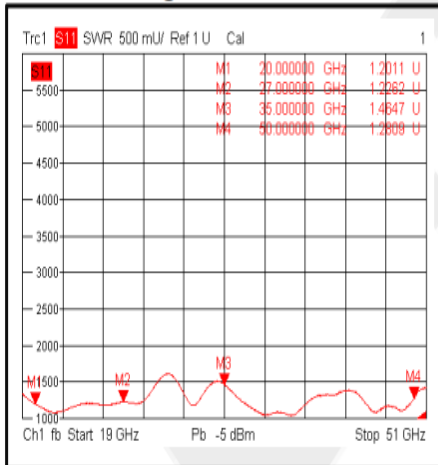


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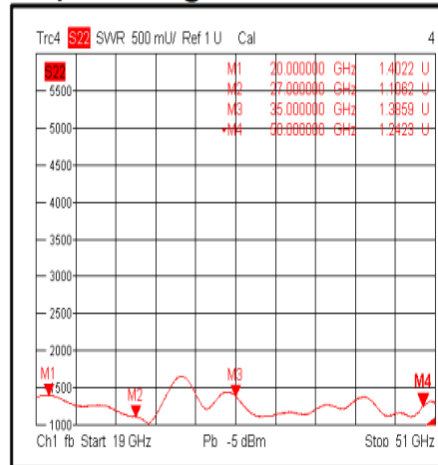


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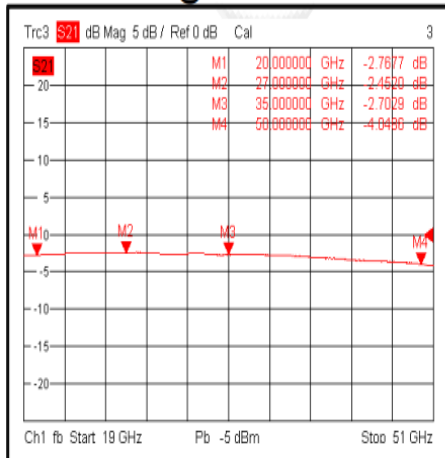
Input VSWR @-40°C



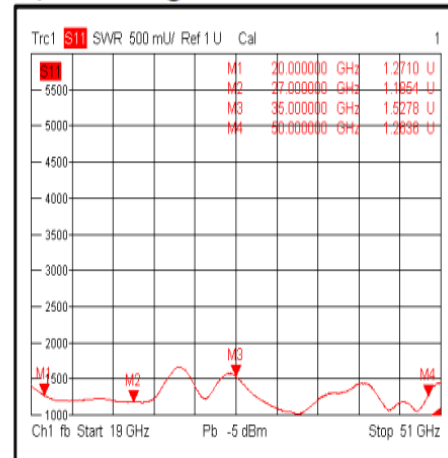
Output VSWR @-40°C



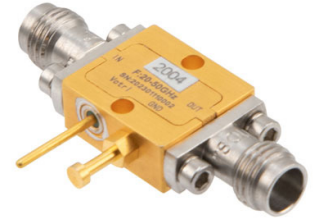
Insertion Loss @+85°C



Input VSWR @+85°C

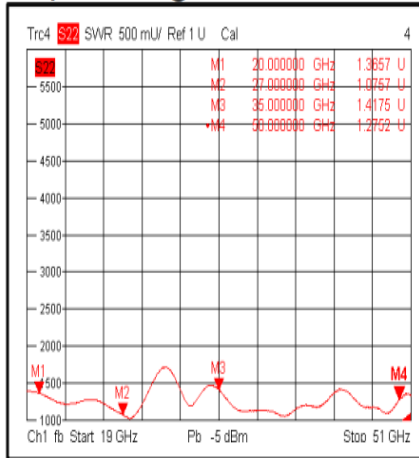


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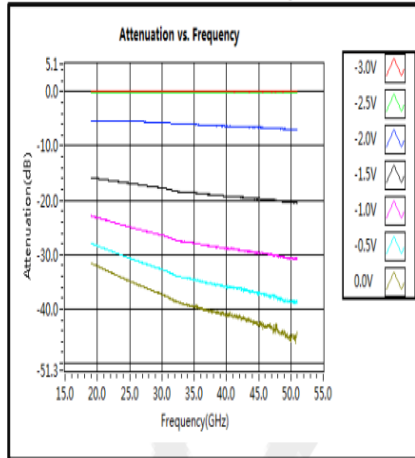


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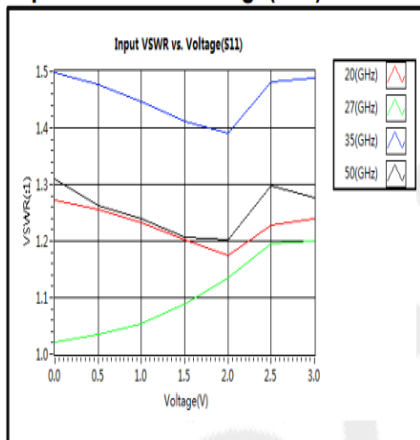
Output VSWR @+85°C



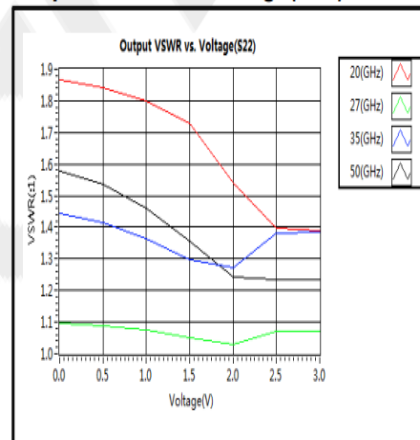
Attenuation vs. Frequency



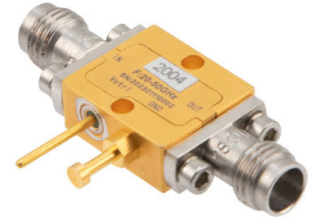
Input VSWR vs. Voltage(S11)



Output VSWR vs. Voltage(S22)

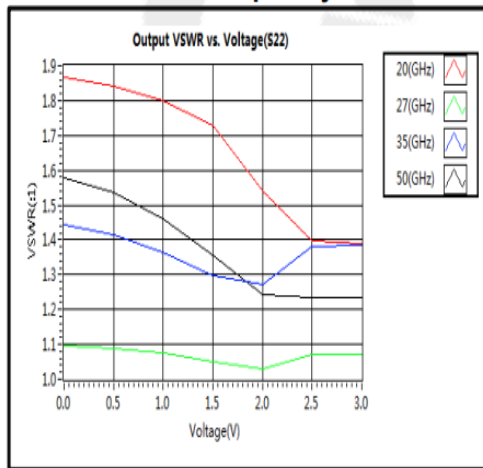


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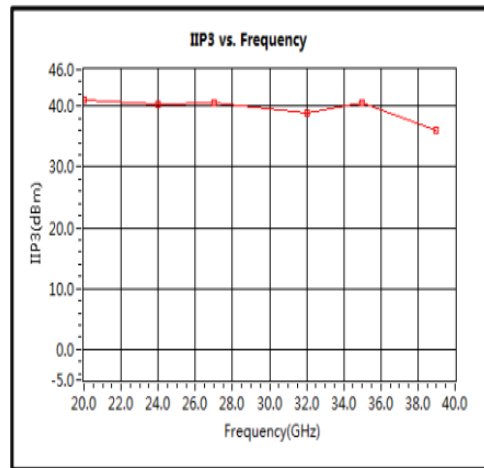


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Phase Shift vs. Frequency



IIP3



20 GHz to 50 GHz Absorptive Voltage Variable Attenuator, 40 dB, Field Replaceable 2.4mm 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: [20 GHz to 50 GHz Absorptive Voltage Variable Attenuator, 40 dB, Field Replaceable 2.4mm PE70A2004](https://www.pasternack.com/40db-voltage-variable-24-dbm-attenuator-pin-diode-50-ghz-2.4mm-pe70a2004-p.aspx)

URL: <https://www.pasternack.com/40db-voltage-variable-24-dbm-attenuator-pin-diode-50-ghz-2.4mm-pe70a2004-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.

PE70A2004 CAD Drawing
20 GHz to 50 GHz Absorptive Voltage Variable Attenuator, 40 dB, Field Replaceable 2.4mm

