

2 GHz to 18 GHz Reflective Voltage Control Attenuator, 30 dB, Field Replaceable SMA

The FMAT2006 is a Reflective Analog Voltage Variable Attenuator module that operates across a broadband frequency range from 2 GHz to 18 GHz and supports a single voltage control of 0V to 10V with 15 mA of DC Current. The 50 ohm circuit design uses a reflective topology and offers an attenuation range from 0 to 30 dB across the full frequency band. Impressive typical performance includes 1.3 dB insertion loss, a P0.1dB compression point of +30 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 | Min | Typ | Max | Unit |
|-----------------------------------|-----|---------|-------|----------|
| Frequency Range | 2 | | 18 | GHz |
| Attenuation Range | | 30 | | dB |
| Insertion Loss | | 1.3 | 1.8 | dB |
| VSWR | | 1.5:1 | 1.8:1 | |
| RF Input Power | | +30 | +30 | dBm |
| Input at 0.1 dB Compression Point | | +30 | | dBm |
| Switching Speed | | | 2.5 | us |
| Control Voltage | | 0 to 10 | | Volts |
| DC Current | | 15 | | mA |
| Impedance | | 50 | | Ohms |
| Input IP3 | | 45 | | dBm |
| IL Temperature Coefficient | | 0.003 | | dB/deg C |

Absolute Maximum Rating

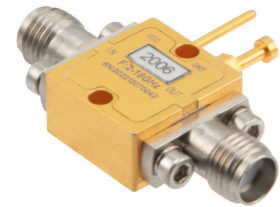
| Parameter | Rating |
|-----------------|--------|
| Control Voltage | 0~ 15V |
| RF Input power | +30dBm |



ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

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 | 0.002 lbs [0.91 g] |
| Input Connector | Field Replaceable SMA Female |
| Output Connector | Field Replaceable SMA Female |



Features:

- Reflective Voltage Controlled Attenuator
- 2 GHz to 18 GHz
- Attenuation Range 0 to 30 dB typ
- Insertion Loss 1.3 dB typ
- P0.1 dB Compression Power +30 dBm typ
- Input IP3 45 dBm typ
- Max RF Input Power +30 dBm typ
- Control Voltage 0V to 10V
- Switching Speed < 2.5 usec
- 50 Ohm Circuit Design uses Series-Shunt 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
- Guaranteed Environmental Test Conditions Altitude, Vibration, Humidity, Shock
- Single Control Operation

Applications:

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

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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

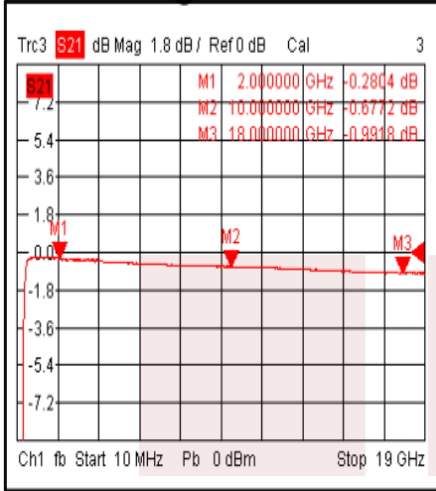
Notes:

- Values at 25 °C, sea level

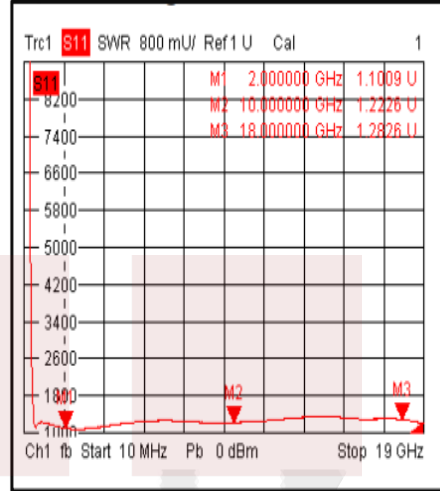


Typical Performance Data

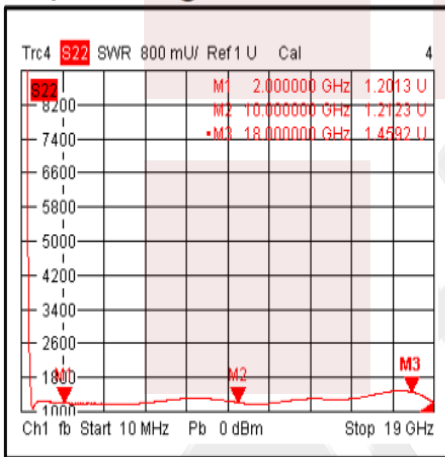
Insertion Loss@+25°C



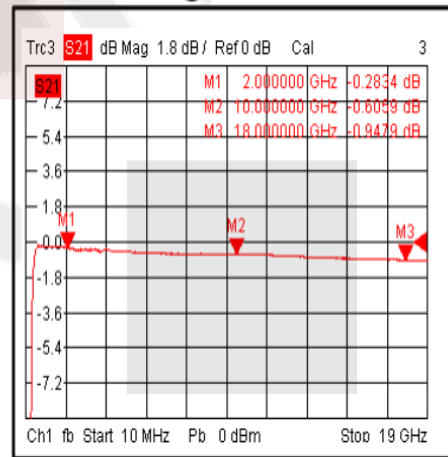
Input VSWR @+25°C



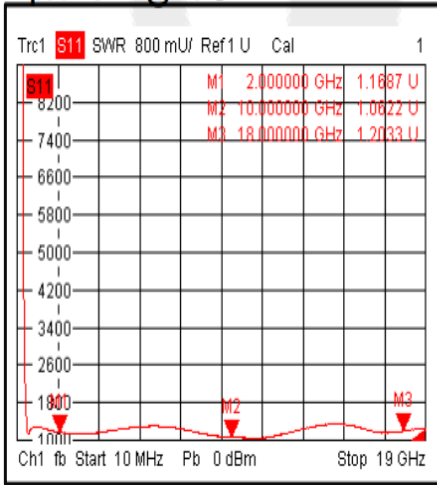
Output VSWR @+25°C



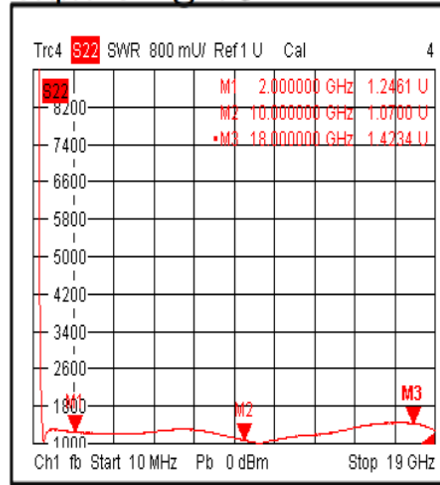
Insertion Loss@-40°C



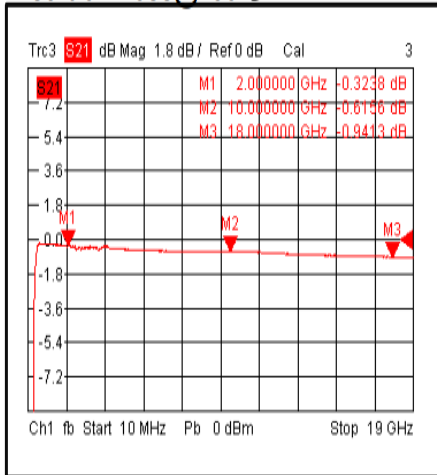
Input VSWR@-40°C



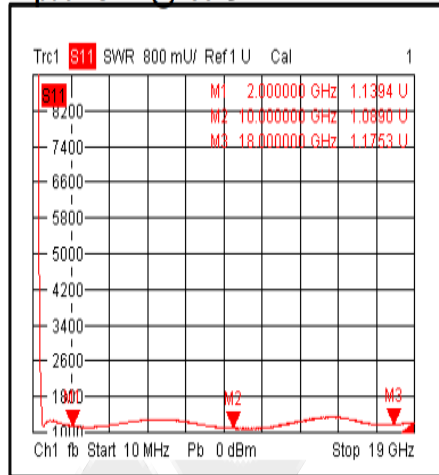
Output VSWR@-40°C



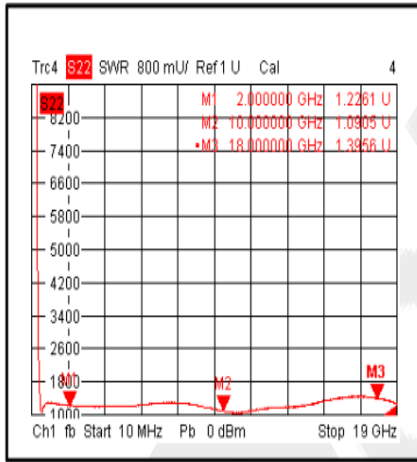
Insertion Loss@+85°C



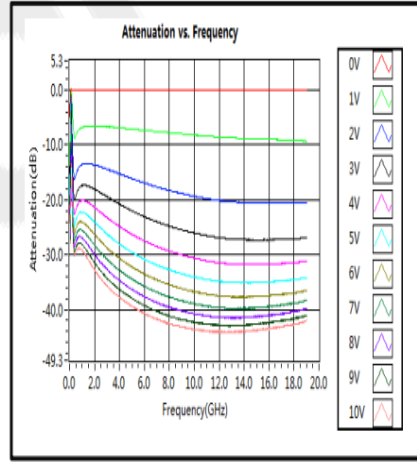
Input VSWR@+85°C



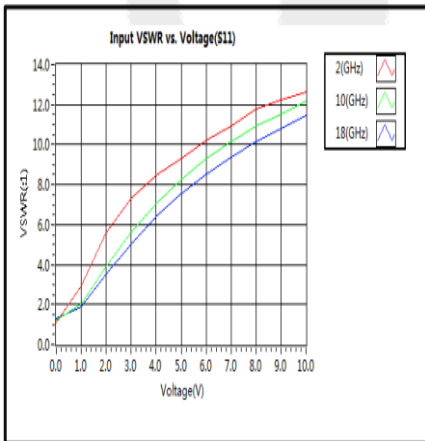
Output VSWR@+85°C



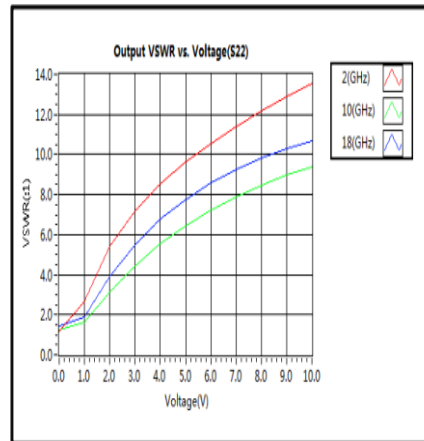
Attenuation vs. Frequency



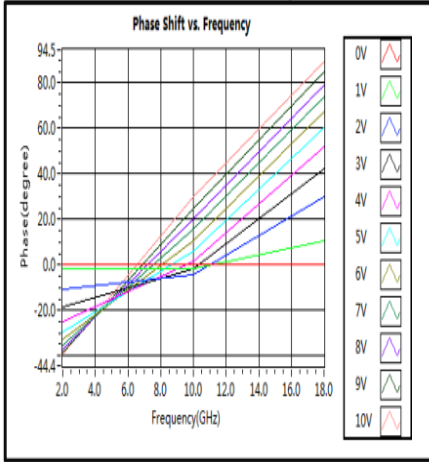
Input VSWR vs. Voltage(S11)



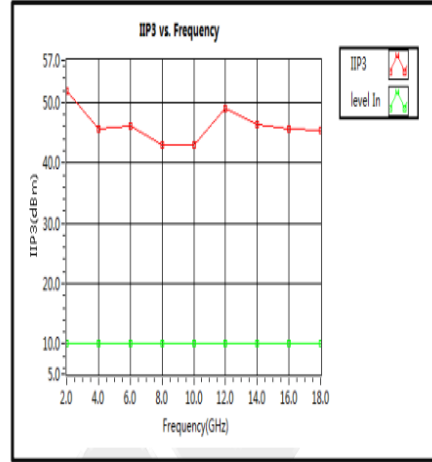
Output VSWR vs. Voltage(S22)



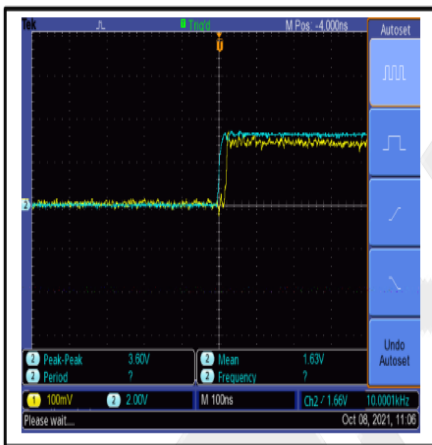
Phase Shift vs. Frequency



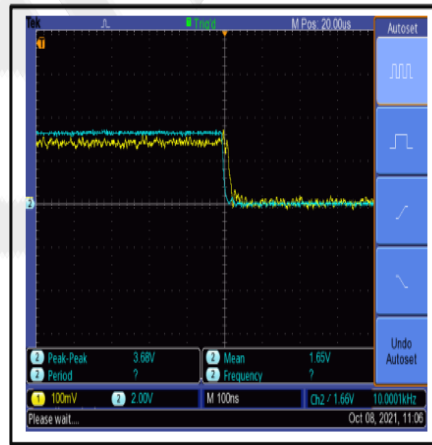
IIP3 vs. Frequency



Speed



Speed



2 GHz to 18 GHz Reflective Voltage Control Attenuator, 30 dB, Field Replaceable SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [2 GHz to 18 GHz Reflective Voltage Control Attenuator, 30 dB, Field Replaceable SMA FMAT2006](#)

URL: <https://www.fairviewmicrowave.com/30db-voltage-variable-30-dbm-attenuator-pin-diode-18-ghz-fmat2006-p.aspx>

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