

Coaxial

# SMA Fixed Attenuator

50Ω 0.5W 30dB DC to 6000 MHz

## VAT-30+



Generic photo used for illustration purposes only

CASE STYLE: FF704

| Connectors | Model   |
|------------|---------|
| SMA        | VAT-30+ |

**+RoHS Compliant**

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### Maximum Ratings

Operating Temperature -45°C to 100°C

Storage Temperature -55°C to 100°C

Permanent damage may occur if any of these limits are exceeded.

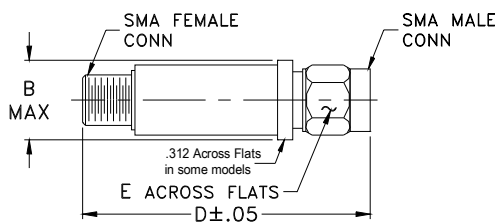
### Features

- wideband coverage, DC to 6000 MHz
- rugged unibody construction
- off-the-shelf availability
- very low cost

### Applications

- impedance matching
- signal level adjustment

### Outline Drawing



### Outline Dimensions (inch/mm)

| B     | D     | E    | wt    |
|-------|-------|------|-------|
| .410  | 1.43  | .312 | grams |
| 10.41 | 36.32 | 7.92 | 10.0  |

### Electrical Specifications

| FREQ.<br>RANGE<br>(MHz)        | ATTENUATION *<br>(dB)<br>Flatness ** |      |         |         |          | VSWR<br>(:1) |      |         |         |      | MAX.<br>INPUT<br>POWER<br>(W) |
|--------------------------------|--------------------------------------|------|---------|---------|----------|--------------|------|---------|---------|------|-------------------------------|
|                                | DC-3 GHz                             |      | 3-5 GHz | 5-6 GHz | DC-6 GHz | DC-3 GHz     |      | 3-5 GHz | 5-6 GHz |      |                               |
|                                | Nom.                                 | Typ. | Typ.    | Typ.    | Typ.     | Typ.         | Max. | Typ.    | Max.    | Typ. |                               |
| f <sub>L</sub> -f <sub>U</sub> |                                      |      |         |         |          |              |      |         |         |      |                               |
| DC-6000                        | 30±0.3                               | 1.10 | 0.70    | 0.35    | 1.30     | 1.05         | 1.20 | 1.15    | 1.30    | 1.25 | 0.5                           |

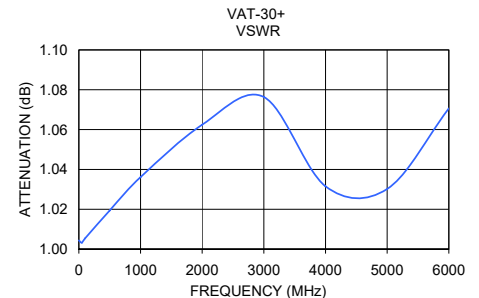
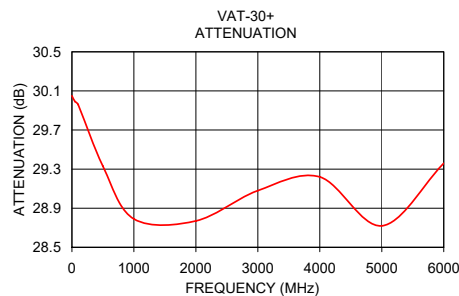
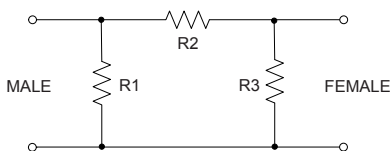
\* Attenuation varies by 0.3 dB max. over temperature.

\*\* Flatness= variation over band divided by 2.

### Typical Performance Data

| Frequency (MHz) | Attenuation (dB) | VSWR (:1) |
|-----------------|------------------|-----------|
| 0.03            | 30.05            | 1.00      |
| 50.00           | 29.99            | 1.00      |
| 100.00          | 29.96            | 1.01      |
| 500.00          | 29.33            | 1.02      |
| 1000.00         | 28.79            | 1.04      |
| 2000.00         | 28.77            | 1.06      |
| 3000.00         | 29.08            | 1.08      |
| 4000.00         | 29.22            | 1.03      |
| 5000.00         | 28.72            | 1.03      |
| 6000.00         | 29.36            | 1.07      |

### Electrical Schematic



### Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.  
 B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.  
 C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCStore/terms.jsp](http://www.minicircuits.com/MCStore/terms.jsp)



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M151107  
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## Typical Performance Data

| FREQUENCY<br>(MHz) | ATTENUATION<br>(dB) | RETURN LOSS<br>(dB) |
|--------------------|---------------------|---------------------|
| 0.03               | 30.05               | 53.27               |
| 50.00              | 29.99               | 55.92               |
| 100.00             | 29.96               | 51.48               |
| 500.00             | 29.33               | 40.37               |
| 1000.00            | 28.79               | 35.02               |
| 2000.00            | 28.77               | 30.38               |
| 3000.00            | 29.08               | 28.69               |
| 4000.00            | 29.22               | 36.19               |
| 5000.00            | 28.72               | 36.56               |
| 6000.00            | 29.36               | 29.34               |

REV. X1  
VAT-30+  
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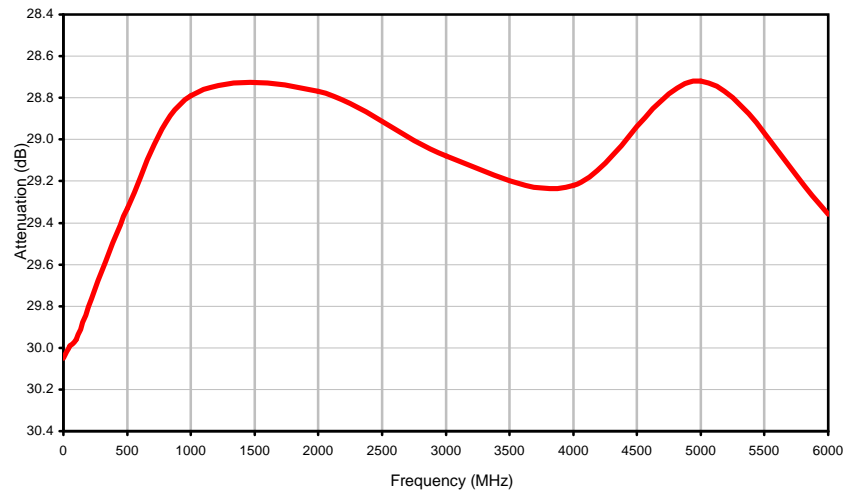


Patent Pending The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see

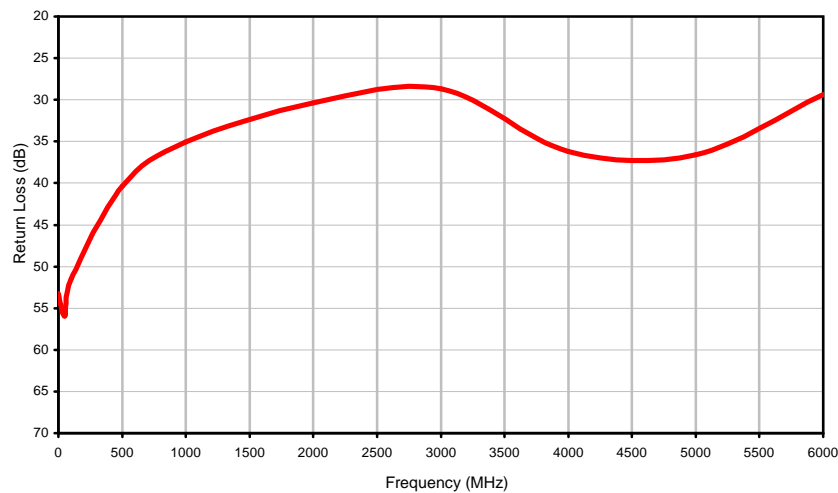


## Typical Performance Curves

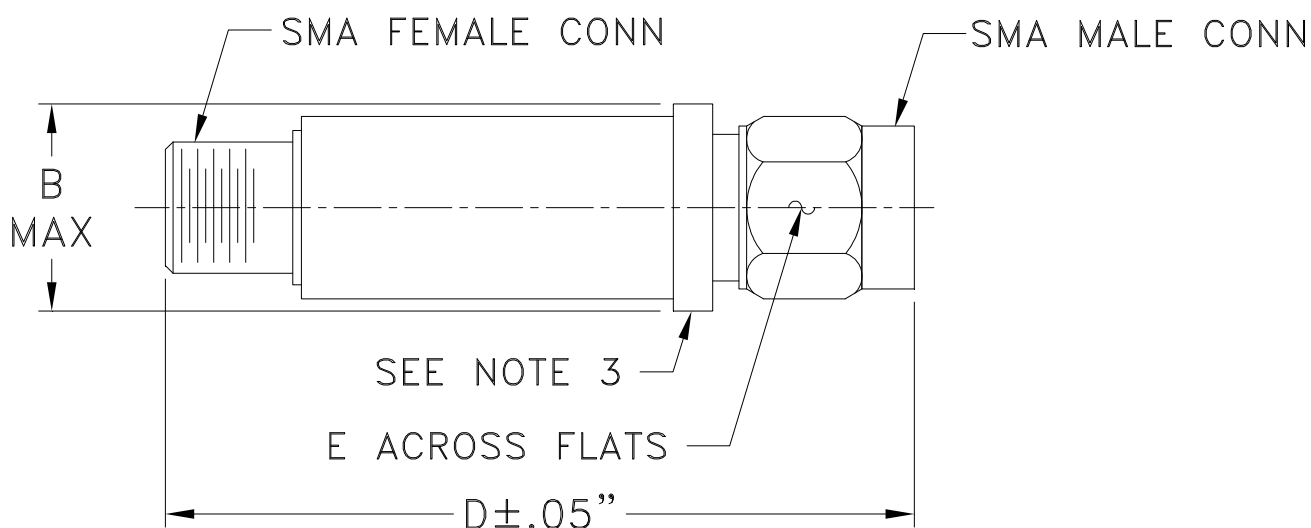
Attenuation



Return Loss



### Outline Dimensions



| CASE #. | A  | B               | C  | D               | E              | WT GRAMS |
|---------|----|-----------------|----|-----------------|----------------|----------|
| FF704   | -- | .410<br>(10.41) | -- | 1.43<br>(36.32) | .312<br>(7.92) | 10.0     |

Dimensions are in inches (mm). Tolerances: 2Pl. ± .04; 3Pl. ± .030

#### Notes:

1. Case material: Stainless steel.
2. Case finish: Gold plated.
3. Round Flange may have .312 Across Flats in some models.



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The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: [www.minicircuits.com](http://www.minicircuits.com)

RF/IF MICROWAVE COMPONENTS



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

| Specification              | Test/Inspection Condition  | Reference/Spec                       |
|----------------------------|--|--------------------------------------|
| Operating Temperature      | -45° to 100° C<br>Ambient Environment  | Individual Model Data Sheet          |
| Storage Temperature        | -55° to 100° C<br>Ambient Environment  | Individual Model Data Sheet          |
| Barometric Pressure        | 100,000 Feet   | MIL-STD-202, Method 105, Condition D |
| Humidity                   | 90% RH, 65°C<br>Units may require bake-out after humidity to restore full performance. | MIL-STD-202, Method 103              |
| Thermal Shock              | -65° to 125°C, 5 cycles  | MIL-STD-202, Method 107, Condition B |
| Vibration (High Frequency) | 20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)    | MIL-STD-202, Method 204, Condition D |
| Mechanical Shock           | 100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)                          | MIL-STD-202, Method 213, Condition I |