

SMA/BNC

# Adaptenuator

NON-CATALOG

SM-BF-6

50Ω 0.5W 6dB DC to 2000 MHz

## Maximum Ratings

Operating Temperature -55°C to 100°C

Storage Temperature -55°C to 150°C

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

## Features

- improved interface matching
- wideband, DC to 2000 MHz, useable to 4000 MHz
- excellent VSWR, 1.1:1 typ.
- excellent flatness,  $\pm 0.1$  dB typ.
- rugged unibody construction



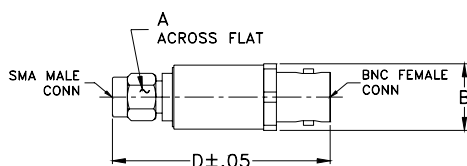
CASE STYLE: DJ871

| Connectors |            | Model   |
|------------|------------|---------|
| Conn1      | Conn2      |         |
| SMA-Male   | BNC-Female | SM-BF-6 |

## Applications

- instrumentation
- provides attenuation and connector type change
- minimizes hardware

## Outline Drawing



## Electrical Specifications

| FREQ.<br>(MHz) | ATTENUATION (dB) |      |      |                |      |                |      | VSWR (:1)     |      |                |      |                |      | MAX.<br>INPUT<br>POWER<br>(W) |
|----------------|------------------|------|------|----------------|------|----------------|------|---------------|------|----------------|------|----------------|------|-------------------------------|
|                | Flatness*        |      |      |                |      |                |      |               |      |                |      |                |      |                               |
|                | DC-500<br>MHz    |      |      | DC-1000<br>MHz |      | DC-2000<br>MHz |      | DC-500<br>MHz |      | DC-1000<br>MHz |      | DC-2000<br>MHz |      |                               |
|                | Nom.             | Typ. | Max. | Typ.           | Max. | Typ.           | Max. | Typ.          | Max. | Typ.           | Max. | Typ.           | Max. |                               |
| DC-2000        | 6±0.3            | 0.05 | 0.15 | 0.10           | 0.20 | 0.15           | 0.25 | 1.1           | 1.2  | 1.1            | 1.2  | 1.2            | 1.25 | 0.5                           |

\*Flatness defined as peak to peak attenuation over band divided by 2.

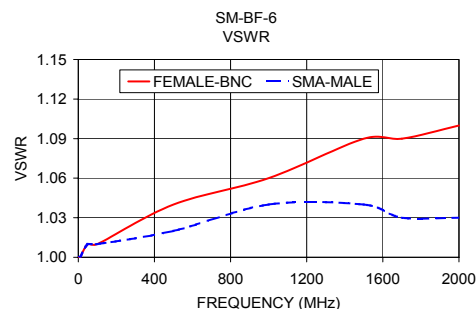
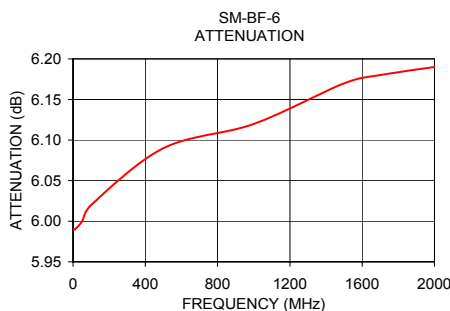
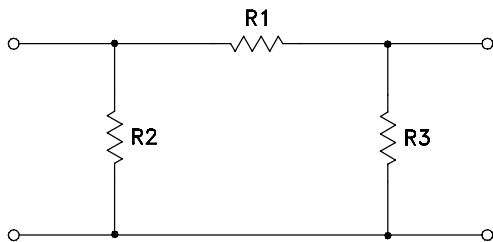
## Typical Performance Data

| FREQUENCY<br>(MHz) | ATTENUATION<br>(dB) | VSWR<br>(:1) |          |
|--------------------|---------------------|--------------|----------|
|                    |                     | BNC-Female   | SMA-Male |
| 1.00               | 5.99                | 1.00         | 1.00     |
| 5.00               | 5.99                | 1.00         | 1.00     |
| 10.00              | 5.99                | 1.00         | 1.00     |
| 50.00              | 6.00                | 1.01         | 1.01     |
| 100.00             | 6.02                | 1.01         | 1.01     |
| 500.00             | 6.09                | 1.04         | 1.02     |
| 1000.00            | 6.12                | 1.06         | 1.04     |
| 1500.00            | 6.17                | 1.09         | 1.04     |
| 1700.00            | 6.18                | 1.09         | 1.03     |
| 2000.00            | 6.19                | 1.10         | 1.03     |

## Outline Dimensions (inch/mm)

| A    | B     | D     | wt    |
|------|-------|-------|-------|
| .312 | .55   | 1.68  | grams |
| 7.92 | 13.97 | 42.67 | 18.8  |

## 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/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



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REV. D  
 M160892  
 EE-9890  
 SM-BF-6  
 URJ/TD/CP/AM  
 171212

## Typical Performance Data

| FREQUENCY<br>(MHz) | ATTENUATION<br>(dB) | BNC-FEMALE<br>RETURN LOSS<br>(dB) | SMA-MALE<br>RETURN LOSS<br>(dB) |
|--------------------|---------------------|-----------------------------------|---------------------------------|
| 1                  | 5.99                | 46.06                             | 46.06                           |
| 5                  | 5.99                | 46.06                             | 46.06                           |
| 10                 | 5.99                | 46.06                             | 46.06                           |
| 50                 | 6.00                | 46.06                             | 46.06                           |
| 100                | 6.02                | 46.06                             | 46.06                           |
| 500                | 6.09                | 34.15                             | 40.09                           |
| 1000               | 6.12                | 30.71                             | 34.15                           |
| 1500               | 6.17                | 27.32                             | 34.15                           |
| 1700               | 6.18                | 27.32                             | 36.61                           |
| 2000               | 6.19                | 26.44                             | 36.61                           |

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SM-BF-6  
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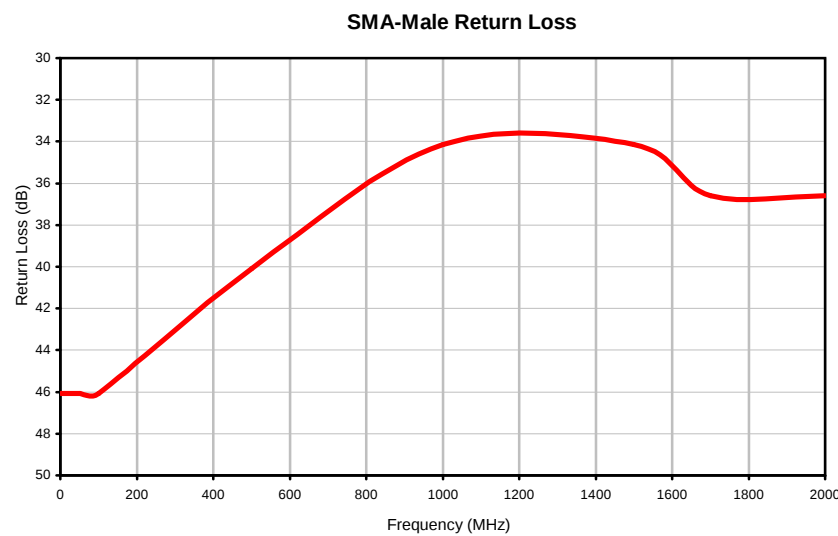
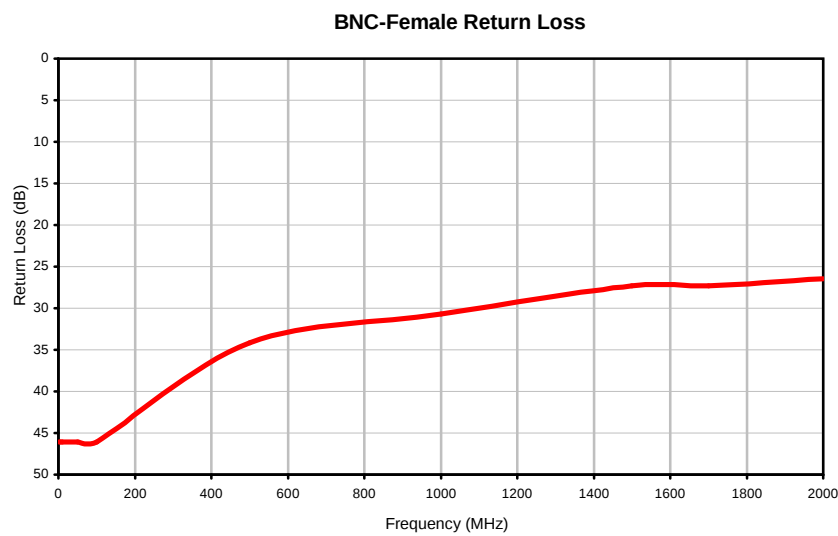
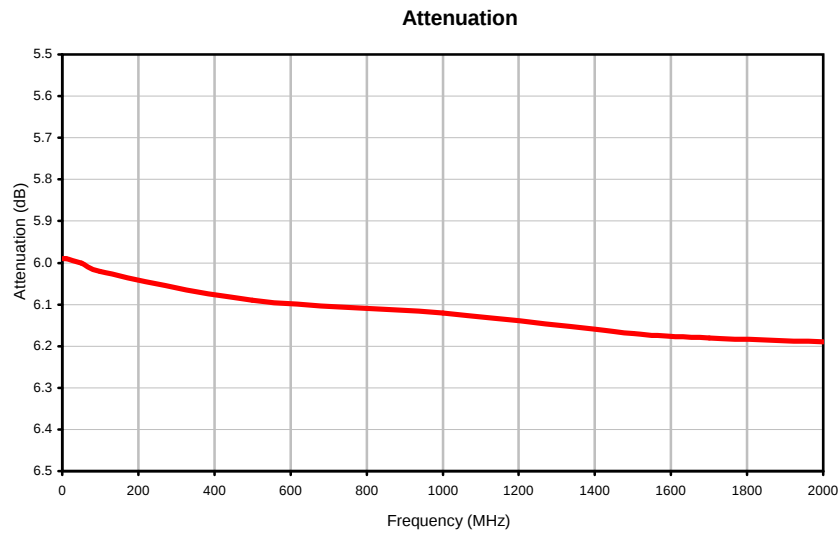
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## Typical Performance Curves



REV. X1

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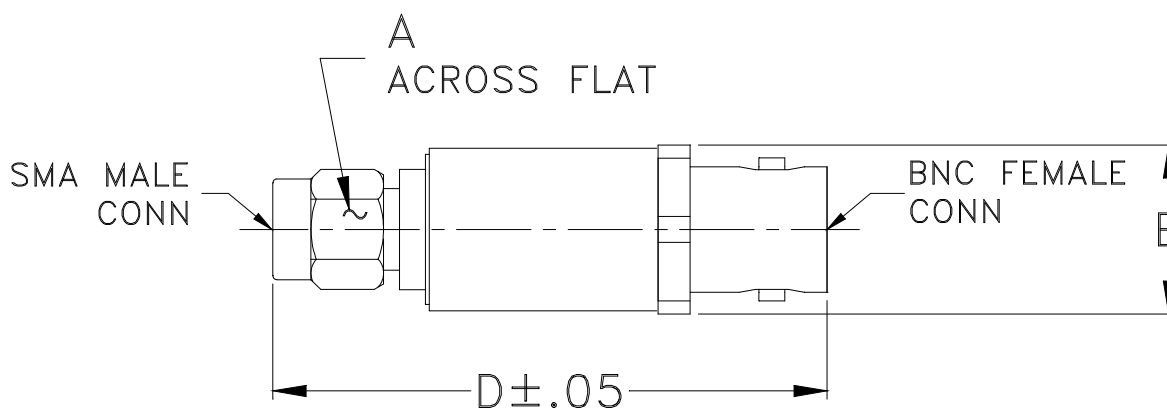
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## Outline Dimensions



| CASE# | A              | B              | C        | D               | E        | WT. GRAM |
|-------|----------------|----------------|----------|-----------------|----------|----------|
| DJ871 | .312<br>(7.92) | .55<br>(13.97) | --<br>-- | 1.68<br>(42.67) | --<br>-- | 18.8     |

Dimensions are in inches (mm). Tolerances: 2 Pl. ± .03; 3 Pl. ± .015

### Notes:

1. Case material: Brass.
2. Finish: Nickel plate.



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      | -55° 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 |