

# Precision Fixed Attenuator

## BW-S2W5+

50Ω 5W 2dB DC to 18000 MHz



Generic photo used for illustration purposes only

CASE STYLE: DC737

|                     |          |
|---------------------|----------|
| Connectors          | Model    |
| SMA Female-SMA Male | BW-S2W5+ |

**+RoHS Compliant**

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

### Maximum Ratings

|                       |                  |
|-----------------------|------------------|
| Operating Temperature | -55°C to 100°C   |
| Storage Temperature   | -55°C to 100°C** |

\*\*With mated connectors. Unmated, 85°C max.  
Permanent damage may occur if any of these limits are exceeded.

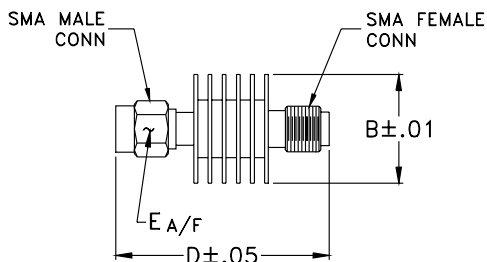
### Features

- DC to 18000 MHz
- precise attenuation
- excellent VSWR, 1.20 typ.
- stainless steel SMA male and female connectors

### Applications

- matching
- instrumentation
- test set-ups

### Outline Drawing



### Outline Dimensions (inch/mm)

| B     | D     | E    | wt    |
|-------|-------|------|-------|
| .61   | 1.20  | .312 | grams |
| 15.49 | 30.48 | 7.92 | 9.1   |

### Electrical Specifications

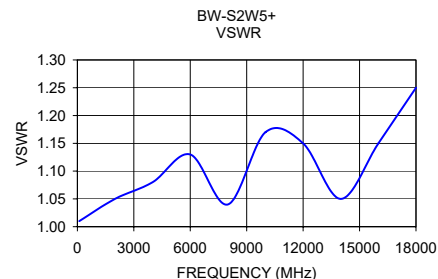
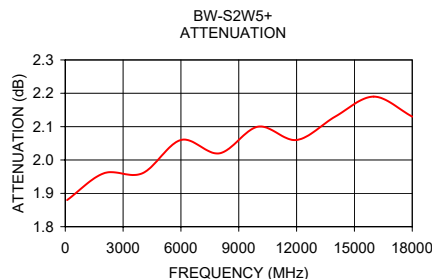
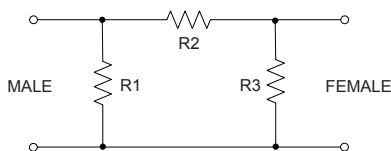
| FREQ. RANGE (MHz) | ATTENUATION <sup>1</sup> (dB) |          | VSWR <sup>2</sup> (:1) |              |                 | MAX. INPUT POWER <sup>3</sup> (W) |
|-------------------|-------------------------------|----------|------------------------|--------------|-----------------|-----------------------------------|
|                   | Nom.                          | ACCURACY | DC-4 GHz Max.          | 4-8 GHz Max. | 8-12.4 GHz Max. |                                   |
| $f_L$ - $f_U$     |                               |          |                        |              |                 |                                   |
| DC-18000          | 2                             | ±0.40    | 1.20                   | 1.25         | 1.30            | 5                                 |

1. At 25°C, accuracy includes frequency and power variations. Temperature coefficient for attenuation: .0004dB/dB/°C typ.
2. VSWR from 12.4 to 18 GHz, 1.6:1 typ.
3. Average power at 25°C ambient, derate linearly to 2W at 100°C. Peak Power 125W max. 5µsec pulse width, 100 Hz PRF.

### Typical Performance Data

| Frequency (MHz) | Attenuation (dB) | VSWR (:1) |
|-----------------|------------------|-----------|
| 100.00          | 1.88             | 1.01      |
| 2000.00         | 1.96             | 1.05      |
| 4000.00         | 1.96             | 1.08      |
| 6000.00         | 2.06             | 1.13      |
| 8000.00         | 2.02             | 1.04      |
| 10000.00        | 2.10             | 1.17      |
| 12000.00        | 2.06             | 1.15      |
| 14000.00        | 2.13             | 1.05      |
| 16000.00        | 2.19             | 1.15      |
| 18000.00        | 2.13             | 1.25      |

### Electrical Schematic



### Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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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# BW-S2W5+

## Typical Performance Data

| FREQUENCY<br>(MHz) | ATTENUATION<br>(dB) | RETURN LOSS<br>(dB) |
|--------------------|---------------------|---------------------|
| 100.00             | 1.88                | 46.06               |
| 2000.00            | 1.96                | 32.26               |
| 4000.00            | 1.96                | 28.30               |
| 6000.00            | 2.06                | 24.29               |
| 8000.00            | 2.02                | 34.15               |
| 10000.00           | 2.10                | 22.12               |
| 12000.00           | 2.06                | 23.13               |
| 14000.00           | 2.13                | 32.26               |
| 16000.00           | 2.19                | 23.13               |
| 18000.00           | 2.13                | 19.08               |

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BW-S2W5+  
061107  
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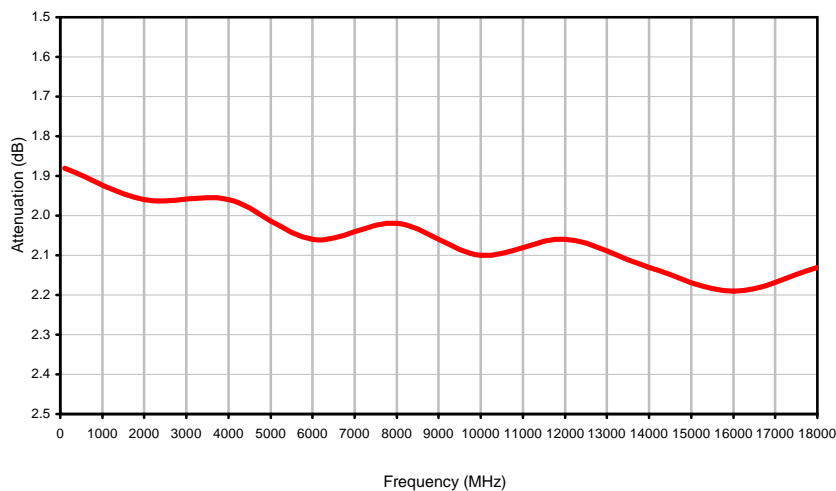


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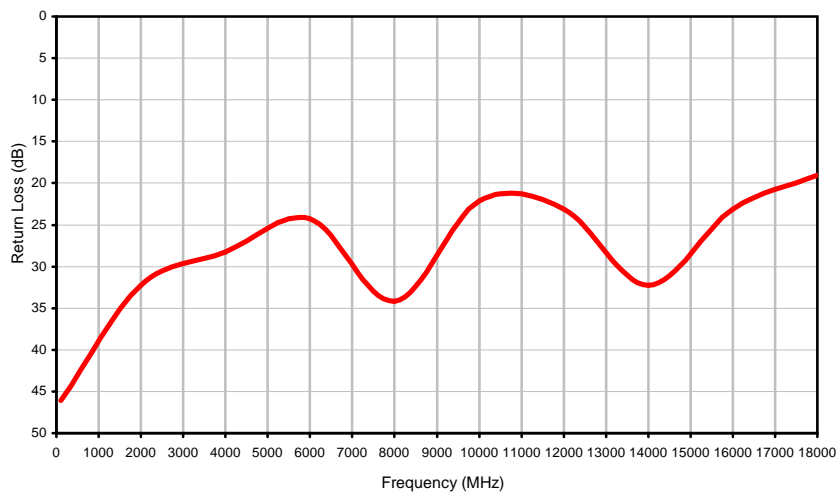


## Typical Performance Curves

### Attenuation

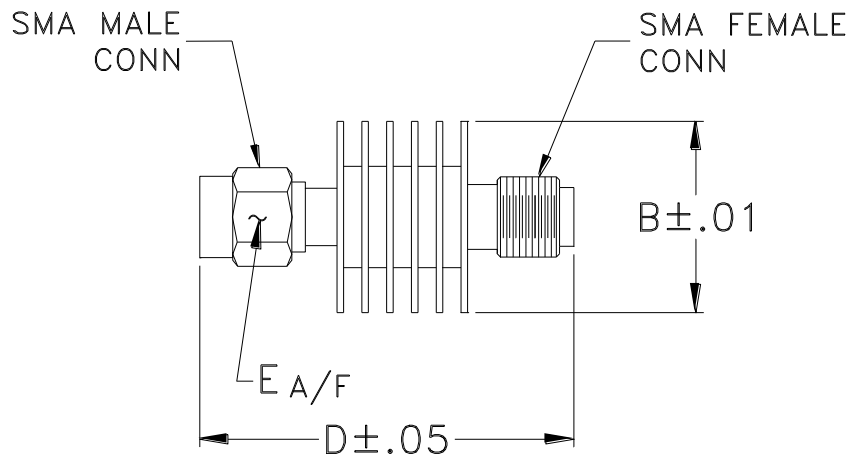


### Return Loss



## Outline Dimensions

DC737



| CASE# | A  | B              | C  | D               | E              | WT. GRAMS |
|-------|----|----------------|----|-----------------|----------------|-----------|
| DC737 | -- | .61<br>(15.49) | -- | 1.20<br>(30.48) | .312<br>(7.92) | 9.1       |

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

### Notes:

1. Case material: Aluminum alloy.
2. Case finish: Black anodize.



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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.

| <b>Specification</b>       | <b>Test/Inspection Condition</b>   | <b>Reference/Spec</b>                |
|----------------------------|--|--------------------------------------|
| 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 |