



COAXIAL

# Fixed Attenuator

HAT-A-SERIES

Mini-Circuits

50Ω

Up to 2W

DC to 2000 MHz

## THE BIG DEAL

- Wideband coverage, DC to 2000 MHz
- Up to 2 Watt rating
- Rugged unibody construction
- Excellent VSWR
- Excellent flatness

## APPLICATIONS

- Signal level adjustment
- Impedance matching

勝特力電材超市-龍山店 886-3-5773766  
 勝特力電材超市-光復店 886-3-5729570  
 勝特力電子(上海) 86-21-34970699  
 勝特力電子(深圳) 86-755-83298787  
<http://www.100y.com.tw>



Generic photo used for illustration purposes only

|            |                     |
|------------|---------------------|
| Model No.  | HAT-A-SERIES        |
| Case Style | FF747               |
| Connectors | BNC Male-BNC Female |

### +RoHS Compliant

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

## PRODUCT OVERVIEW

Mini-Circuits' HAT-A series are fixed attenuators from DC to 2000 MHz frequency range with excellent flatness in attenuation. HAT-A series is available with nominal attenuation of 1 to 30 dB. This attenuator series support testing and measurement application. Precise performance, excellent VSWR and rugged unibody construction makes this model ideal solution for systems requiring precise attenuation across very wide frequency range.

## KEY FEATURES

| Feature             | Advantages                                      |
|---------------------|---|
| Rugged construction | Excellent durability for a long lifetime of use |
| Up to 2 Watt rating | Good power handling                             |
| Excellent VSWR      | Well matched for 50Ω systems                    |
| Flat attenuation    | Good performance over the band.                 |

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# Fixed Attenuator

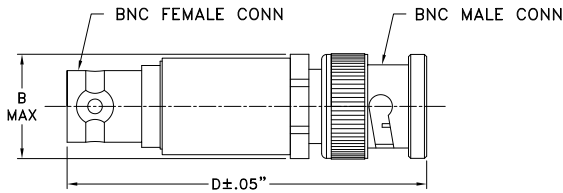
HAT-12A+

## 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.

## OUTLINE DRAWING

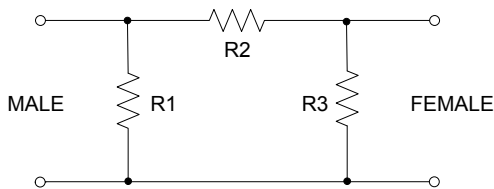


## OUTLINE DIMENSIONS (Inch/mm)

|       |       |       |
|-------|-------|-------|
| B     | D     | wt    |
| .62   | 1.94  | grams |
| 15.75 | 49.28 | 30.0  |

Note: Please refer to case style drawing for details

## ELECTRICAL SCHEMATIC



## ELECTRICAL SPECIFICATIONS AT 25°C

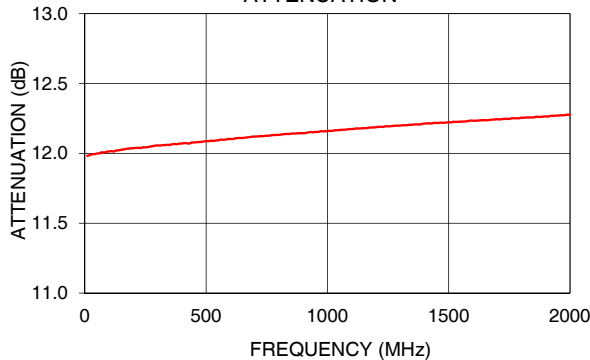
| Parameter                                     | Condition (MHz) | Min. | Typ.     | Max. | Unit |
|---|-----------------|------|----------|------|------|
| Frequency Range                               |                 | DC   | -        | 2000 | MHz  |
| Attenuation <sup>1</sup> nominal <sup>3</sup> | 10              | -    | 12 ± 0.3 | -    | dB   |
| Attenuation Flatness <sup>2</sup>             | DC - 500        | -    | 0.20     | -    | dB   |
|   | DC - 1000       | -    | 0.20     | -    |      |
|   | DC - 2000       | -    | 0.30     | -    |      |
| VSWR  | DC - 500        | -    | 1.30     | -    | :1   |
|   | DC - 1000       | -    | 1.30     | -    |      |
|   | DC - 2000       | -    | 1.35     | -    |      |
| Input Power <sup>4</sup>                      |                 | -    | -        | 1.1  | W    |

1. Attenuation varies by 0.3 dB max. over temperature.
2. Flatness = variation over band divided by 2.
3. Nominal attenuation at 10 MHz
4. RF power at 25°C is 1.1W; Derate linearly to 0.8W at 85°C

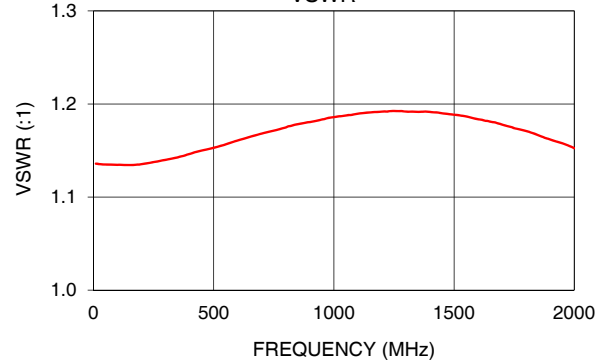
## TYPICAL PERFORMANCE DATA

| Frequency (MHz) | Attenuation (dB) | VSWR (:1) |
|-----------------|------------------|-----------|
| 10              | 11.98            | 1.14      |
| 50              | 12.00            | 1.14      |
| 100             | 12.01            | 1.13      |
| 250             | 12.04            | 1.14      |
| 400             | 12.07            | 1.15      |
| 500             | 12.09            | 1.15      |
| 600             | 12.10            | 1.16      |
| 800             | 12.13            | 1.17      |
| 1000            | 12.16            | 1.19      |
| 1200            | 12.19            | 1.19      |
| 1300            | 12.20            | 1.19      |
| 1500            | 12.22            | 1.19      |
| 1700            | 12.25            | 1.18      |
| 1800            | 12.26            | 1.17      |
| 2000            | 12.28            | 1.15      |

HAT-12A+ ATTENUATION



HAT-12A+ VSWR



### 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)

