DESIGNER'S KIT K1-HAT-A+

# Fixed Attenuators

50Ω DC to 2 GHz

## FEATURES

- One unit each of 3, 6, 10, 20 and 30 dB precision attenuators
- Input power up to 2W Max.
- Excellent VSWR,1.20:1 to 1.60:1 typ.
- Excellent flatness, 0.20 to 0.60 dB typ.
- BNC Male and Female connectors
- Length less than 2"
- Wideband, DC to 2 GHz, 50Ω

MINI-CIRCUITS DESIGNER'S KITS SPEED UP THE SOLUTION

RoHS COMPLIANT

## PRODUCT OVERVIEW

K1-HAT-A+ is a designer's kit consisting of five different attenuator models in the HAT-A+ family. There is one unit per model for a total of five units. Mini-Circuits' HAT-A series are fixed attenuators operating from DC to 2000 MHz with excellent attenuation flatness. This attenuator series supports testing and measurement applications. Precise performance, excellent VSWR and rugged unibody construction make these models an ideal solution for systems requiring precise attenuation.

## K1-HAT-A+ ELECTRICAL SPECIFICATIONS

(5 models, 1 of each, 5 total)

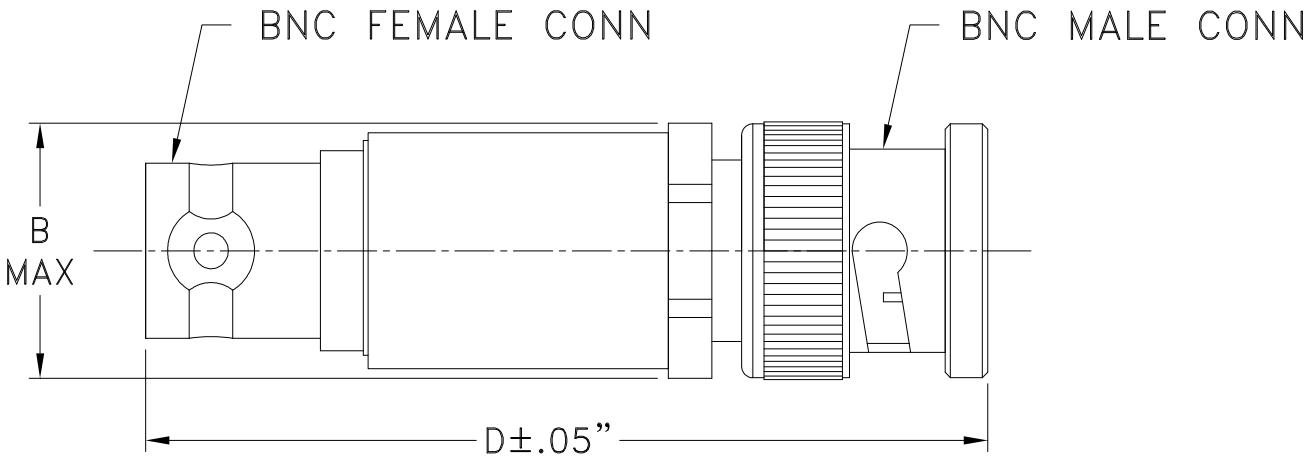
| Model No.[1] | Frequency (GHz) $f_L$-$f_U$ | Nominal Attenuation[2] (dB) | Attenuation Flatness[3] (dB) | | | VSWR (:1) | | | Input Power[4] (W) |
|---|---|---|---|---|---|---|---|---|---|
| | | DC-2 GHz | DC-0.5 GHz | DC-1 GHz | DC-2 GHz | DC-0.5 GHz | DC-1 GHz | DC-2 GHz | |
| | | Typ. | Typ. | Typ. | Typ. | Typ. | Typ. | Typ. | Max. |
| HAT-3A+ | DC-2 | 3 | 0.10 | 0.15 | 0.20 | 1.15 | 1.20 | 1.30 | 2.0 |
| HAT-6A+ | DC-2 | 6 | 0.10 | 0.15 | 0.20 | 1.10 | 1.15 | 1.20 | 1.6 |
| HAT-10A+ | DC-2 | 10 | 0.20 | 0.25 | 0.30 | 1.20 | 1.20 | 1.25 | 1.7 |
| HAT-20A+ | DC-2 | 20 | 0.15 | 0.20 | 0.30 | 1.20 | 1.30 | 1.30 | 0.8 |
| HAT-30A+ | DC-2 | 30 | 0.20 | 0.30 | 0.60 | 1.30 | 1.30 | 1.60 | 1.0 |

1. See individual model data sheets for more info.
2. Attenuation varies by 0.3 dB max over temperature.
3. Flatness = variation over band divided by 2.
4. RF Power at 25°C. Check individual model datasheet for derated power at 85°C.

REV. OR
ECO-015676
K1-HAT-A+
MCL NY
221107

# Case Style FF

## Outline Dimensions FF747




| CASE #. | A | B | C | D | E | WT GRAMS |
|---|---|---|---|---|---|---|
| FF747 | --<br>-- | .62<br>(15.75) | --<br>-- | 1.94<br>(49.28) | --<br>-- | 30.0 |

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

**Notes:**

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

Mini-Circuits

**Environmental Specifications** **ENV28T6**

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 |