

# Coaxial Fixed Attenuator

## HAT-3+

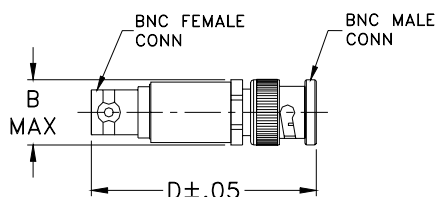
50Ω 1W 3dB DC to 2000 MHz

### 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.

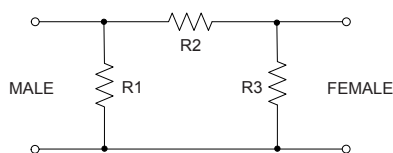
### Outline Drawing



### Outline Dimensions (inch/mm)

B	D	wt
.62	1.94	grams
15.75	49.28	30.0

### Electrical Schematic



### Features

- excellent VSWR, 1.05:1 typ.
- excellent flatness, 0.15 dB typ. to 2000 MHz
- usable to 4000 MHz

### Applications

- PCS
- instrumentation
- cellular



CASE STYLE: FF747

Connectors	Model	Price	Qty.
BNC Male-BNC Female	HAT-3+	9.95 ea.	(1-9)

**+RoHS Compliant**

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

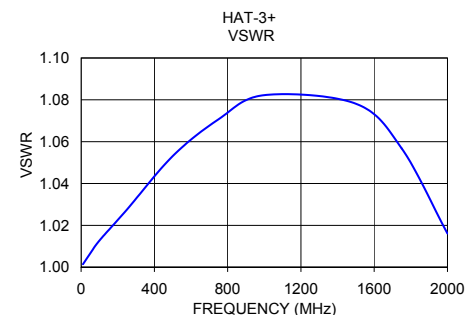
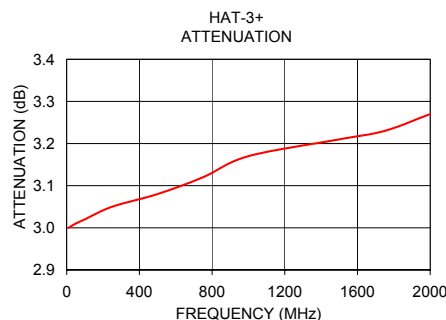
### Electrical Specifications

FREQ. RANGE (MHz)	ATTENUATION (dB)					VSWR (:1)			MAX. INPUT POWER (W)
	Flatness*					DC-0.5 GHz	DC-1 GHz	DC-2 GHz	
	DC-0.5 GHz	DC-1 GHz	DC-2 GHz	Total Band Typ.	DC-0.5 GHz				
$f_L$ - $f_U$	Nom.	Typ.	Typ.	Typ.	Typ.	Typ.	Typ.	Typ.	
DC-2000	3±0.2	0.05	0.10	0.15	0.25	1.05	1.10	1.10	1.0

\* Flatness = variation over band divided by 2.

### Typical Performance Data

Frequency (MHz)	Attenuation (dB)	VSWR (:1)
10.00	3.00	1.00
50.00	3.01	1.01
100.00	3.02	1.01
250.00	3.05	1.03
500.00	3.08	1.05
750.00	3.12	1.07
1000.00	3.17	1.08
1500.00	3.21	1.08
1750.00	3.23	1.06
2000.00	3.27	1.02



### Notes

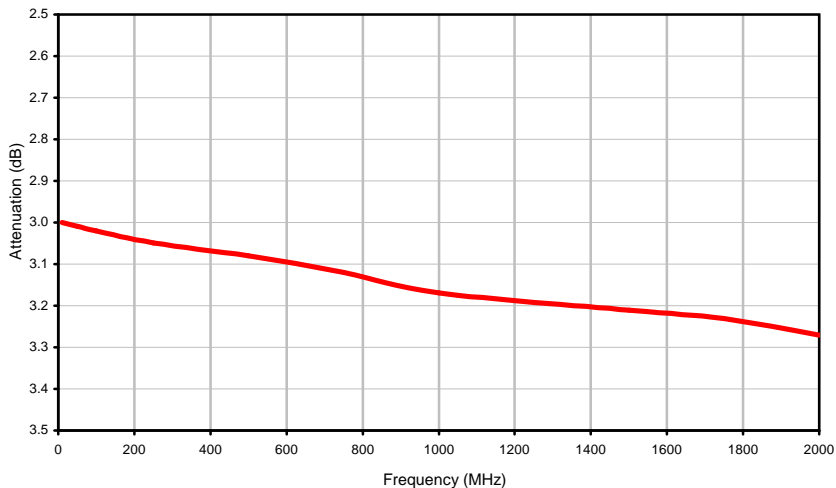
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## Typical Performance Data

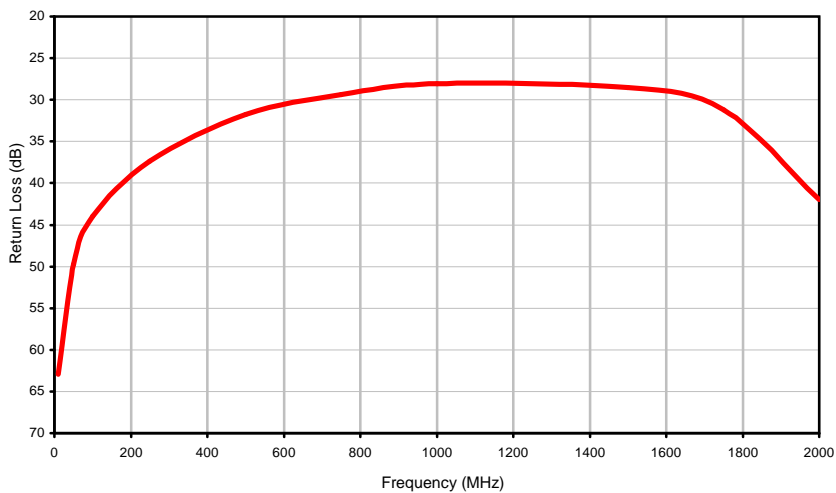
FREQUENCY (MHz)	ATTENUATION (dB)	RETURN LOSS (dB)
10.00	3.00	62.95
50.00	3.01	49.69
100.00	3.02	44.00
250.00	3.05	37.35
500.00	3.08	31.74
750.00	3.12	29.34
1000.00	3.17	28.07
1500.00	3.21	28.50
1750.00	3.23	31.18
2000.00	3.27	41.98

## Typical Performance Curves

### Attenuation



### Return Loss

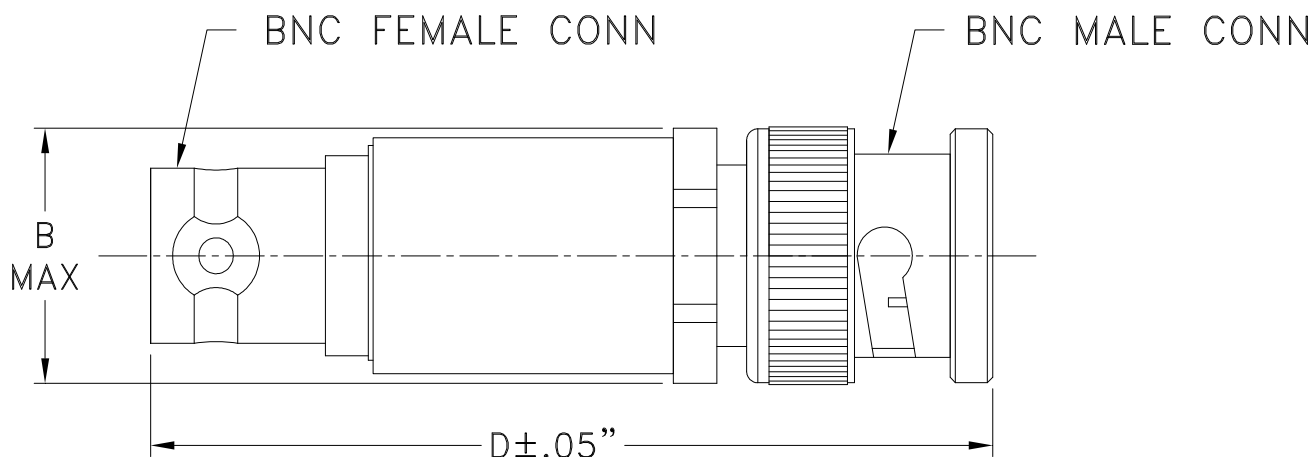


# Case Style

# FF

## Outline Dimensions

### FF747



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

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

### Notes:

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

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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.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-45° to 100° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C 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