

Coaxial Matching Pad

UNMP-5075-33R+

50/75Ω

DC to 3000 MHz



Generic photo used for illustration purposes only

CASE STYLE: FF779

The Big Deal

- Wideband coverage, DC to 3000 MHz
- Good return loss
- Loss < 2 dB

Product Overview

Mini-Circuits' UNMP-5075-33R+ is a coaxial 50/75Ω matching pad covering the DC to 3000 MHz frequency range, supporting impedance matching in a wide range of systems. The matching pad housed in a rugged unibody construction with N-Male (50Ω) to N-Female (75Ω) connectors.

Key Features

| Feature | Advantages |
|---|---|
| Wideband, DC to 3000 MHz | Supports a wide variety of applications including CATV systems and equipment. |
| Compact size, 0.71" x 2.11" x 0.71" | Accommodates tight space requirements for crowded system layouts. |
| Connectorized package N-Male (50Ω) to N-Female (75Ω) connectors | Supports connections between components with different connector types. |

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



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50/75Ω

DC to 3000 MHz

UNMP-5075-33R+



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CASE STYLE: FF779

| Connectors | Model |
|------------|----------------|
| 75Ω F-N | UNMP-5075-33R+ |
| 50Ω M-N | |

+RoHS Compliant

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

Maximum Ratings

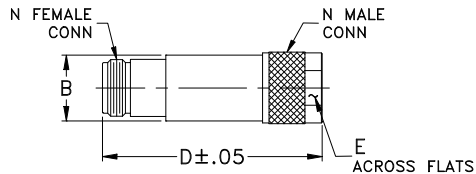
| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Input Power | 1W |

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

Coaxial Connections

| | |
|------|----------|
| 75 Ω | N-Female |
| 50 Ω | N-Male |

Outline Drawing

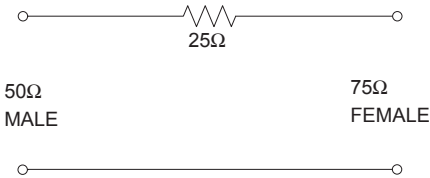


Outline Dimensions (inch/mm)

| A | B | C | D | E | Wt. |
|----|-------|----|-------|-------|-------|
| -- | .71 | -- | 2.11 | .718 | grams |
| -- | 18.03 | -- | 53.59 | 18.24 | 72.5 |

Note: Please refer to case style drawing for details

Functional Schematic



Features

- Wideband coverage, DC to 3000 MHz
- Good return loss
- Rugged unibody construction
- Unidirectional only, 50-75Ω
- Equivalent to Rhode & Schwarz matching pad 50/75Ω, P/N: 385.5714.02

Applications

- Impedance matching
- CATV Systems

Electrical Specifications at 25°C

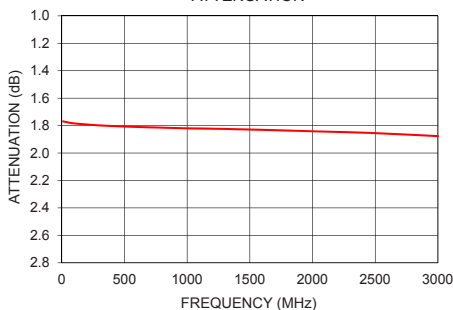
| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|------------------|-----------------------|---------|------|------|------|
| Frequency Range | | DC | -- | 3000 | MHz |
| Attenuation | Nominal | DC-3000 | -- | 1.7 | -- |
| | Flatness ¹ | DC-3000 | -- | -- | ±0.2 |
| 75 Ω Return Loss | DC-1500 | 26.5 | 40 | -- | -- |
| | 1500-3000 | 17.7 | 23 | -- | -- |
| 50 Ω Return Loss | DC-3000 | -- | 9 | -- | -- |
| Input Power | DC-3000 | -- | -- | 1 | W |

1. Flatness= variation over band divided by 2

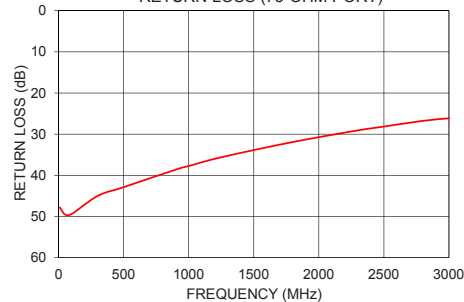
Typical Performance Data at 25°C

| Frequency (MHz) | Attenuation (dB) | Return Loss (dB) | |
|-----------------|------------------|------------------|-------|
| | | 75 Ω | 50 Ω |
| 10 | 1.77 | 47.82 | 9.53 |
| 50 | 1.78 | 49.54 | 9.53 |
| 100 | 1.78 | 49.40 | 9.50 |
| 300 | 1.80 | 45.00 | 9.48 |
| 500 | 1.81 | 42.87 | 9.48 |
| 800 | 1.82 | 39.66 | 9.50 |
| 950 | 1.82 | 38.12 | 9.51 |
| 1000 | 1.82 | 37.73 | 9.51 |
| 1200 | 1.82 | 35.98 | 9.54 |
| 1500 | 1.83 | 33.85 | 9.59 |
| 1800 | 1.84 | 31.90 | 9.68 |
| 2000 | 1.84 | 30.73 | 9.76 |
| 2300 | 1.85 | 29.07 | 9.93 |
| 2500 | 1.85 | 28.15 | 10.05 |
| 2800 | 1.87 | 26.76 | 10.22 |
| 3000 | 1.88 | 26.13 | 10.30 |

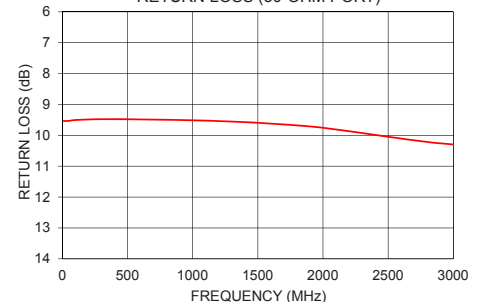
UNMP-5075-33R+ ATTENUATION



UNMP-5075-33R+ RETURN LOSS (75-OHM PORT)



UNMP-5075-33R+ RETURN LOSS (50-OHM PORT)



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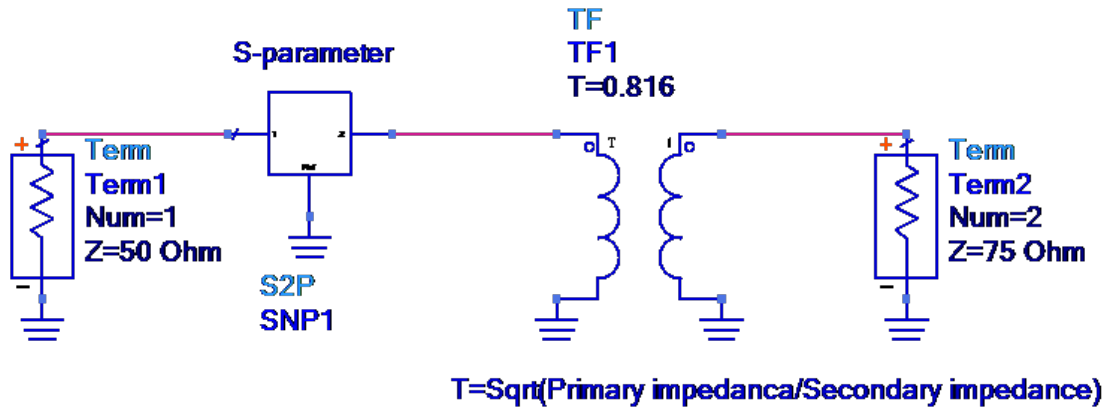
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REV. C
ECO-006652
UNMP-5075-33R+
EDU2608
URJ
210301
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S2P usage notes:

The S-Parameter file is normalized to 50 Ω

However as the DUT is a matching pad between 50 and 75 Ω , the actual schematic of the DUT would as shown below.



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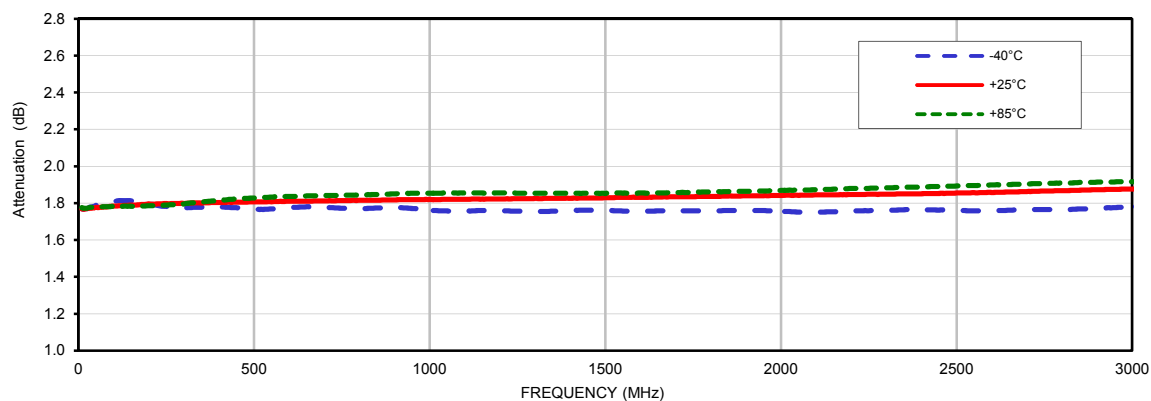
Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0dBm

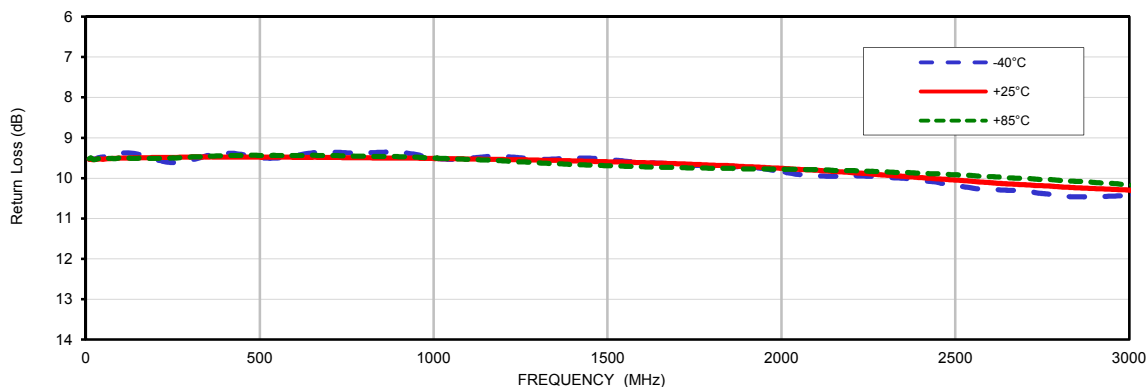
| FREQ. (MHz) | ATTENUATION | | | 75Ω RETURN LOSS | | | 50Ω RETURN LOSS | | |
|----------------|-------------|--------|--------|-----------------|--------|--------|-----------------|--------|--------|
| | (dB) | | | (dB) | | | (dB) | | |
| | @-40°C | @+25°C | @+85°C | @-40°C | @+25°C | @+85°C | @-40°C | @+25°C | @+85°C |
| 10 | 1.77 | 1.77 | 1.78 | 43.15 | 43.15 | 38.10 | 9.53 | 9.53 | 9.52 |
| 50 | 1.79 | 1.78 | 1.78 | 44.35 | 44.35 | 45.45 | 9.48 | 9.53 | 9.53 |
| 100 | 1.81 | 1.78 | 1.78 | 46.07 | 46.07 | 44.96 | 9.37 | 9.50 | 9.50 |
| 150 | 1.81 | 1.79 | 1.78 | 41.29 | 41.29 | 45.90 | 9.41 | 9.50 | 9.51 |
| 200 | 1.80 | 1.80 | 1.79 | 35.57 | 35.57 | 52.29 | 9.54 | 9.49 | 9.51 |
| 250 | 1.78 | 1.80 | 1.79 | 33.95 | 33.95 | 46.67 | 9.61 | 9.48 | 9.50 |
| 300 | 1.77 | 1.80 | 1.80 | 35.94 | 35.94 | 41.01 | 9.56 | 9.48 | 9.48 |
| 350 | 1.78 | 1.80 | 1.80 | 39.66 | 39.66 | 39.24 | 9.44 | 9.48 | 9.46 |
| 400 | 1.78 | 1.80 | 1.81 | 42.81 | 42.81 | 38.55 | 9.38 | 9.48 | 9.44 |
| 450 | 1.78 | 1.81 | 1.82 | 46.27 | 46.27 | 38.02 | 9.42 | 9.48 | 9.44 |
| 500 | 1.77 | 1.81 | 1.83 | 42.99 | 42.99 | 38.79 | 9.49 | 9.48 | 9.44 |
| 550 | 1.77 | 1.81 | 1.83 | 40.53 | 40.53 | 38.82 | 9.50 | 9.48 | 9.44 |
| 600 | 1.78 | 1.81 | 1.84 | 41.45 | 41.45 | 38.83 | 9.45 | 9.48 | 9.44 |
| 650 | 1.78 | 1.81 | 1.84 | 43.27 | 43.27 | 38.96 | 9.38 | 9.48 | 9.44 |
| 700 | 1.78 | 1.81 | 1.84 | 44.35 | 44.35 | 38.26 | 9.36 | 9.49 | 9.44 |
| 750 | 1.77 | 1.81 | 1.84 | 45.81 | 45.81 | 38.39 | 9.37 | 9.49 | 9.45 |
| 800 | 1.77 | 1.82 | 1.84 | 44.17 | 44.17 | 37.94 | 9.37 | 9.50 | 9.46 |
| 850 | 1.77 | 1.82 | 1.85 | 41.92 | 41.92 | 37.22 | 9.36 | 9.50 | 9.47 |
| 900 | 1.77 | 1.82 | 1.85 | 40.75 | 40.75 | 36.99 | 9.36 | 9.50 | 9.47 |
| 950 | 1.77 | 1.82 | 1.85 | 38.87 | 38.87 | 36.43 | 9.42 | 9.51 | 9.48 |
| 1000 | 1.76 | 1.82 | 1.85 | 37.61 | 37.61 | 36.33 | 9.50 | 9.51 | 9.50 |
| 1050 | 1.76 | 1.82 | 1.85 | 36.88 | 36.88 | 36.21 | 9.54 | 9.52 | 9.52 |
| 1100 | 1.76 | 1.82 | 1.85 | 36.77 | 36.77 | 35.57 | 9.51 | 9.52 | 9.53 |
| 1150 | 1.76 | 1.82 | 1.86 | 37.83 | 37.83 | 35.81 | 9.47 | 9.53 | 9.55 |
| 1200 | 1.76 | 1.82 | 1.86 | 37.51 | 37.51 | 35.41 | 9.46 | 9.54 | 9.57 |
| 1250 | 1.76 | 1.82 | 1.85 | 36.43 | 36.43 | 35.02 | 9.50 | 9.55 | 9.60 |
| 1300 | 1.75 | 1.83 | 1.85 | 35.55 | 35.55 | 34.75 | 9.53 | 9.55 | 9.62 |
| 1350 | 1.76 | 1.83 | 1.85 | 34.49 | 34.49 | 34.10 | 9.53 | 9.56 | 9.64 |
| 1400 | 1.76 | 1.83 | 1.85 | 34.54 | 34.54 | 34.08 | 9.51 | 9.57 | 9.66 |
| 1450 | 1.76 | 1.83 | 1.85 | 34.41 | 34.41 | 33.67 | 9.51 | 9.58 | 9.68 |
| 1500 | 1.76 | 1.83 | 1.85 | 33.43 | 33.43 | 33.17 | 9.54 | 9.59 | 9.69 |
| 1550 | 1.76 | 1.83 | 1.85 | 33.22 | 33.22 | 33.65 | 9.58 | 9.60 | 9.71 |
| 1600 | 1.76 | 1.83 | 1.85 | 32.44 | 32.44 | 33.20 | 9.61 | 9.62 | 9.72 |
| 1650 | 1.76 | 1.83 | 1.86 | 31.64 | 31.64 | 32.88 | 9.63 | 9.63 | 9.74 |
| 1700 | 1.76 | 1.83 | 1.86 | 31.88 | 31.88 | 33.13 | 9.65 | 9.64 | 9.74 |
| 1750 | 1.76 | 1.84 | 1.86 | 31.22 | 31.22 | 32.41 | 9.68 | 9.66 | 9.75 |
| 1800 | 1.76 | 1.84 | 1.86 | 30.95 | 30.95 | 32.48 | 9.71 | 9.68 | 9.76 |
| 1850 | 1.76 | 1.84 | 1.86 | 30.95 | 30.95 | 32.48 | 9.71 | 9.69 | 9.76 |
| 1900 | 1.76 | 1.84 | 1.86 | 30.18 | 30.18 | 31.87 | 9.73 | 9.71 | 9.77 |
| 1950 | 1.76 | 1.84 | 1.87 | 30.25 | 30.25 | 32.26 | 9.76 | 9.73 | 9.77 |
| 2000 | 1.75 | 1.84 | 1.87 | 29.62 | 29.62 | 31.83 | 9.84 | 9.76 | 9.78 |
| 2050 | 1.75 | 1.84 | 1.87 | 28.98 | 28.98 | 31.65 | 9.91 | 9.78 | 9.78 |
| 2100 | 1.75 | 1.84 | 1.87 | 29.06 | 29.06 | 31.92 | 9.94 | 9.81 | 9.79 |
| 2150 | 1.75 | 1.85 | 1.88 | 28.48 | 28.48 | 31.17 | 9.96 | 9.84 | 9.81 |
| 2200 | 1.76 | 1.85 | 1.88 | 28.65 | 28.65 | 31.39 | 9.94 | 9.86 | 9.81 |
| 2250 | 1.76 | 1.85 | 1.88 | 28.49 | 28.49 | 31.00 | 9.95 | 9.89 | 9.83 |
| 2300 | 1.76 | 1.85 | 1.88 | 27.77 | 27.77 | 30.33 | 9.98 | 9.93 | 9.84 |
| 2350 | 1.76 | 1.85 | 1.89 | 27.89 | 27.89 | 30.56 | 10.00 | 9.95 | 9.86 |
| 2400 | 1.76 | 1.85 | 1.89 | 27.43 | 27.43 | 29.85 | 10.05 | 9.99 | 9.88 |
| 2500 | 1.76 | 1.85 | 1.89 | 27.32 | 27.32 | 29.64 | 10.19 | 10.05 | 9.92 |
| 2550 | 1.76 | 1.86 | 1.90 | 26.78 | 26.78 | 28.97 | 10.25 | 10.08 | 9.94 |
| 2600 | 1.76 | 1.86 | 1.90 | 26.65 | 26.65 | 28.82 | 10.28 | 10.11 | 9.96 |
| 2650 | 1.76 | 1.86 | 1.90 | 26.44 | 26.44 | 28.52 | 10.30 | 10.14 | 9.99 |
| 2700 | 1.76 | 1.86 | 1.90 | 25.91 | 25.91 | 27.94 | 10.32 | 10.16 | 10.01 |
| 2750 | 1.76 | 1.87 | 1.91 | 25.68 | 25.68 | 27.79 | 10.38 | 10.19 | 10.03 |
| 2800 | 1.77 | 1.87 | 1.91 | 25.27 | 25.27 | 27.40 | 10.44 | 10.22 | 10.06 |
| 2850 | 1.77 | 1.87 | 1.91 | 25.08 | 25.08 | 27.15 | 10.47 | 10.24 | 10.08 |
| 2900 | 1.77 | 1.87 | 1.91 | 25.31 | 25.31 | 27.17 | 10.47 | 10.26 | 10.11 |
| 2950 | 1.78 | 1.87 | 1.91 | 25.30 | 25.30 | 26.77 | 10.45 | 10.28 | 10.13 |
| 3000 | 1.78 | 1.88 | 1.92 | 25.35 | 25.35 | 26.49 | 10.42 | 10.30 | 10.17 |

Typical Performance Curves

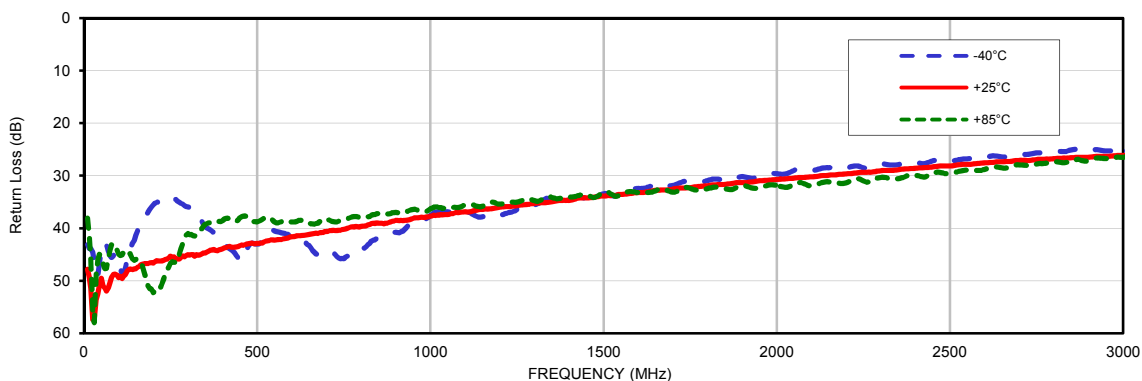
Attenuation Vs. Frequency & Temperature
INPUT POWER = 0 dBm



50-Ohm Return Loss Vs. Frequency & Temperature
INPUT POWER = 0 dBm



75-Ohm Return Loss Vs. Frequency & Temperature
INPUT POWER = 0 dBm

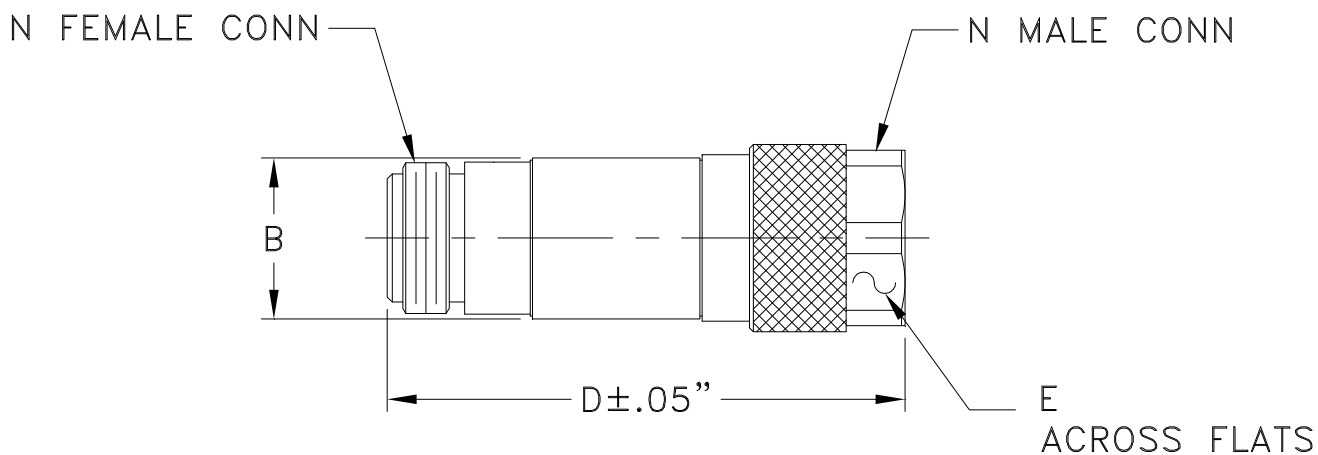


Case Style

FF

Outline Dimensions

FF779



| CASE #. | A | B | C | D | E | WT GRAMS |
|---------|----|----------------|----|-----------------|-----------------|----------|
| FF779 | -- | .71 (18.03) | -- | 2.11 (53.59) | .718 (18.24) | 72.5 |

Dimensions are in inches (mm). Tolerances: 2Pl. +.05/-.04; 3Pl. ± .030

Notes:

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

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RF/IF MICROWAVE COMPONENTS

FF779 Rev.: AR (13/AUG/21) ECO-009237 File: FF779

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Sheet 1 of 1



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 | -40° to 85°C | 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 |