

Coaxial

# Matching Pad

UNMP-R5075-33+

50/75Ω

DC to 3000 MHz



## The Big Deal

- Minimum loss pad
- Wideband coverage, DC to 3000 MHz
- Excellent VSWR

Generic photo used for illustration purposes only  
CASE STYLE: FF779

## Product Overview

Mini-Circuits' UNMP-R5075-33+ is a coaxial 50/75Ω matching pad covering the DC to 3000 MHz frequency range, supporting impedance matching in a wide range of systems. This model is ideal for 50/75Ω impedance matching in systems where minimizing overall signal loss is a priority. 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 and DOCSIS® 3.1 systems and equipment. |
| Compact size, 0.68" 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](http://www.minicircuits.com/MCLStore/terms.jsp)



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50/75Ω

DC to 3000 MHz

UNMP-R5075-33+



Generic photo used for illustration purposes only

CASE STYLE: FF779

| Connectors | Model          |
|------------|----------------|
| 50ΩM-N     | UNMP-R5075-33+ |
| 75ΩF-N     |                |

## +RoHS Compliant

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

## Maximum Ratings

|                       |                |
|-----------------------|----------------|
| Operating Temperature | -45°C to 100°C |
| Storage Temperature   | -55°C to 100°C |
| Input Power           | 2W             |

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

## Features

- Minimum loss pad
- Wideband coverage, DC to 3000 MHz
- Excellent VSWR
- Rugged unibody construction

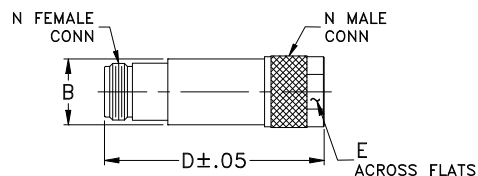
## Applications

- Impedance matching

## Coaxial Connections

|        |          |
|--------|----------|
| Input  | N-Male   |
| Output | N-Female |

## Outline Drawing

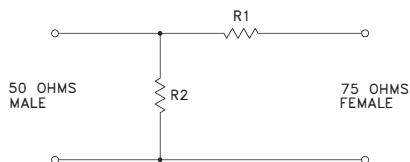


## Outline Dimensions (inch mm)

| 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

## Electrical Schematic



## Electrical Specifications at 25°C

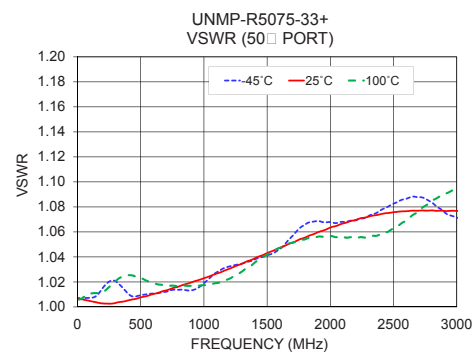
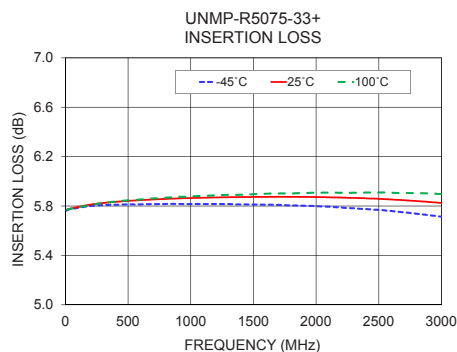
| Parameter                | Frequency (MHz)       | Min.      | Typ. | Max.  | Unit |
|--------------------------|-----------------------|-----------|------|-------|------|
| Frequency Range          |                       | DC        | --   | 3000  | MHz  |
| Attenuation <sup>1</sup> | Nominal               | DC-3000   | --   | 5.7   | --   |
|                          | Flatness <sup>2</sup> | DC-3000   | --   | ±0.15 | --   |
|                          |                       | DC-100    | --   | 0.2   | dB   |
|                          |                       | 100-1000  | --   | 0.3   |      |
| VSWR                     |                       | DC-100    | --   | 1.01  | 1.10 |
|                          |                       | 100-1000  | --   | 1.05  | 1.10 |
|                          |                       | 1000-3000 | --   | 1.1   | 1.20 |
| Input Power              | DC-3000               | --        | --   | 2     | W    |

1. Attenuation varies by 0.3 dB max. over temperature

2. Flatness= variation over band divided by 2

## Typical Performance Data 25°C

| Frequency<br>(MHz) | Insertion Loss<br>(dB) | VSWR<br>(:1) |      |
|--------------------|------------------------|--------------|------|
|                    |                        | 50 Ω         | 75 Ω |
| 10                 | 5.77                   | 1.01         | 1.00 |
| 50                 | 5.78                   | 1.01         | 1.00 |
| 100                | 5.79                   | 1.00         | 1.00 |
| 300                | 5.82                   | 1.00         | 1.01 |
| 500                | 5.84                   | 1.01         | 1.01 |
| 800                | 5.86                   | 1.02         | 1.02 |
| 950                | 5.86                   | 1.02         | 1.03 |
| 1000               | 5.86                   | 1.02         | 1.03 |
| 1200               | 5.87                   | 1.03         | 1.04 |
| 1500               | 5.87                   | 1.04         | 1.05 |
| 1800               | 5.87                   | 1.06         | 1.06 |
| 2000               | 5.87                   | 1.06         | 1.07 |
| 2300               | 5.87                   | 1.07         | 1.07 |
| 2500               | 5.86                   | 1.08         | 1.08 |
| 2800               | 5.84                   | 1.08         | 1.08 |
| 3000               | 5.82                   | 1.08         | 1.08 |



## Notes

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ECO-005139  
UNMP-R5075-33+  
EDU2639  
URJ  
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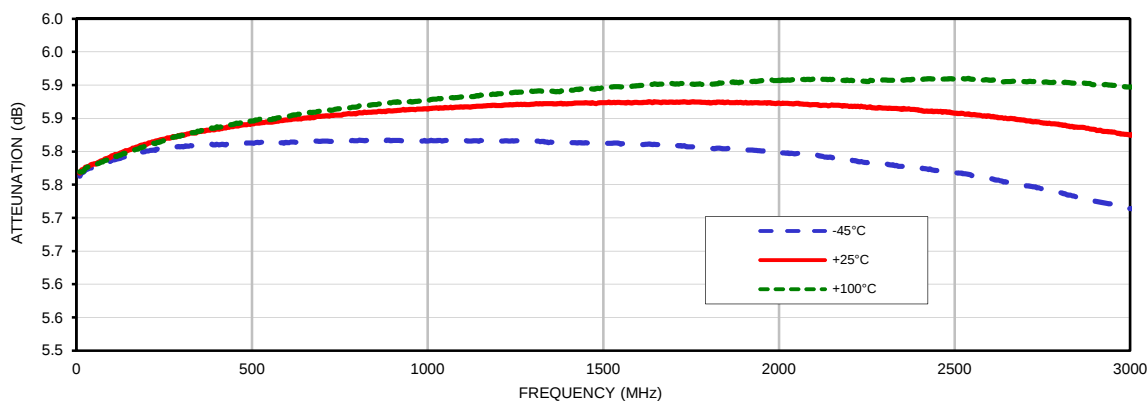
## Typical Performance Data

TEST CONDITIONS: INPUT POWER = -10dBm

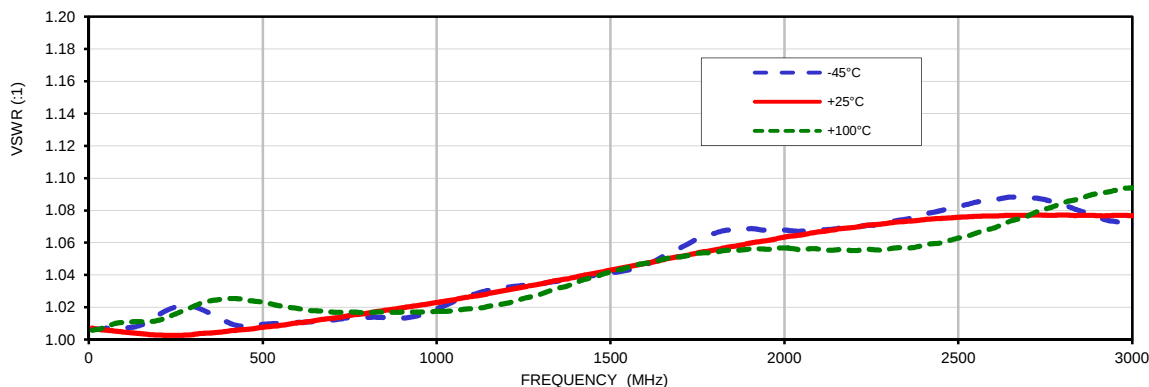
| FREQ. | INSERTION LOSS |        |         | 50Ω VSWR |        |         | 75Ω VSWR |        |         |
|-------|----------------|--------|---------|----------|--------|---------|----------|--------|---------|
| (MHz) | (dB)           |        |         | (:1)     |        |         | (:1)     |        |         |
|       | @-45°C         | @+25°C | @+100°C | @-45°C   | @+25°C | @+100°C | @-45°C   | @+25°C | @+100°C |
| 10    | 5.76           | 5.77   | 5.77    | 1.01     | 1.01   | 1.01    | 1.00     | 1.00   | 1.00    |
| 50    | 5.77           | 5.78   | 5.78    | 1.01     | 1.01   | 1.01    | 1.01     | 1.00   | 1.01    |
| 100   | 5.79           | 5.79   | 5.79    | 1.01     | 1.01   | 1.01    | 1.02     | 1.00   | 1.01    |
| 150   | 5.79           | 5.80   | 5.80    | 1.01     | 1.01   | 1.01    | 1.02     | 1.01   | 1.00    |
| 200   | 5.80           | 5.81   | 5.81    | 1.02     | 1.02   | 1.01    | 1.03     | 1.01   | 1.01    |
| 250   | 5.80           | 5.82   | 5.82    | 1.02     | 1.02   | 1.02    | 1.03     | 1.01   | 1.02    |
| 300   | 5.81           | 5.82   | 5.82    | 1.02     | 1.02   | 1.02    | 1.02     | 1.01   | 1.02    |
| 350   | 5.81           | 5.83   | 5.83    | 1.02     | 1.02   | 1.02    | 1.02     | 1.01   | 1.03    |
| 400   | 5.81           | 5.83   | 5.84    | 1.01     | 1.01   | 1.03    | 1.01     | 1.01   | 1.03    |
| 450   | 5.81           | 5.84   | 5.84    | 1.01     | 1.01   | 1.02    | 1.01     | 1.01   | 1.03    |
| 500   | 5.81           | 5.84   | 5.85    | 1.01     | 1.01   | 1.02    | 1.01     | 1.01   | 1.03    |
| 550   | 5.81           | 5.84   | 5.85    | 1.01     | 1.01   | 1.02    | 1.01     | 1.01   | 1.03    |
| 600   | 5.81           | 5.85   | 5.85    | 1.01     | 1.01   | 1.02    | 1.01     | 1.02   | 1.03    |
| 650   | 5.82           | 5.85   | 5.86    | 1.01     | 1.01   | 1.02    | 1.01     | 1.02   | 1.03    |
| 700   | 5.82           | 5.85   | 5.86    | 1.01     | 1.01   | 1.02    | 1.01     | 1.02   | 1.03    |
| 750   | 5.82           | 5.85   | 5.86    | 1.01     | 1.01   | 1.02    | 1.01     | 1.02   | 1.03    |
| 800   | 5.82           | 5.86   | 5.87    | 1.01     | 1.01   | 1.02    | 1.02     | 1.02   | 1.03    |
| 850   | 5.82           | 5.86   | 5.87    | 1.01     | 1.01   | 1.02    | 1.02     | 1.02   | 1.03    |
| 900   | 5.82           | 5.86   | 5.87    | 1.01     | 1.01   | 1.02    | 1.02     | 1.03   | 1.03    |
| 950   | 5.82           | 5.86   | 5.88    | 1.01     | 1.01   | 1.02    | 1.02     | 1.03   | 1.04    |
| 1000  | 5.82           | 5.86   | 5.88    | 1.02     | 1.02   | 1.02    | 1.02     | 1.03   | 1.03    |
| 1050  | 5.82           | 5.87   | 5.88    | 1.02     | 1.02   | 1.02    | 1.03     | 1.03   | 1.04    |
| 1100  | 5.82           | 5.87   | 5.88    | 1.03     | 1.03   | 1.02    | 1.03     | 1.03   | 1.04    |
| 1150  | 5.82           | 5.87   | 5.89    | 1.03     | 1.03   | 1.02    | 1.03     | 1.03   | 1.04    |
| 1200  | 5.82           | 5.87   | 5.89    | 1.03     | 1.03   | 1.02    | 1.03     | 1.04   | 1.03    |
| 1250  | 5.82           | 5.87   | 5.89    | 1.03     | 1.03   | 1.03    | 1.04     | 1.04   | 1.03    |
| 1300  | 5.82           | 5.87   | 5.89    | 1.03     | 1.03   | 1.03    | 1.04     | 1.04   | 1.03    |
| 1350  | 5.81           | 5.87   | 5.89    | 1.04     | 1.04   | 1.03    | 1.04     | 1.04   | 1.03    |
| 1400  | 5.81           | 5.87   | 5.89    | 1.04     | 1.04   | 1.04    | 1.04     | 1.04   | 1.03    |
| 1450  | 5.81           | 5.87   | 5.89    | 1.04     | 1.04   | 1.04    | 1.05     | 1.05   | 1.03    |
| 1500  | 5.81           | 5.87   | 5.90    | 1.04     | 1.04   | 1.04    | 1.05     | 1.05   | 1.03    |
| 1550  | 5.81           | 5.87   | 5.90    | 1.04     | 1.04   | 1.04    | 1.06     | 1.05   | 1.03    |
| 1600  | 5.81           | 5.87   | 5.90    | 1.05     | 1.05   | 1.05    | 1.06     | 1.05   | 1.03    |
| 1650  | 5.81           | 5.87   | 5.90    | 1.05     | 1.05   | 1.05    | 1.06     | 1.05   | 1.04    |
| 1700  | 5.81           | 5.87   | 5.90    | 1.06     | 1.06   | 1.05    | 1.06     | 1.06   | 1.04    |
| 1750  | 5.81           | 5.87   | 5.90    | 1.06     | 1.06   | 1.05    | 1.06     | 1.06   | 1.04    |
| 1800  | 5.80           | 5.87   | 5.90    | 1.07     | 1.07   | 1.05    | 1.06     | 1.06   | 1.04    |
| 1850  | 5.80           | 5.87   | 5.90    | 1.07     | 1.07   | 1.06    | 1.07     | 1.06   | 1.05    |
| 1900  | 5.80           | 5.87   | 5.90    | 1.07     | 1.07   | 1.06    | 1.07     | 1.06   | 1.05    |
| 1950  | 5.80           | 5.87   | 5.91    | 1.07     | 1.07   | 1.06    | 1.07     | 1.06   | 1.05    |
| 2000  | 5.80           | 5.87   | 5.91    | 1.07     | 1.07   | 1.06    | 1.07     | 1.07   | 1.06    |
| 2050  | 5.80           | 5.87   | 5.91    | 1.07     | 1.07   | 1.06    | 1.07     | 1.07   | 1.06    |
| 2100  | 5.80           | 5.87   | 5.91    | 1.07     | 1.07   | 1.06    | 1.07     | 1.07   | 1.07    |
| 2150  | 5.79           | 5.87   | 5.91    | 1.07     | 1.07   | 1.06    | 1.07     | 1.07   | 1.07    |
| 2200  | 5.79           | 5.87   | 5.91    | 1.07     | 1.07   | 1.06    | 1.07     | 1.07   | 1.08    |
| 2250  | 5.78           | 5.87   | 5.91    | 1.07     | 1.07   | 1.06    | 1.07     | 1.07   | 1.07    |
| 2300  | 5.78           | 5.87   | 5.91    | 1.07     | 1.07   | 1.06    | 1.07     | 1.07   | 1.08    |
| 2350  | 5.78           | 5.86   | 5.91    | 1.07     | 1.07   | 1.06    | 1.07     | 1.08   | 1.08    |
| 2400  | 5.78           | 5.86   | 5.91    | 1.08     | 1.08   | 1.06    | 1.07     | 1.08   | 1.09    |
| 2500  | 5.77           | 5.86   | 5.91    | 1.08     | 1.08   | 1.06    | 1.07     | 1.08   | 1.10    |
| 2550  | 5.76           | 5.86   | 5.91    | 1.09     | 1.09   | 1.07    | 1.07     | 1.08   | 1.10    |
| 2600  | 5.76           | 5.85   | 5.91    | 1.09     | 1.09   | 1.07    | 1.07     | 1.08   | 1.11    |
| 2650  | 5.75           | 5.85   | 5.91    | 1.09     | 1.09   | 1.07    | 1.07     | 1.08   | 1.11    |
| 2700  | 5.75           | 5.85   | 5.91    | 1.09     | 1.09   | 1.08    | 1.06     | 1.08   | 1.11    |
| 2750  | 5.74           | 5.84   | 5.91    | 1.09     | 1.09   | 1.08    | 1.06     | 1.08   | 1.11    |
| 2800  | 5.74           | 5.84   | 5.90    | 1.08     | 1.08   | 1.08    | 1.06     | 1.08   | 1.12    |
| 2850  | 5.73           | 5.84   | 5.90    | 1.08     | 1.08   | 1.09    | 1.05     | 1.08   | 1.12    |
| 2900  | 5.72           | 5.83   | 5.90    | 1.08     | 1.08   | 1.09    | 1.06     | 1.08   | 1.12    |
| 2950  | 5.72           | 5.83   | 5.90    | 1.07     | 1.07   | 1.09    | 1.05     | 1.08   | 1.12    |
| 3000  | 5.71           | 5.82   | 5.90    | 1.07     | 1.07   | 1.09    | 1.06     | 1.08   | 1.12    |

## Typical Performance Curves

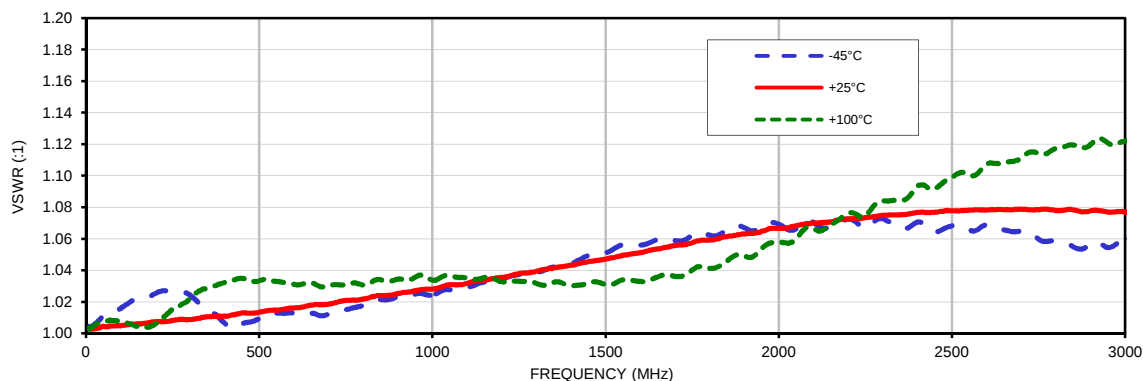
**Attenuation Vs. Frequency & Temperature**  
INPUT POWER = -10 dBm



**50-Ohm VSWR Vs. Frequency & Temperature**  
INPUT POWER = -10 dBm



**75-Ohm VSWR Vs. Frequency & Temperature**  
INPUT POWER = -10 dBm

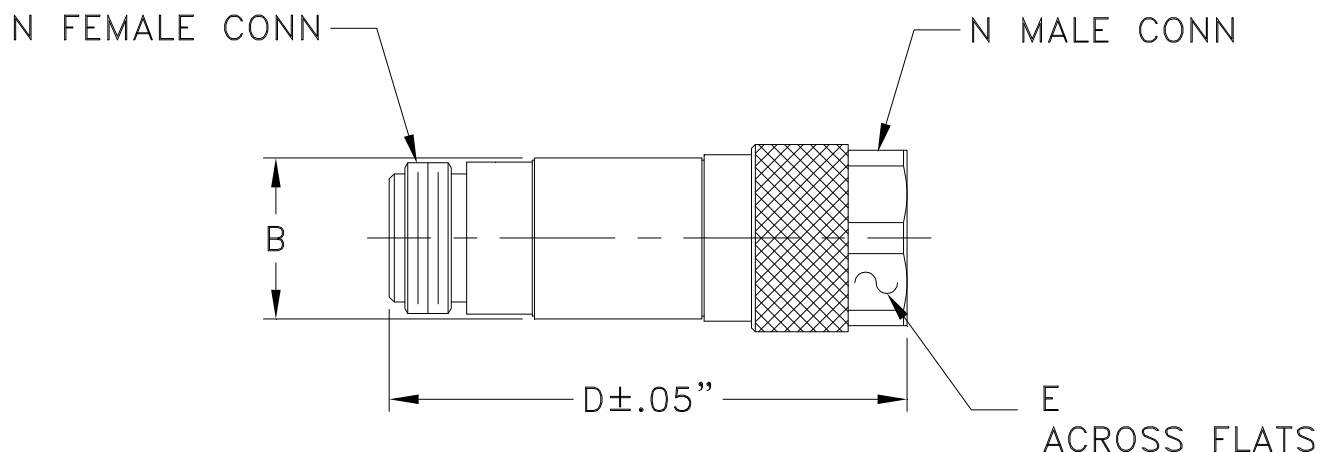


# Case Style

# FF

## Outline Dimensions

FF779



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



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



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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<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 |