



ULTRA-SMALL CERAMIC

# Power Splitter/Combiner

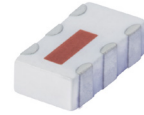
## SCN-3-28+

Mini-Circuits

3 Way-0° 50Ω 1600 to 2800 MHz

### FEATURES

- Isolation Resistor, External 124Ω and 127Ω
- Low Insertion Loss, 0.8 dB Typ.
- Excellent Amplitude Unbalance, 0.2 dB Typ.
- Very Good Phase Unbalance, 5 Deg. Typ.
- High Isolation, 12 dB Typ.
- Excellent Power Handling, 15 W as Splitter
- Small Size, 0.12x0.06x0.035"
- ESD Non-Sensitive
- Temperature Stable LTCC Technology
- Wrap Around Terminations for Excellent Solderability
- Low Cost



Generic photo used for illustration purposes only

CASE STYLE: FV1206-1

**+RoHS Compliant**

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

### APPLICATIONS

- DSS
- PSC, DECT
- WLAN
- Satellite Communication
- Defense Applications
- Line of Sight Communications
- WLL
- ISM Applications

### ELECTRICAL SPECIFICATIONS AT +25°C

| Parameter                    | Frequency (MHz) | Min. | Typ. | Max. | Unit   |
|------------------------------|-----------------|------|------|------|--------|
| Frequency Range              |                 | 1600 |      | 2800 | MHz    |
| Insertion Loss, Above 4.8 dB | 1600-2800       |      | 0.8  | 1.2  | dB     |
|                              | 1800-2000       |      | 0.8  | 1.2  |        |
|                              | 2000-2200       |      | 0.8  | 1.2  |        |
|                              | 2400-2500       |      | 0.8  | 1.2  |        |
| Isolation                    | 1600-2800       | 10   | 12   |      | dB     |
|                              | 1800-2000       | 12   | 14   |      |        |
|                              | 2000-2200       | 13   | 16   |      |        |
|                              | 2400-2500       | 17   | 20   |      |        |
| Phase Unbalance              | 1600-2800       |      | 5.0  | 8.0  | Degree |
|                              | 1800-2000       |      | 5.0  | 8.0  |        |
|                              | 2000-2200       |      | 5.0  | 8.0  |        |
|                              | 2400-2500       |      | 5.0  | 8.0  |        |
| Amplitude Unbalance          | 1600-2800       |      | 0.2  | 0.6  | dB     |
|                              | 1800-2000       |      | 0.2  | 0.6  |        |
|                              | 2000-2200       |      | 0.2  | 0.5  |        |
|                              | 2400-2500       |      | 0.2  | 0.5  |        |
| Return Loss (Input)          | 1600-2800       |      | 10   |      | dB     |
|                              | 1800-2000       |      | 10   |      |        |
|                              | 2000-2200       |      | 11   |      |        |
|                              | 2400-2500       |      | 11   |      |        |
| Return Loss (Output)         | 1600-2800       |      | 12   |      | dB     |
|                              | 1800-2000       |      | 13   |      |        |
|                              | 2000-2200       |      | 12   |      |        |
|                              | 2400-2500       |      | 12   |      |        |

### ABSOLUTE MAXIMUM RATINGS

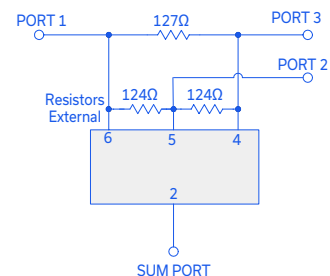
| Parameter                   | Ratings                |
|-----------------------------|------------------------|
| Operating Temperature       | -55°C to +100°C        |
| Storage Temperature         | -55°C to +100°C        |
| Power Input (as a Splitter) | 15 W <sup>1</sup> max. |

1. Derate linearly to 6 W at +100°C ambient.

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

Power input as a combiner is limited by rating of external resistors.

### ELECTRICAL SCHEMATIC



Mini-Circuits

www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

REV. J  
ECO-027229  
SCN-3-28+  
MCL NY  
251013  
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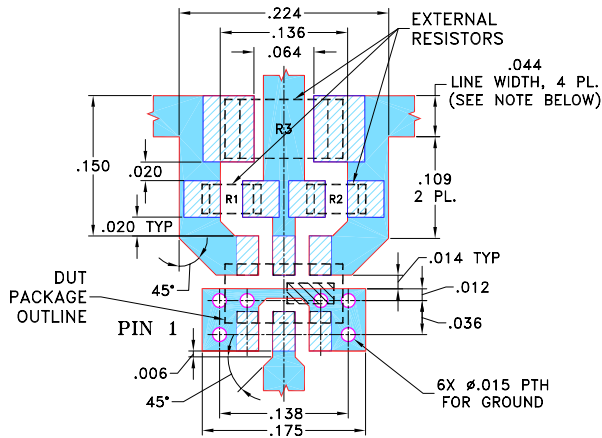


### PIN CONNECTIONS

|               |                        |
|---------------|------------------------|
| SUM PORT      | 2                      |
| PORT 1        | 6                      |
| PORT 2        | 5                      |
| PORT 3        | 4                      |
| GROUND        | 1,3                    |
| PORT 1-2, 2-3 | Resistor external 124Ω |
| PORT 1-3      | Resistor external 127Ω |

### PRODUCT MARKING: PF

### DEMO BOARD MCL P/N: TB-SCN-3-28+ SUGGESTED PCB LAYOUT (PL-171)



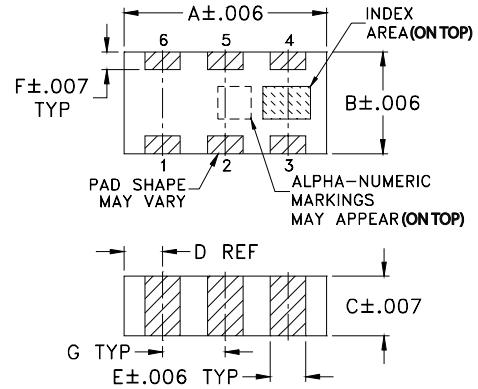
RESISTORS: R1-R2: 124 Ohm, 0603 SIZE; R3: 127 Ohm, 1206 SIZE.

**NOTE:**

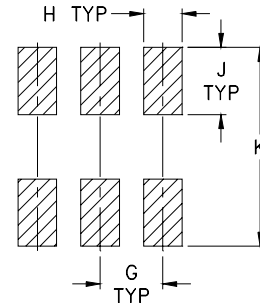
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS: .020 ± .0015; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. RESISTOR LAND PATTERNS ARE SHOWN AS PER IPC-SM-782A.
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT
- DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

### OUTLINE DRAWING



### PCB Land Pattern



Suggested Layout,  
Tolerance to be within ±.002

### OUTLINE DIMENSIONS (Inches/mm)

| A    | B    | C    | D    | E     | F    |
|------|------|------|------|-------|------|
| .126 | .063 | .035 | .024 | .022  | .011 |
| 3.20 | 1.60 | 0.89 | 0.61 | 0.56  | 0.28 |
| G    | H    | J    | K    | wt    |      |
| .039 | .024 | .042 | .123 | grams |      |
| 0.99 | 0.61 | 1.07 | 3.12 | .020  |      |

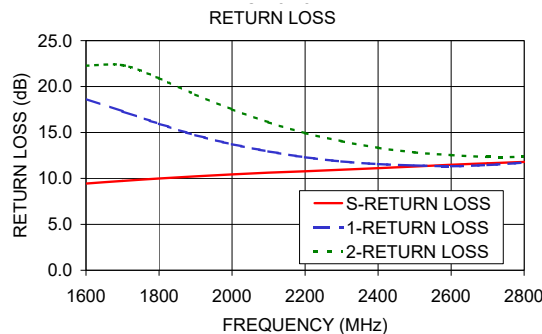
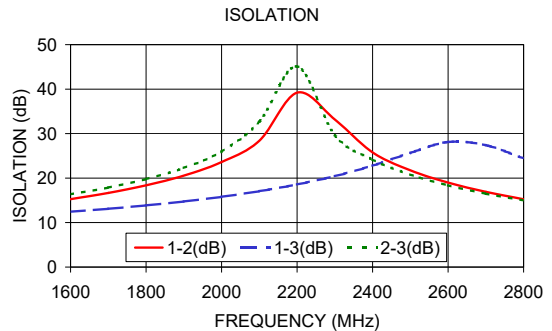
### TAPE & REEL INFORMATION: F75



### TYPICAL PERFORMANCE DATA

| Frequency (MHz) | Total Loss <sup>2</sup> (dB) |      |      | Amplitude Unbalance (dB) | Isolation (dB) |       |       | Phase Unbalance (deg.) | Return Loss (dB) |       |       |
|-----------------|------------------------------|------|------|--------------------------|----------------|-------|-------|------------------------|------------------|-------|-------|
|                 | S-1                          | S-2  | S-3  |                          | 1-2            | 1-3   | 2-3   |                        | S                | 1     | 2     |
| 1600            | 5.53                         | 5.81 | 5.50 | 0.31                     | 15.27          | 12.43 | 16.36 | 3.29                   | 9.44             | 18.66 | 22.27 |
| 1700            | 5.50                         | 5.78 | 5.48 | 0.29                     | 16.66          | 13.09 | 17.87 | 3.64                   | 9.73             | 17.30 | 22.33 |
| 1800            | 5.49                         | 5.74 | 5.47 | 0.27                     | 18.38          | 13.86 | 19.78 | 3.99                   | 9.99             | 15.95 | 20.89 |
| 1900            | 5.48                         | 5.71 | 5.47 | 0.24                     | 20.57          | 14.75 | 22.29 | 4.31                   | 10.23            | 14.71 | 19.12 |
| 2000            | 5.48                         | 5.68 | 5.47 | 0.21                     | 23.60          | 15.80 | 25.98 | 4.62                   | 10.44            | 13.73 | 17.52 |
| 2100            | 5.48                         | 5.66 | 5.48 | 0.18                     | 28.40          | 17.05 | 32.67 | 4.79                   | 10.63            | 12.94 | 16.11 |
| 2200            | 5.49                         | 5.63 | 5.49 | 0.15                     | 39.20          | 18.57 | 45.10 | 4.99                   | 10.78            | 12.30 | 14.93 |
| 2300            | 5.49                         | 5.62 | 5.50 | 0.12                     | 33.16          | 20.43 | 29.60 | 5.06                   | 10.95            | 11.85 | 14.05 |
| 2400            | 5.50                         | 5.61 | 5.51 | 0.11                     | 25.77          | 22.80 | 24.16 | 5.14                   | 11.12            | 11.56 | 13.33 |
| 2500            | 5.50                         | 5.60 | 5.52 | 0.09                     | 21.75          | 25.66 | 20.80 | 5.14                   | 11.30            | 11.41 | 12.83 |
| 2600            | 5.51                         | 5.58 | 5.53 | 0.08                     | 18.99          | 28.11 | 18.37 | 5.02                   | 11.49            | 11.33 | 12.54 |
| 2700            | 5.50                         | 5.59 | 5.54 | 0.08                     | 16.91          | 27.40 | 16.50 | 4.88                   | 11.65            | 11.46 | 12.34 |
| 2800            | 5.51                         | 5.60 | 5.55 | 0.09                     | 15.25          | 24.44 | 14.98 | 4.68                   | 11.79            | 11.72 | 12.35 |

2. Total Loss = Insertion Loss + 4.8 dB splitter loss.



#### 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/terms/viewterm.html](http://www.minicircuits.com/terms/viewterm.html)



# 3 Way-0° Power Splitter/Combiner

# SCN-3-28+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0dBm @ Temperature = +25°C

| FREQ.<br>(MHz) | TOTAL LOSS <sup>1</sup><br>(dB) |       |      | AMP.<br>UNBAL.<br>(dB) | PHASE<br>UNBAL.<br>(deg.) | ISOLATION<br>(dB) |       |       | VSWR<br>(:1) |      |      |      |
|----------------|---------------------------------|-------|------|------------------------|---------------------------|-------------------|-------|-------|--------------|------|------|------|
|                | S-1                             | S-2   | S-3  |                        |                           | 1-2               | 1-3   | 2-3   | S            | 1    | 2    | 3    |
| 10             | 6.06                            | 6.06  | 6.04 | 0.02                   | 0.38                      | 6.10              | 6.08  | 6.05  | 3.00         | 2.95 | 2.95 | 2.93 |
| 50             | 6.09                            | 6.05  | 6.01 | 0.08                   | 0.58                      | 6.11              | 6.07  | 6.08  | 3.00         | 2.92 | 2.92 | 2.89 |
| 100            | 6.10                            | 6.07  | 6.03 | 0.07                   | 0.47                      | 6.15              | 6.15  | 6.15  | 2.99         | 2.87 | 2.88 | 2.85 |
| 200            | 6.09                            | 6.09  | 6.04 | 0.05                   | 0.40                      | 6.29              | 6.37  | 6.37  | 2.96         | 2.73 | 2.78 | 2.71 |
| 300            | 6.07                            | 6.10  | 6.03 | 0.07                   | 0.46                      | 6.50              | 6.68  | 6.66  | 2.93         | 2.54 | 2.64 | 2.51 |
| 400            | 6.06                            | 6.12  | 6.03 | 0.09                   | 0.51                      | 6.77              | 7.05  | 7.01  | 2.92         | 2.35 | 2.47 | 2.30 |
| 500            | 6.05                            | 6.13  | 6.01 | 0.12                   | 0.53                      | 7.11              | 7.47  | 7.44  | 2.89         | 2.14 | 2.29 | 2.09 |
| 600            | 6.04                            | 6.16  | 5.99 | 0.17                   | 0.46                      | 7.51              | 7.91  | 7.94  | 2.86         | 1.94 | 2.11 | 1.90 |
| 700            | 6.03                            | 6.16  | 5.96 | 0.20                   | 0.50                      | 7.95              | 8.35  | 8.46  | 2.84         | 1.77 | 1.94 | 1.72 |
| 800            | 6.00                            | 6.17  | 5.94 | 0.23                   | 0.54                      | 8.46              | 8.82  | 9.05  | 2.80         | 1.61 | 1.78 | 1.57 |
| 900            | 5.98                            | 6.17  | 5.91 | 0.26                   | 0.76                      | 9.01              | 9.28  | 9.69  | 2.77         | 1.48 | 1.65 | 1.44 |
| 1000           | 5.97                            | 6.16  | 5.88 | 0.28                   | 1.03                      | 9.60              | 9.76  | 10.36 | 2.73         | 1.36 | 1.53 | 1.33 |
| 1100           | 5.94                            | 6.14  | 5.85 | 0.29                   | 1.39                      | 10.26             | 10.25 | 11.06 | 2.69         | 1.27 | 1.42 | 1.24 |
| 1200           | 5.92                            | 6.12  | 5.82 | 0.30                   | 1.69                      | 10.95             | 10.76 | 11.83 | 2.64         | 1.18 | 1.32 | 1.16 |
| 1300           | 5.88                            | 6.09  | 5.79 | 0.30                   | 1.96                      | 11.73             | 11.30 | 12.66 | 2.59         | 1.12 | 1.24 | 1.12 |
| 1400           | 5.84                            | 6.05  | 5.75 | 0.30                   | 2.20                      | 12.55             | 11.86 | 13.56 | 2.52         | 1.09 | 1.16 | 1.11 |
| 1500           | 5.80                            | 6.01  | 5.71 | 0.30                   | 2.47                      | 13.48             | 12.46 | 14.55 | 2.44         | 1.11 | 1.09 | 1.14 |
| 1600           | 5.75                            | 5.95  | 5.65 | 0.30                   | 2.67                      | 14.51             | 13.13 | 15.65 | 2.36         | 1.15 | 1.04 | 1.18 |
| 1650           | 5.72                            | 5.91  | 5.62 | 0.29                   | 2.76                      | 15.06             | 13.49 | 16.26 | 2.31         | 1.18 | 1.02 | 1.21 |
| 1700           | 5.69                            | 5.88  | 5.59 | 0.29                   | 2.86                      | 15.65             | 13.87 | 16.91 | 2.26         | 1.21 | 1.03 | 1.23 |
| 1750           | 5.66                            | 5.85  | 5.57 | 0.28                   | 2.95                      | 16.28             | 14.25 | 17.59 | 2.22         | 1.23 | 1.05 | 1.26 |
| 1800           | 5.63                            | 5.81  | 5.54 | 0.27                   | 3.03                      | 16.95             | 14.67 | 18.34 | 2.17         | 1.26 | 1.07 | 1.28 |
| 1850           | 5.59                            | 5.78  | 5.51 | 0.27                   | 3.10                      | 17.69             | 15.11 | 19.16 | 2.11         | 1.28 | 1.10 | 1.31 |
| 1900           | 5.56                            | 5.74  | 5.48 | 0.26                   | 3.17                      | 18.47             | 15.57 | 20.05 | 2.06         | 1.30 | 1.12 | 1.33 |
| 1950           | 5.53                            | 5.70  | 5.44 | 0.26                   | 3.21                      | 19.35             | 16.07 | 21.04 | 2.00         | 1.32 | 1.14 | 1.35 |
| 2000           | 5.49                            | 5.66  | 5.41 | 0.25                   | 3.23                      | 20.31             | 16.62 | 22.15 | 1.94         | 1.35 | 1.16 | 1.37 |
| 2050           | 5.46                            | 5.61  | 5.37 | 0.24                   | 3.26                      | 21.42             | 17.21 | 23.37 | 1.88         | 1.37 | 1.18 | 1.39 |
| 2100           | 5.41                            | 5.58  | 5.34 | 0.24                   | 3.32                      | 22.61             | 17.84 | 24.79 | 1.82         | 1.39 | 1.20 | 1.41 |
| 2150           | 5.38                            | 5.54  | 5.30 | 0.24                   | 3.33                      | 23.98             | 18.54 | 26.36 | 1.76         | 1.41 | 1.22 | 1.43 |
| 2200           | 5.35                            | 5.51  | 5.26 | 0.25                   | 3.31                      | 25.53             | 19.32 | 28.06 | 1.70         | 1.42 | 1.23 | 1.44 |
| 2250           | 5.31                            | 5.47  | 5.23 | 0.24                   | 3.34                      | 27.19             | 20.15 | 29.62 | 1.64         | 1.44 | 1.25 | 1.46 |
| 2300           | 5.28                            | 5.44  | 5.20 | 0.24                   | 3.35                      | 28.81             | 21.08 | 30.35 | 1.58         | 1.45 | 1.27 | 1.47 |
| 2350           | 5.25                            | 5.41  | 5.18 | 0.23                   | 3.35                      | 29.93             | 22.13 | 29.93 | 1.52         | 1.46 | 1.28 | 1.48 |
| 2400           | 5.22                            | 5.39  | 5.15 | 0.24                   | 3.33                      | 29.92             | 23.35 | 28.53 | 1.47         | 1.48 | 1.29 | 1.49 |
| 2450           | 5.20                            | 5.37  | 5.13 | 0.24                   | 3.32                      | 28.71             | 24.71 | 26.83 | 1.41         | 1.49 | 1.31 | 1.50 |
| 2500           | 5.17                            | 5.36  | 5.12 | 0.24                   | 3.26                      | 27.01             | 26.30 | 25.17 | 1.36         | 1.50 | 1.32 | 1.50 |
| 2550           | 5.16                            | 5.35  | 5.11 | 0.24                   | 3.22                      | 25.29             | 28.01 | 23.68 | 1.32         | 1.51 | 1.34 | 1.51 |
| 2600           | 5.14                            | 5.35  | 5.10 | 0.25                   | 3.24                      | 23.79             | 29.87 | 22.38 | 1.29         | 1.52 | 1.35 | 1.52 |
| 2650           | 5.13                            | 5.36  | 5.10 | 0.26                   | 3.22                      | 22.40             | 31.25 | 21.18 | 1.27         | 1.53 | 1.36 | 1.53 |
| 2700           | 5.13                            | 5.38  | 5.11 | 0.27                   | 3.19                      | 21.20             | 31.48 | 20.17 | 1.27         | 1.54 | 1.38 | 1.54 |
| 2750           | 5.14                            | 5.41  | 5.13 | 0.28                   | 3.18                      | 20.11             | 30.48 | 19.24 | 1.28         | 1.55 | 1.39 | 1.55 |
| 2800           | 5.15                            | 5.44  | 5.15 | 0.29                   | 3.18                      | 19.15             | 28.73 | 18.41 | 1.32         | 1.57 | 1.41 | 1.57 |
| 2850           | 5.17                            | 5.49  | 5.18 | 0.32                   | 3.16                      | 18.30             | 27.01 | 17.67 | 1.37         | 1.59 | 1.43 | 1.58 |
| 2900           | 5.20                            | 5.55  | 5.23 | 0.35                   | 3.14                      | 17.54             | 25.43 | 17.00 | 1.43         | 1.61 | 1.45 | 1.60 |
| 2950           | 5.24                            | 5.61  | 5.28 | 0.37                   | 3.12                      | 16.86             | 24.10 | 16.42 | 1.50         | 1.63 | 1.48 | 1.63 |
| 3000           | 5.29                            | 5.69  | 5.34 | 0.41                   | 3.08                      | 16.27             | 22.96 | 15.90 | 1.59         | 1.65 | 1.51 | 1.66 |
| 3100           | 5.42                            | 5.90  | 5.50 | 0.48                   | 3.00                      | 15.24             | 21.05 | 15.00 | 1.80         | 1.72 | 1.58 | 1.73 |
| 3200           | 5.61                            | 6.17  | 5.72 | 0.56                   | 2.87                      | 14.40             | 19.56 | 14.26 | 2.07         | 1.81 | 1.66 | 1.82 |
| 3250           | 5.71                            | 6.33  | 5.84 | 0.63                   | 2.83                      | 14.04             | 18.99 | 13.97 | 2.22         | 1.85 | 1.72 | 1.87 |
| 3300           | 5.82                            | 6.50  | 5.97 | 0.68                   | 2.75                      | 13.73             | 18.47 | 13.72 | 2.38         | 1.91 | 1.77 | 1.94 |
| 3400           | 6.09                            | 6.90  | 6.29 | 0.82                   | 2.55                      | 13.23             | 17.64 | 13.32 | 2.75         | 2.03 | 1.91 | 2.08 |
| 3500           | 6.40                            | 7.37  | 6.65 | 0.98                   | 2.26                      | 12.87             | 16.99 | 13.05 | 3.19         | 2.18 | 2.06 | 2.25 |
| 4000           | 8.64                            | 10.85 | 9.22 | 2.21                   | 2.58                      | 12.91             | 16.30 | 13.66 | 6.89         | 3.29 | 3.27 | 3.58 |

<sup>1</sup> Total Loss = Insertion Loss+ 4.8dB Splitter Loss

# 3 Way-0° Power Splitter/Combiner

# SCN-3-28+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0dBm @ Temperature = -55°C

| FREQ.<br>(MHz) | TOTAL LOSS <sup>1</sup><br>(dB) |       |      | AMP.<br>UNBAL.<br>(dB) | PHASE<br>UNBAL.<br>(deg.) | ISOLATION<br>(dB) |       |       | VSWR<br>(:1) |      |      |      |
|----------------|---------------------------------|-------|------|------------------------|---------------------------|-------------------|-------|-------|--------------|------|------|------|
|                | S-1                             | S-2   | S-3  |                        |                           | 1-2               | 1-3   | 2-3   | S            | 1    | 2    | 3    |
| 10             | 6.05                            | 6.06  | 6.03 | 0.03                   | 0.39                      | 6.08              | 6.05  | 6.03  | 3.02         | 2.97 | 2.97 | 2.96 |
| 50             | 6.08                            | 6.04  | 5.99 | 0.09                   | 0.62                      | 6.08              | 6.03  | 6.03  | 3.03         | 2.94 | 2.93 | 2.91 |
| 100            | 6.03                            | 6.01  | 5.96 | 0.07                   | 0.52                      | 6.15              | 6.13  | 6.14  | 2.95         | 2.91 | 2.93 | 2.89 |
| 200            | 6.01                            | 6.01  | 5.96 | 0.05                   | 0.35                      | 6.27              | 6.34  | 6.34  | 2.94         | 2.78 | 2.83 | 2.76 |
| 300            | 6.01                            | 6.05  | 5.97 | 0.08                   | 0.35                      | 6.43              | 6.60  | 6.58  | 2.96         | 2.59 | 2.68 | 2.55 |
| 400            | 5.99                            | 6.05  | 5.96 | 0.09                   | 0.37                      | 6.68              | 6.96  | 6.92  | 2.95         | 2.39 | 2.51 | 2.34 |
| 500            | 5.95                            | 6.06  | 5.93 | 0.13                   | 0.50                      | 7.00              | 7.35  | 7.34  | 2.92         | 2.17 | 2.34 | 2.14 |
| 600            | 5.92                            | 6.07  | 5.89 | 0.18                   | 0.36                      | 7.38              | 7.78  | 7.82  | 2.89         | 1.97 | 2.16 | 1.94 |
| 700            | 5.92                            | 6.06  | 5.86 | 0.20                   | 0.36                      | 7.81              | 8.21  | 8.30  | 2.88         | 1.80 | 1.96 | 1.75 |
| 800            | 5.89                            | 6.06  | 5.82 | 0.24                   | 0.40                      | 8.30              | 8.65  | 8.89  | 2.85         | 1.63 | 1.81 | 1.59 |
| 900            | 5.83                            | 6.04  | 5.78 | 0.26                   | 0.64                      | 8.86              | 9.14  | 9.55  | 2.80         | 1.49 | 1.67 | 1.47 |
| 1000           | 5.82                            | 6.03  | 5.74 | 0.29                   | 0.89                      | 9.45              | 9.58  | 10.20 | 2.77         | 1.38 | 1.55 | 1.34 |
| 1100           | 5.78                            | 6.00  | 5.69 | 0.31                   | 1.36                      | 10.09             | 10.05 | 10.89 | 2.73         | 1.28 | 1.44 | 1.25 |
| 1200           | 5.75                            | 5.97  | 5.66 | 0.31                   | 1.65                      | 10.78             | 10.56 | 11.65 | 2.68         | 1.20 | 1.34 | 1.18 |
| 1300           | 5.71                            | 5.94  | 5.63 | 0.31                   | 1.90                      | 11.55             | 11.10 | 12.48 | 2.64         | 1.14 | 1.24 | 1.14 |
| 1400           | 5.67                            | 5.89  | 5.58 | 0.31                   | 2.13                      | 12.40             | 11.67 | 13.40 | 2.58         | 1.12 | 1.16 | 1.13 |
| 1500           | 5.63                            | 5.85  | 5.55 | 0.30                   | 2.40                      | 13.31             | 12.26 | 14.39 | 2.52         | 1.13 | 1.10 | 1.17 |
| 1600           | 5.56                            | 5.78  | 5.48 | 0.30                   | 2.62                      | 14.36             | 12.94 | 15.52 | 2.43         | 1.18 | 1.05 | 1.22 |
| 1650           | 5.54                            | 5.74  | 5.44 | 0.30                   | 2.70                      | 14.94             | 13.30 | 16.14 | 2.39         | 1.21 | 1.05 | 1.25 |
| 1700           | 5.51                            | 5.71  | 5.42 | 0.29                   | 2.79                      | 15.58             | 13.71 | 16.85 | 2.34         | 1.24 | 1.06 | 1.28 |
| 1750           | 5.48                            | 5.66  | 5.38 | 0.28                   | 2.83                      | 16.25             | 14.12 | 17.57 | 2.29         | 1.26 | 1.09 | 1.30 |
| 1800           | 5.45                            | 5.63  | 5.36 | 0.27                   | 2.95                      | 16.97             | 14.56 | 18.39 | 2.25         | 1.30 | 1.11 | 1.33 |
| 1850           | 5.41                            | 5.58  | 5.32 | 0.26                   | 3.00                      | 17.78             | 15.04 | 19.30 | 2.19         | 1.32 | 1.14 | 1.35 |
| 1900           | 5.37                            | 5.54  | 5.28 | 0.26                   | 3.03                      | 18.67             | 15.55 | 20.30 | 2.13         | 1.34 | 1.16 | 1.37 |
| 1950           | 5.33                            | 5.50  | 5.25 | 0.25                   | 3.07                      | 19.63             | 16.08 | 21.40 | 2.08         | 1.37 | 1.18 | 1.40 |
| 2000           | 5.29                            | 5.46  | 5.21 | 0.25                   | 3.10                      | 20.71             | 16.67 | 22.70 | 2.01         | 1.39 | 1.20 | 1.42 |
| 2050           | 5.23                            | 5.39  | 5.15 | 0.24                   | 3.15                      | 22.01             | 17.31 | 24.22 | 1.93         | 1.41 | 1.22 | 1.43 |
| 2100           | 5.18                            | 5.35  | 5.11 | 0.24                   | 3.26                      | 23.45             | 18.02 | 25.94 | 1.86         | 1.43 | 1.23 | 1.46 |
| 2150           | 5.14                            | 5.31  | 5.07 | 0.23                   | 3.30                      | 25.12             | 18.79 | 27.98 | 1.79         | 1.44 | 1.25 | 1.47 |
| 2200           | 5.10                            | 5.26  | 5.02 | 0.24                   | 3.35                      | 27.19             | 19.68 | 30.37 | 1.72         | 1.47 | 1.26 | 1.48 |
| 2250           | 5.05                            | 5.21  | 4.98 | 0.24                   | 3.39                      | 29.44             | 20.68 | 32.21 | 1.64         | 1.48 | 1.27 | 1.48 |
| 2300           | 5.01                            | 5.18  | 4.94 | 0.24                   | 3.42                      | 31.28             | 21.72 | 32.06 | 1.57         | 1.49 | 1.29 | 1.49 |
| 2350           | 4.97                            | 5.14  | 4.91 | 0.23                   | 3.43                      | 31.84             | 22.98 | 30.23 | 1.50         | 1.49 | 1.30 | 1.51 |
| 2400           | 4.94                            | 5.11  | 4.88 | 0.23                   | 3.43                      | 29.96             | 24.53 | 27.71 | 1.43         | 1.50 | 1.30 | 1.50 |
| 2450           | 4.91                            | 5.09  | 4.85 | 0.24                   | 3.49                      | 27.66             | 26.13 | 25.66 | 1.38         | 1.51 | 1.31 | 1.51 |
| 2500           | 4.88                            | 5.08  | 4.84 | 0.24                   | 3.52                      | 25.67             | 28.16 | 23.91 | 1.32         | 1.52 | 1.33 | 1.52 |
| 2550           | 4.87                            | 5.07  | 4.83 | 0.24                   | 3.50                      | 23.81             | 30.43 | 22.36 | 1.28         | 1.53 | 1.32 | 1.52 |
| 2600           | 4.85                            | 5.07  | 4.82 | 0.25                   | 3.45                      | 22.28             | 32.28 | 21.08 | 1.25         | 1.54 | 1.34 | 1.53 |
| 2650           | 4.85                            | 5.09  | 4.83 | 0.26                   | 3.47                      | 21.00             | 32.58 | 19.99 | 1.25         | 1.55 | 1.35 | 1.53 |
| 2700           | 4.85                            | 5.12  | 4.84 | 0.28                   | 3.51                      | 19.88             | 31.24 | 19.01 | 1.26         | 1.55 | 1.37 | 1.55 |
| 2750           | 4.87                            | 5.15  | 4.87 | 0.29                   | 3.44                      | 18.83             | 29.04 | 18.10 | 1.30         | 1.58 | 1.38 | 1.57 |
| 2800           | 4.88                            | 5.20  | 4.90 | 0.32                   | 3.45                      | 17.95             | 27.02 | 17.34 | 1.36         | 1.58 | 1.40 | 1.58 |
| 2850           | 4.92                            | 5.26  | 4.94 | 0.34                   | 3.50                      | 17.19             | 25.41 | 16.68 | 1.42         | 1.61 | 1.43 | 1.60 |
| 2900           | 4.96                            | 5.31  | 4.99 | 0.36                   | 3.43                      | 16.49             | 23.93 | 16.03 | 1.50         | 1.65 | 1.43 | 1.62 |
| 2950           | 4.99                            | 5.39  | 5.06 | 0.40                   | 3.38                      | 15.86             | 22.72 | 15.52 | 1.59         | 1.66 | 1.48 | 1.67 |
| 3000           | 5.05                            | 5.48  | 5.11 | 0.43                   | 3.33                      | 15.33             | 21.74 | 15.04 | 1.68         | 1.69 | 1.50 | 1.68 |
| 3100           | 5.17                            | 5.70  | 5.28 | 0.53                   | 3.07                      | 14.38             | 20.04 | 14.20 | 1.90         | 1.76 | 1.58 | 1.77 |
| 3200           | 5.32                            | 5.96  | 5.47 | 0.64                   | 2.97                      | 13.65             | 18.76 | 13.58 | 2.16         | 1.86 | 1.70 | 1.89 |
| 3250           | 5.44                            | 6.11  | 5.58 | 0.68                   | 2.97                      | 13.29             | 18.16 | 13.28 | 2.32         | 1.93 | 1.75 | 1.93 |
| 3300           | 5.53                            | 6.29  | 5.72 | 0.76                   | 2.87                      | 13.01             | 17.69 | 13.07 | 2.50         | 2.00 | 1.83 | 2.02 |
| 3400           | 5.77                            | 6.67  | 6.01 | 0.91                   | 2.51                      | 12.59             | 16.99 | 12.75 | 2.88         | 2.15 | 2.00 | 2.20 |
| 3500           | 6.04                            | 7.15  | 6.37 | 1.12                   | 2.45                      | 12.30             | 16.43 | 12.58 | 3.36         | 2.33 | 2.21 | 2.43 |
| 4000           | 8.59                            | 11.19 | 9.26 | 2.60                   | 3.29                      | 12.76             | 16.12 | 13.70 | 8.86         | 3.92 | 4.10 | 4.33 |

<sup>1</sup> Total Loss = Insertion Loss+ 4.8dB Splitter Loss

# 3 Way-0° Power Splitter/Combiner

# SCN-3-28+

## Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0dBm @ Temperature = +100°C

| FREQ.<br>(MHz) | TOTAL LOSS <sup>1</sup><br>(dB) |       |      | AMP.<br>UNBAL.<br>(dB) | PHASE<br>UNBAL.<br>(deg.) | ISOLATION<br>(dB) |       |       | VSWR<br>(:1) |      |      |      |
|----------------|---------------------------------|-------|------|------------------------|---------------------------|-------------------|-------|-------|--------------|------|------|------|
|                | S-1                             | S-2   | S-3  |                        |                           | 1-2               | 1-3   | 2-3   | S            | 1    | 2    | 3    |
| 10             | 6.07                            | 6.07  | 6.04 | 0.03                   | 0.42                      | 6.12              | 6.09  | 6.06  | 2.99         | 2.94 | 2.94 | 2.92 |
| 50             | 6.09                            | 6.05  | 6.00 | 0.09                   | 0.62                      | 6.14              | 6.10  | 6.10  | 2.97         | 2.92 | 2.92 | 2.89 |
| 100            | 6.17                            | 6.12  | 6.09 | 0.08                   | 0.45                      | 6.13              | 6.13  | 6.12  | 3.05         | 2.84 | 2.84 | 2.81 |
| 200            | 6.13                            | 6.12  | 6.09 | 0.04                   | 0.52                      | 6.30              | 6.38  | 6.38  | 2.97         | 2.70 | 2.75 | 2.69 |
| 300            | 6.10                            | 6.12  | 6.06 | 0.06                   | 0.33                      | 6.53              | 6.71  | 6.69  | 2.92         | 2.53 | 2.62 | 2.50 |
| 400            | 6.11                            | 6.15  | 6.08 | 0.07                   | 0.45                      | 6.79              | 7.07  | 7.02  | 2.93         | 2.32 | 2.43 | 2.28 |
| 500            | 6.10                            | 6.16  | 6.05 | 0.11                   | 0.44                      | 7.15              | 7.50  | 7.47  | 2.88         | 2.12 | 2.26 | 2.07 |
| 600            | 6.09                            | 6.20  | 6.03 | 0.17                   | 0.33                      | 7.56              | 7.96  | 7.98  | 2.86         | 1.92 | 2.08 | 1.88 |
| 700            | 6.09                            | 6.21  | 6.01 | 0.20                   | 0.27                      | 8.01              | 8.42  | 8.52  | 2.83         | 1.75 | 1.91 | 1.70 |
| 800            | 6.07                            | 6.22  | 5.99 | 0.23                   | 0.39                      | 8.53              | 8.90  | 9.13  | 2.79         | 1.60 | 1.76 | 1.55 |
| 900            | 6.05                            | 6.22  | 5.97 | 0.25                   | 0.59                      | 9.09              | 9.39  | 9.78  | 2.76         | 1.46 | 1.62 | 1.43 |
| 1000           | 6.03                            | 6.22  | 5.94 | 0.28                   | 0.87                      | 9.71              | 9.87  | 10.47 | 2.71         | 1.35 | 1.51 | 1.32 |
| 1100           | 6.00                            | 6.19  | 5.91 | 0.28                   | 1.19                      | 10.38             | 10.38 | 11.19 | 2.66         | 1.25 | 1.40 | 1.23 |
| 1200           | 5.98                            | 6.17  | 5.88 | 0.29                   | 1.47                      | 11.08             | 10.90 | 11.97 | 2.60         | 1.17 | 1.31 | 1.15 |
| 1300           | 5.94                            | 6.14  | 5.85 | 0.29                   | 1.68                      | 11.86             | 11.45 | 12.81 | 2.53         | 1.10 | 1.23 | 1.10 |
| 1400           | 5.90                            | 6.11  | 5.81 | 0.30                   | 1.91                      | 12.68             | 12.00 | 13.69 | 2.46         | 1.06 | 1.16 | 1.08 |
| 1500           | 5.86                            | 6.06  | 5.76 | 0.30                   | 2.13                      | 13.59             | 12.59 | 14.67 | 2.38         | 1.07 | 1.10 | 1.10 |
| 1600           | 5.80                            | 6.01  | 5.71 | 0.30                   | 2.33                      | 14.58             | 13.23 | 15.72 | 2.29         | 1.12 | 1.05 | 1.14 |
| 1650           | 5.78                            | 5.98  | 5.68 | 0.30                   | 2.42                      | 15.10             | 13.56 | 16.30 | 2.24         | 1.14 | 1.03 | 1.17 |
| 1700           | 5.75                            | 5.96  | 5.66 | 0.30                   | 2.50                      | 15.66             | 13.92 | 16.91 | 2.20         | 1.17 | 1.02 | 1.19 |
| 1750           | 5.72                            | 5.93  | 5.63 | 0.30                   | 2.63                      | 16.24             | 14.27 | 17.54 | 2.15         | 1.19 | 1.03 | 1.22 |
| 1800           | 5.69                            | 5.90  | 5.60 | 0.30                   | 2.74                      | 16.87             | 14.66 | 18.23 | 2.10         | 1.22 | 1.04 | 1.24 |
| 1850           | 5.66                            | 5.86  | 5.58 | 0.28                   | 2.88                      | 17.54             | 15.07 | 18.97 | 2.05         | 1.24 | 1.06 | 1.26 |
| 1900           | 5.64                            | 5.84  | 5.55 | 0.29                   | 2.99                      | 18.26             | 15.49 | 19.77 | 2.00         | 1.27 | 1.08 | 1.29 |
| 1950           | 5.61                            | 5.80  | 5.52 | 0.28                   | 3.06                      | 19.05             | 15.96 | 20.66 | 1.94         | 1.29 | 1.10 | 1.31 |
| 2000           | 5.58                            | 5.77  | 5.49 | 0.28                   | 3.19                      | 19.90             | 16.46 | 21.65 | 1.89         | 1.31 | 1.12 | 1.33 |
| 2050           | 5.55                            | 5.73  | 5.46 | 0.27                   | 3.26                      | 20.86             | 16.99 | 22.69 | 1.83         | 1.33 | 1.13 | 1.35 |
| 2100           | 5.52                            | 5.70  | 5.44 | 0.26                   | 3.38                      | 21.88             | 17.57 | 23.85 | 1.78         | 1.35 | 1.15 | 1.37 |
| 2150           | 5.49                            | 5.67  | 5.41 | 0.26                   | 3.43                      | 23.02             | 18.18 | 25.10 | 1.73         | 1.37 | 1.17 | 1.39 |
| 2200           | 5.47                            | 5.64  | 5.38 | 0.26                   | 3.50                      | 24.28             | 18.89 | 26.47 | 1.68         | 1.39 | 1.19 | 1.41 |
| 2250           | 5.44                            | 5.61  | 5.36 | 0.25                   | 3.57                      | 25.66             | 19.64 | 27.79 | 1.63         | 1.40 | 1.21 | 1.42 |
| 2300           | 5.41                            | 5.59  | 5.34 | 0.25                   | 3.62                      | 27.01             | 20.45 | 28.67 | 1.58         | 1.41 | 1.22 | 1.44 |
| 2350           | 5.39                            | 5.57  | 5.32 | 0.25                   | 3.67                      | 28.17             | 21.35 | 28.95 | 1.52         | 1.43 | 1.24 | 1.45 |
| 2400           | 5.37                            | 5.55  | 5.30 | 0.25                   | 3.68                      | 28.81             | 22.39 | 28.45 | 1.48         | 1.45 | 1.26 | 1.47 |
| 2450           | 5.36                            | 5.53  | 5.29 | 0.24                   | 3.75                      | 28.63             | 23.52 | 27.36 | 1.43         | 1.46 | 1.28 | 1.48 |
| 2500           | 5.33                            | 5.52  | 5.28 | 0.24                   | 3.77                      | 27.72             | 24.85 | 26.08 | 1.39         | 1.48 | 1.29 | 1.49 |
| 2550           | 5.32                            | 5.51  | 5.27 | 0.24                   | 3.78                      | 26.36             | 26.34 | 24.68 | 1.34         | 1.49 | 1.31 | 1.50 |
| 2600           | 5.30                            | 5.51  | 5.26 | 0.25                   | 3.79                      | 24.96             | 28.00 | 23.43 | 1.31         | 1.50 | 1.32 | 1.52 |
| 2650           | 5.29                            | 5.51  | 5.26 | 0.25                   | 3.82                      | 23.59             | 29.64 | 22.24 | 1.28         | 1.51 | 1.34 | 1.53 |
| 2700           | 5.29                            | 5.53  | 5.26 | 0.27                   | 3.79                      | 22.33             | 30.92 | 21.15 | 1.27         | 1.53 | 1.36 | 1.54 |
| 2750           | 5.28                            | 5.54  | 5.27 | 0.27                   | 3.77                      | 21.18             | 31.25 | 20.19 | 1.26         | 1.54 | 1.38 | 1.55 |
| 2800           | 5.29                            | 5.57  | 5.29 | 0.28                   | 3.81                      | 20.16             | 30.34 | 19.33 | 1.27         | 1.55 | 1.40 | 1.56 |
| 2850           | 5.31                            | 5.61  | 5.31 | 0.30                   | 3.85                      | 19.25             | 28.77 | 18.55 | 1.30         | 1.57 | 1.42 | 1.57 |
| 2900           | 5.32                            | 5.65  | 5.35 | 0.33                   | 3.81                      | 18.43             | 27.06 | 17.81 | 1.35         | 1.59 | 1.44 | 1.60 |
| 2950           | 5.36                            | 5.71  | 5.39 | 0.35                   | 3.77                      | 17.70             | 25.59 | 17.18 | 1.40         | 1.61 | 1.46 | 1.61 |
| 3000           | 5.39                            | 5.78  | 5.44 | 0.39                   | 3.71                      | 17.04             | 24.24 | 16.63 | 1.47         | 1.63 | 1.49 | 1.64 |
| 3100           | 5.51                            | 5.98  | 5.59 | 0.47                   | 3.67                      | 15.89             | 21.98 | 15.60 | 1.67         | 1.68 | 1.57 | 1.71 |
| 3200           | 5.69                            | 6.23  | 5.79 | 0.55                   | 3.61                      | 14.99             | 20.31 | 14.81 | 1.92         | 1.76 | 1.65 | 1.79 |
| 3250           | 5.80                            | 6.39  | 5.91 | 0.59                   | 3.54                      | 14.59             | 19.60 | 14.47 | 2.06         | 1.81 | 1.69 | 1.84 |
| 3300           | 5.92                            | 6.57  | 6.05 | 0.65                   | 3.47                      | 14.23             | 18.99 | 14.19 | 2.22         | 1.86 | 1.75 | 1.90 |
| 3400           | 6.23                            | 6.99  | 6.39 | 0.77                   | 3.27                      | 13.67             | 18.04 | 13.72 | 2.58         | 1.97 | 1.87 | 2.03 |
| 3500           | 6.58                            | 7.48  | 6.79 | 0.91                   | 3.09                      | 13.28             | 17.29 | 13.39 | 3.02         | 2.11 | 2.02 | 2.19 |
| 4000           | 8.89                            | 10.90 | 9.42 | 2.01                   | 3.69                      | 13.14             | 16.46 | 13.79 | 6.21         | 3.09 | 2.98 | 3.29 |

<sup>1</sup> Total Loss = Insertion Loss+ 4.8dB Splitter Loss

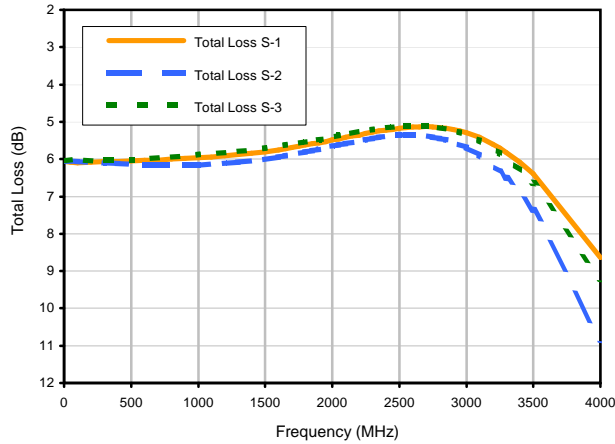


# 3 Way-0° Power Splitter/Combiner

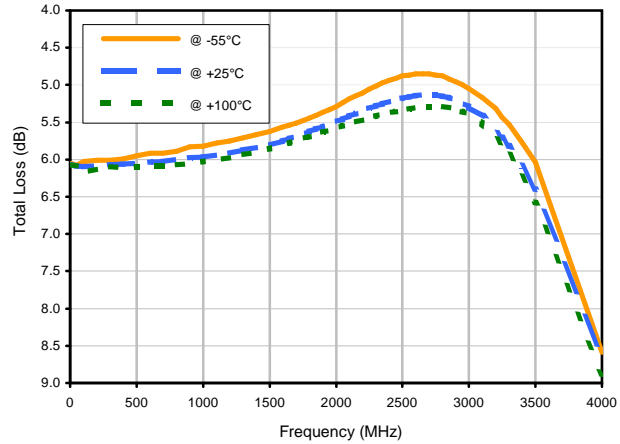
# SCN-3-28+

## Typical Performance Curves

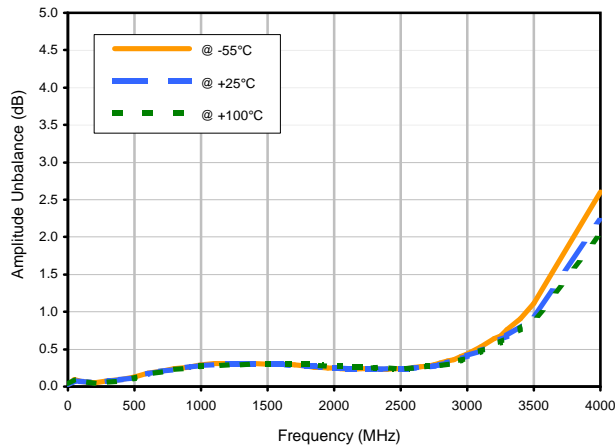
**Total Loss**



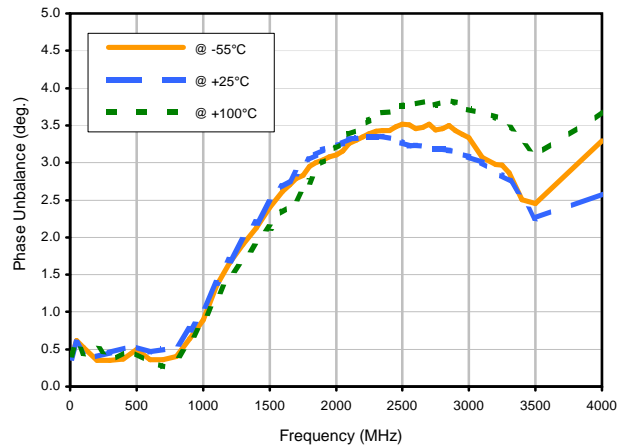
**Total Loss S-1 vs. TEMPERATURE**



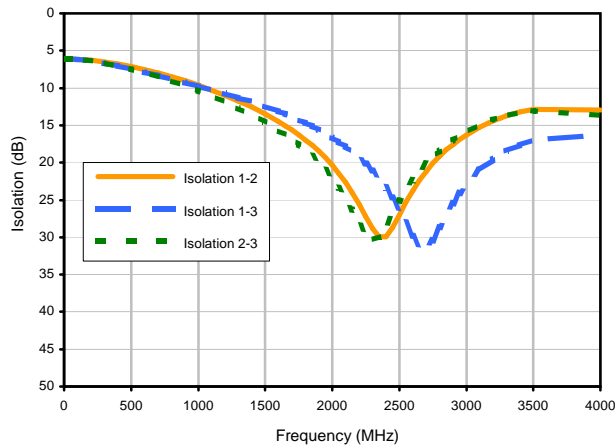
**Amplitude Unbalance vs. TEMPERATURE**



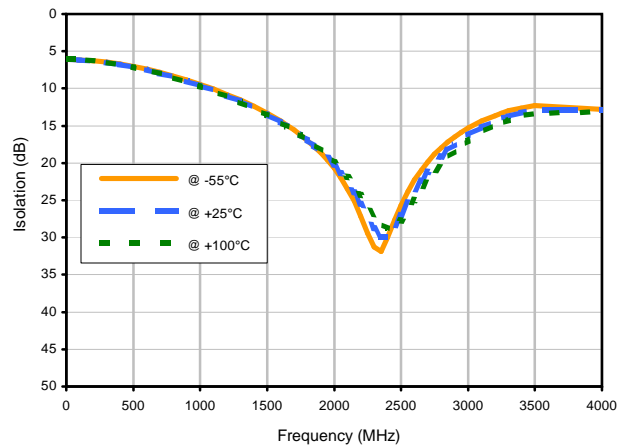
**Phase Unbalance vs. TEMPERATURE**



**Isolation**



**Isolation 1-2 vs. TEMPERATURE**



REV. X2  
SCN-3-28+  
100627  
Page 1 of 2



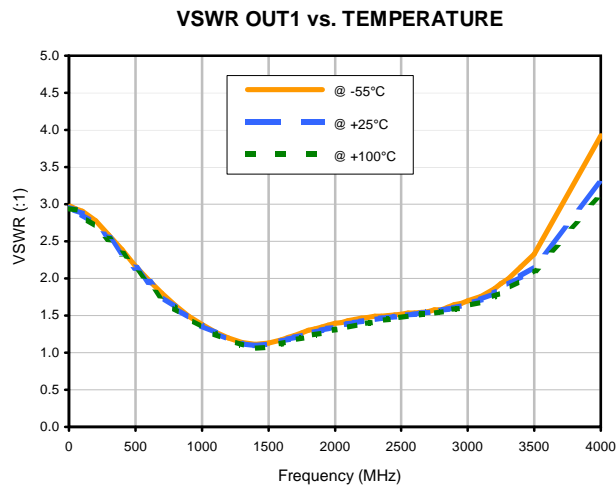
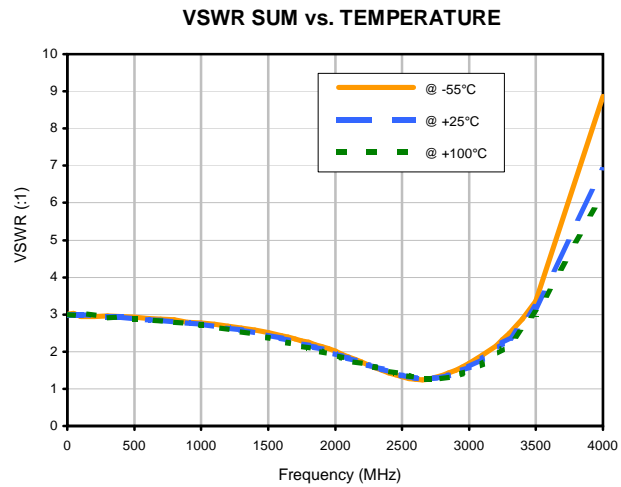
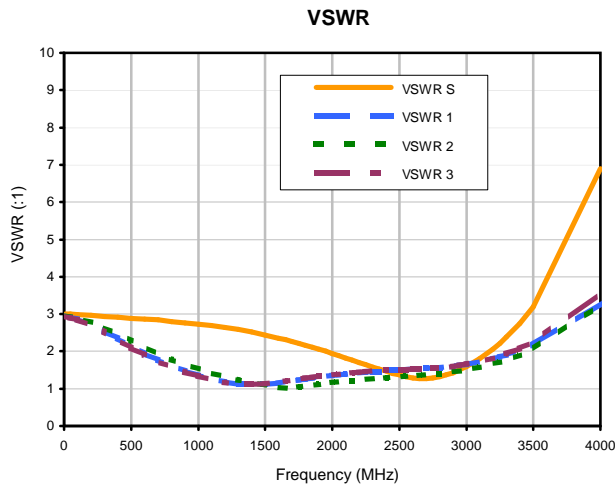
RF/MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS 9100 CERTIFIED • RoHS compliant  
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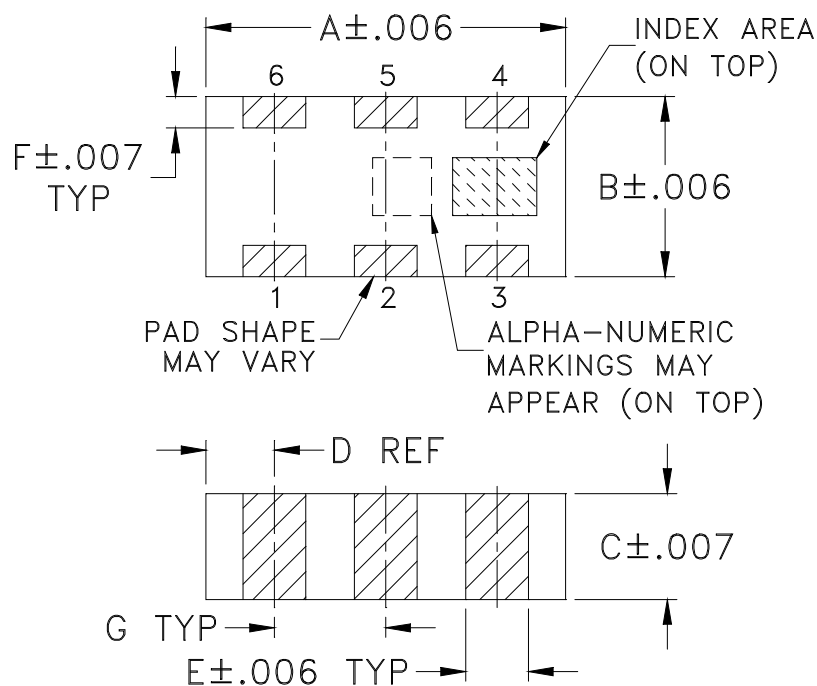
The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see



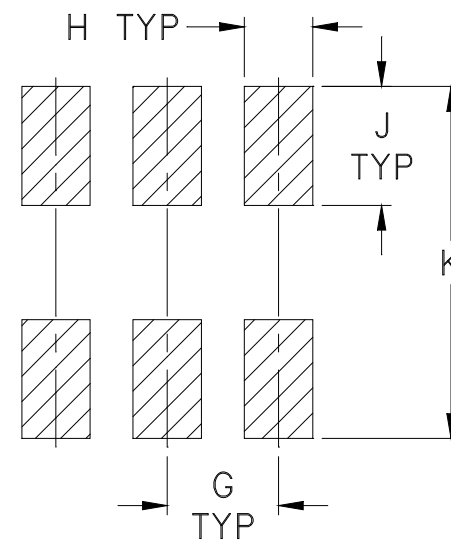
## Typical Performance Curves



### Outline Dimensions



### PCB Land Pattern



Suggested Layout,  
Tolerance to be within  $\pm.002$

| CASE #   | A              | B              | C              | D              | E              | F              | G              | H              | J              | K              | L  | M  | N  | P  | WT. GRAM |
|----------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----|----|----|----------|
| FV1206-1 | .126<br>(3.20) | .063<br>(1.60) | .035<br>(0.89) | .024<br>(0.61) | .022<br>(0.56) | .011<br>(0.28) | .039<br>(0.99) | .024<br>(0.61) | .042<br>(1.07) | .123<br>(3.12) | -- | -- | -- | -- | .020     |

Dimensions are in inches (mm). Tolerances: 2 Pl.  $\pm.01$ ; 3 Pl.  $\pm.005$

#### Notes:

- Open style, ceramic base.
- Termination finish: **as shown below or indicated on Data Sheet.**  
For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.  
For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.



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

## DEVICE ORIENTATION IN T&R

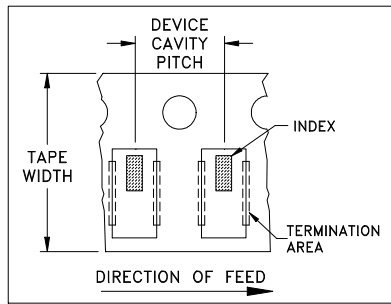


ILLUSTRATION 1

| Applicable Case Styles |
|------------------------|
| FV1206-1<br>FV1206-3   |

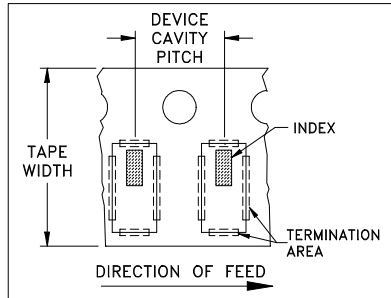


ILLUSTRATION 2

| Applicable Case Styles                                   |
|--|
| FV1206-4<br>FV1206-5<br>FV1206-6<br>FV1206-7<br>FV1206-9 |

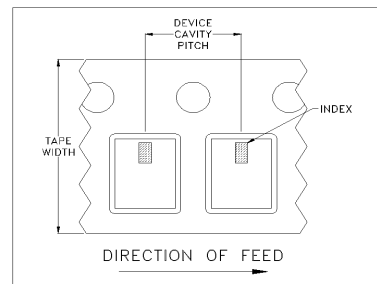


ILLUSTRATION 3

| Applicable Case Styles  |
|---|
| FV1206-11<br>FV1206-12<br>GE0805C-18<br>NL1008C-6<br>NL1008C-7<br>NL1008C-9<br>NL1008C-10<br>NL1008C-12 |

| Tape Width, mm | Device Cavity Pitch, mm | Reel Size, inches | Devices per Reel                    |      |
|----------------|-------------------------|-------------------|-------------------------------------|------|
| 8              | 4                       | 7                 | Small quantity standards (see note) | 20   |
|                |                         |                   |                                     | 50   |
|                |                         |                   |                                     | 100  |
|                |                         |                   |                                     | 200  |
|                |                         |                   |                                     | 500  |
|                |                         |                   |                                     | 1000 |
|                |                         |                   | Standard                            | 3000 |

Note: Please consult individual model data sheet to determine device per reel availability.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: [www.minicircuits.com/pages/pdfs/tape.pdf](http://www.minicircuits.com/pages/pdfs/tape.pdf)

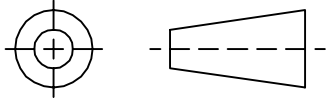


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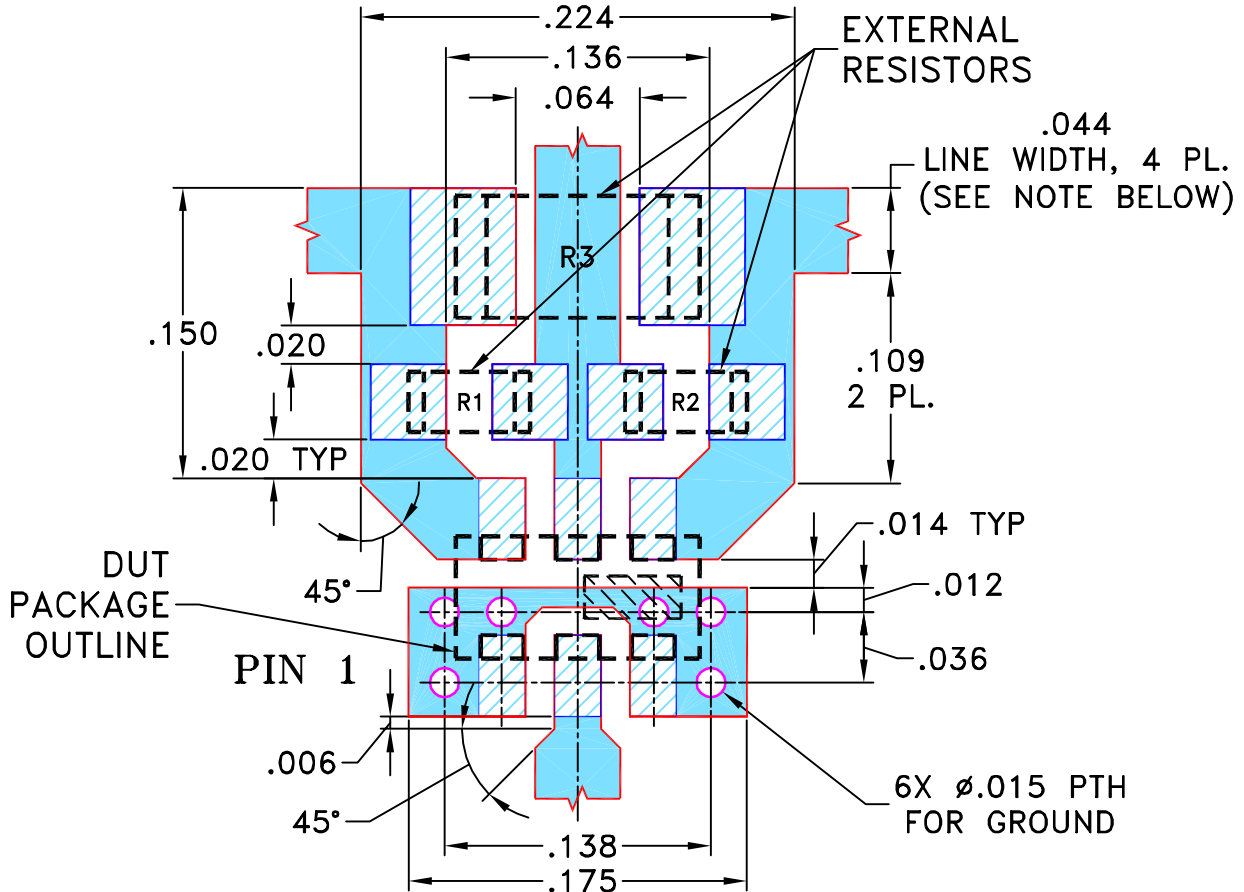
THIRD ANGLE PROJECTION



REVISIONS



| REV | ECN No. | DESCRIPTION                           | DATE     | DR  | AUTH |
|-----|---------|---------------------------------------|----------|-----|------|
| OR  | M94644  | NEW RELEASE                           | 10/12/04 | MMG | ABD  |
| A   | M102713 | ADDED "...WITH SMOBC", REMOVED NOTE 2 | 01/20/06 | GT  | IL   |

**SUGGESTED MOUNTING CONFIGURATION  
FOR FV1206-1 CASE STYLE, "qc" PIN CONNECTION.**



RESISTORS: R1-R2: 124 Ohm, 0603 SIZE; R3: 127 Ohm, 1206 SIZE.

- NOTES:** 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS: .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.  
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

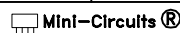
 DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

| UNLESS OTHERWISE SPECIFIED | INITIALS     | DATE     |
|----------------------------|--------------|----------|
| DIMENSIONS ARE IN INCHES   | DRAWN MMG    | 10/04/04 |
| TOLERANCES ON:             | CHECKED AV   | 10/12/04 |
| 2 PL DECIMALS ±            | APPROVED ABD | 10/12/04 |
| 3 PL DECIMALS ± .005       |              |          |
| ANGLES ±                   |              |          |
| FRACTIONS ±                |              |          |

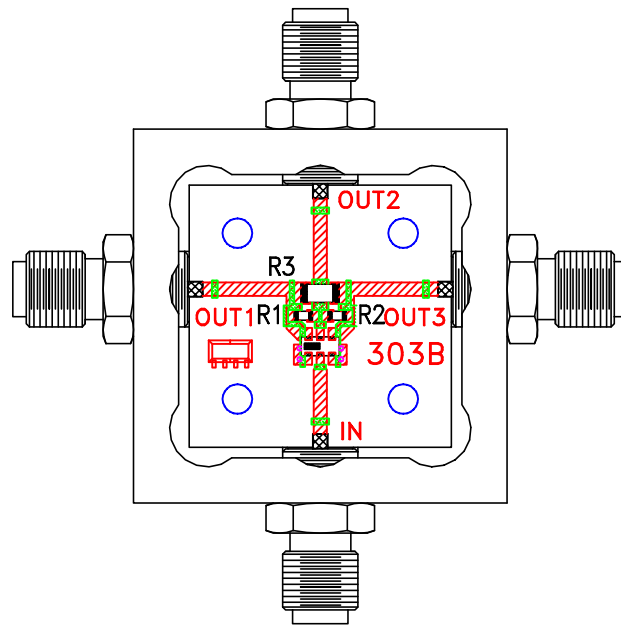
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Brooklyn NY 11235

PL, qc, FV1206-1, SCN-3, TB-303

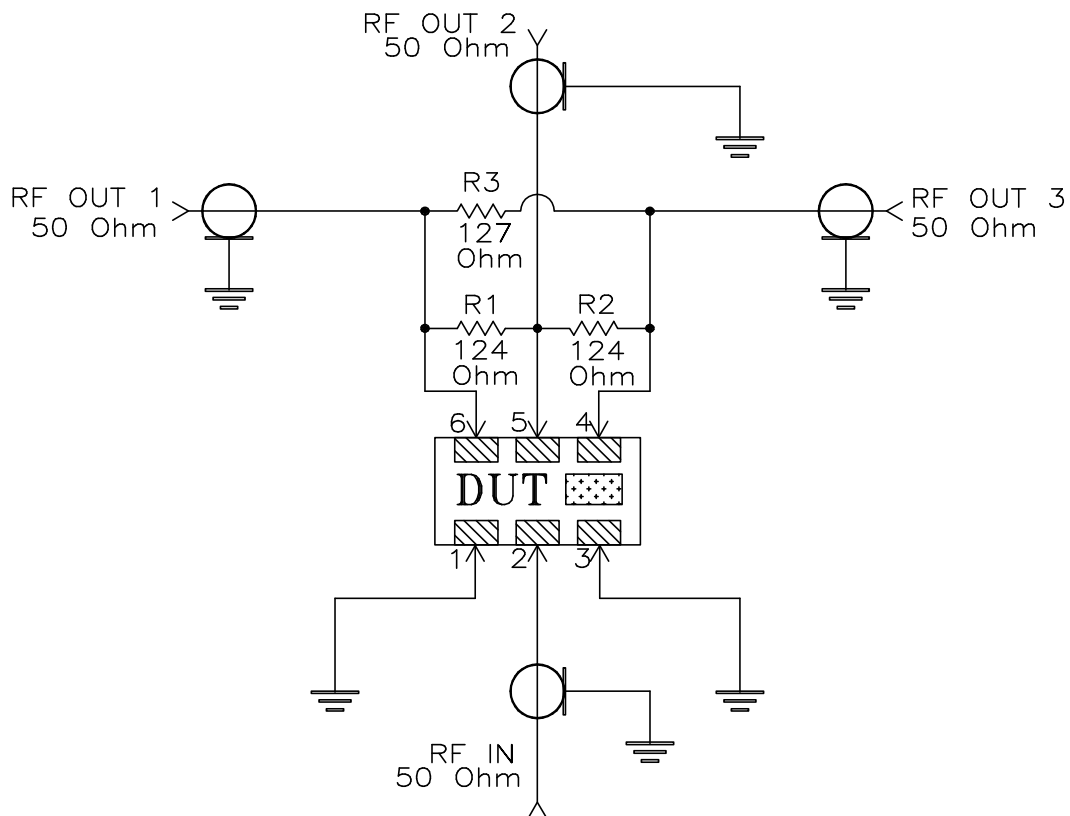
|                  |                     |                          |           |
|------------------|---------------------|--------------------------|-----------|
| SIZE<br>A        | CODE IDENT<br>15542 | DRAWING NO:<br>98-PL-171 | REV:<br>A |
| FILE:<br>98PL171 | SCALE:<br>10:1      | SHEET:<br>1 OF 1         |           |

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# Evaluation Board and Circuit




TB-303



Schematic Diagram

## Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,  
Dielectric Constant=3.5, Thickness=.020 inch.

 **Mini-Circuits®**

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      | -55° to 100°C<br>Ambient Environment  | Individual Model Data Sheet  |
| Storage Temperature        | -55° to 100° C<br>Ambient Environment   | Individual Model Data Sheet  |
| Humidity                   | 90 to 95% RH, 240 hours, 50°C   | MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours |
| Solder Reflow Heat         | Sn-Pb Eutetic Process: 225°C peak<br>Pb-Free Process 245° - 250°C peak              | J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1  |
| Solderability              | 10X Magnification   | J-STD-002, Para 4.2.5, Test S, 95% Coverage  |
| 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           | 50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes                   | MIL-STD-202, Method 213, Condition A   |