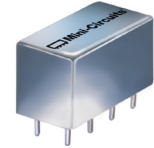


Plug-In

# Power Splitter/Combiner

3 Way-0° 50Ω 1 to 300 MHz

PSC-3-1A+  
PSC-3-1A



CASE STYLE: A01

## Maximum Ratings

|                                                                 |                |
|-----------------------------------------------------------------|----------------|
| Operating Temperature                                           | -55°C to 100°C |
| Storage Temperature                                             | -55°C to 100°C |
| Power Input (as a splitter)                                     | 1W max.        |
| Internal Dissipation                                            | 0.375W max.    |
| Permanent damage may occur if any of these limits are exceeded. |                |

## Pin Connections

|             |         |
|-------------|---------|
| SUM PORT    | 6       |
| PORT 1      | 1       |
| PORT 2      | 2       |
| PORT 3      | 5       |
| GROUND      | 3,4,7,8 |
| CASE GROUND | 3,4,7,8 |

## Features

- wideband, 1 to 300 MHz
- low insertion loss, 0.2 dB typ.
- good isolation, 33 dB typ.
- rugged welded construction

## Applications

- VHF
- federal & defense communications

**+RoHS Compliant**

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

## Electrical Specifications

| FREQ. RANGE (MHz)              | ISOLATION (dB) |      |      |      |      |      | INSERTION LOSS (dB) ABOVE 4.8 dB |      |      |      |      |      | PHASE UNBALANCE (Degrees) |      |      | AMPLITUDE UNBALANCE (dB) |      |      |
|--------------------------------|----------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|---------------------------|------|------|--------------------------|------|------|
|                                | L              |      | M    |      | U    |      | L                                |      | M    |      | U    |      | L                         |      | M    |                          | U    |      |
|                                | Typ.           | Min. | Typ. | Min. | Typ. | Min. | Typ.                             | Max. | Typ. | Max. | Typ. | Max. | Max.                      | Max. | Max. | Max.                     | Max. | Max. |
| f <sub>L</sub> -f <sub>U</sub> |                |      |      |      |      |      |                                  |      |      |      |      |      |                           |      |      |                          |      |      |
| 1-300                          | 38             | 30   | 33   | 23   | 29   | 22   | 0.2                              | 0.5  | 0.2  | 0.7  | 0.6  | 1.5  | 1                         | 3    | 5    | 0.2                      | 0.3  | 0.6  |

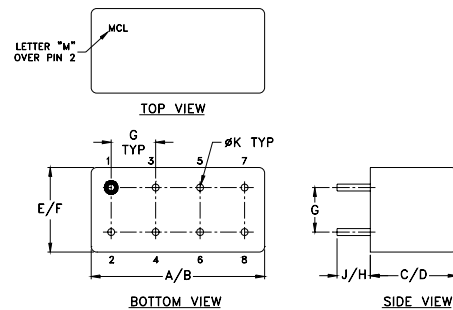
L = low range [f<sub>L</sub> to 10 f<sub>L</sub>] M = mid range [10 f<sub>L</sub> to f<sub>U</sub>/2] U = upper range [f<sub>U</sub>/2 to f<sub>U</sub>]

## Typical Performance Data

| Freq. (MHz) | Total Loss <sup>1</sup> (dB) |      |      | Amp. Unbal. (dB) | Isolation (dB) |       |       | Phase Unbal. (deg.) | VSWR S | VSWR 1 | VSWR 2 | VSWR 3 |
|-------------|------------------------------|------|------|------------------|----------------|-------|-------|---------------------|--------|--------|--------|--------|
|             | S-1                          | S-2  | S-3  |                  | 1-2            | 1-3   | 2-3   |                     |        |        |        |        |
| 1.00        | 5.02                         | 5.02 | 5.01 | 0.01             | 36.87          | 35.64 | 37.13 | 0.02                | 1.06   | 1.14   | 1.13   | 1.14   |
| 3.00        | 4.99                         | 5.00 | 5.00 | 0.01             | 43.72          | 39.72 | 43.18 | 0.09                | 1.03   | 1.08   | 1.07   | 1.08   |
| 5.00        | 5.00                         | 4.99 | 4.99 | 0.01             | 48.06          | 41.28 | 46.49 | 0.07                | 1.03   | 1.06   | 1.06   | 1.06   |
| 20.00       | 5.01                         | 5.01 | 5.00 | 0.02             | 41.81          | 39.74 | 42.21 | 0.18                | 1.03   | 1.04   | 1.03   | 1.04   |
| 35.00       | 5.05                         | 5.05 | 5.04 | 0.01             | 37.18          | 37.06 | 37.94 | 0.27                | 1.04   | 1.04   | 1.03   | 1.04   |
| 50.00       | 5.06                         | 5.06 | 5.07 | 0.01             | 34.48          | 35.01 | 35.33 | 0.39                | 1.05   | 1.03   | 1.03   | 1.04   |
| 65.00       | 5.08                         | 5.09 | 5.09 | 0.01             | 32.63          | 33.53 | 33.49 | 0.50                | 1.06   | 1.03   | 1.02   | 1.04   |
| 90.00       | 5.11                         | 5.12 | 5.13 | 0.02             | 30.44          | 31.73 | 31.30 | 0.70                | 1.07   | 1.03   | 1.02   | 1.04   |
| 120.00      | 5.15                         | 5.16 | 5.18 | 0.03             | 28.82          | 30.33 | 29.71 | 0.84                | 1.07   | 1.03   | 1.03   | 1.06   |
| 150.00      | 5.19                         | 5.20 | 5.24 | 0.05             | 27.98          | 29.68 | 28.92 | 1.16                | 1.07   | 1.04   | 1.05   | 1.08   |
| 180.00      | 5.23                         | 5.24 | 5.31 | 0.08             | 27.84          | 29.77 | 28.89 | 1.13                | 1.05   | 1.06   | 1.08   | 1.11   |
| 210.00      | 5.28                         | 5.30 | 5.38 | 0.09             | 28.50          | 30.74 | 29.83 | 1.45                | 1.05   | 1.09   | 1.11   | 1.15   |
| 250.00      | 5.38                         | 5.40 | 5.51 | 0.13             | 31.22          | 34.62 | 33.70 | 1.50                | 1.11   | 1.14   | 1.16   | 1.22   |
| 280.00      | 5.48                         | 5.52 | 5.66 | 0.17             | 35.47          | 42.39 | 42.28 | 1.52                | 1.20   | 1.18   | 1.20   | 1.27   |
| 300.00      | 5.56                         | 5.61 | 5.76 | 0.20             | 35.87          | 39.02 | 39.97 | 1.58                | 1.28   | 1.21   | 1.24   | 1.31   |

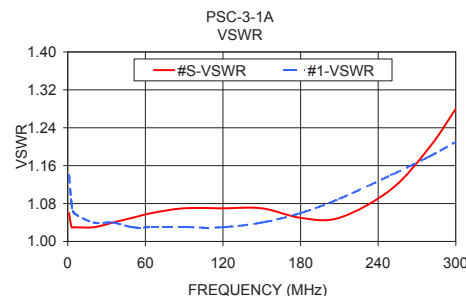
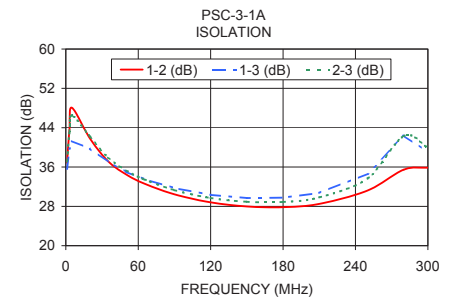
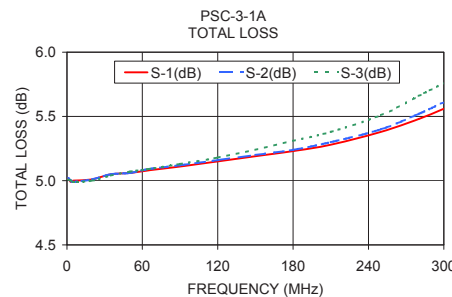
1. Total Loss = Insertion Loss + 4.8dB splitter loss.

## Outline Drawing



## Outline Dimensions (inch/mm)

| A     | B     | C    | D     | E    | F     |
|-------|-------|------|-------|------|-------|
| .770  | .800  | .385 | .400  | .370 | .400  |
| 19.56 | 20.32 | 9.78 | 10.16 | 9.40 | 10.16 |
| G     | H     | J    | K     |      | wt    |
| .200  | .20   | .14  | .031  |      | grams |
| 5.08  | 5.08  | 3.56 | 0.79  |      | 5.2   |



## electrical schematic



## 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-Circuits' applicable established test performance criteria and measurement instructions.  
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