

## Power Splitter/Combiner

ZN4PD1-50+

4 Way-0° 50Ω 500 to 5000 MHz

## Maximum Ratings

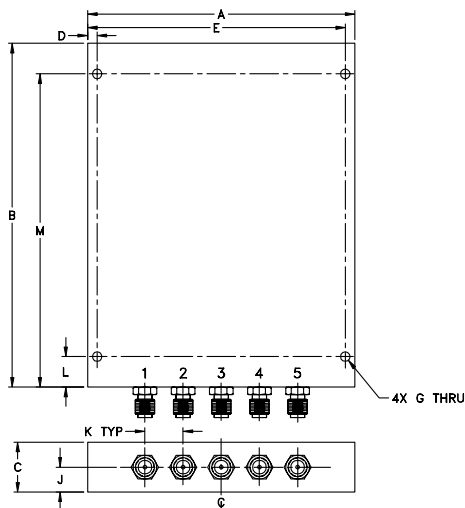
|                             |                             |
|-----------------------------|-----------------------------|
| Operating Temperature       | -55°C to 100°C              |
| Storage Temperature         | -55°C to 100°C              |
| Power Input (as a splitter) | 10W max.                    |
| Internal Dissipation        | 0.75W max.                  |
| DC Current                  | 1.0 A (250mA for each port) |

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

## Coaxial Connections

|          |   |
|----------|---|
| SUM PORT | 3 |
| PORT 1   | 1 |
| PORT 2   | 2 |
| PORT 3   | 4 |
| PORT 4   | 5 |

## Outline Drawing



## Outline Dimensions (inch mm)

|       |        |       |       |        |    |       |
|-------|--------|-------|-------|--------|----|-------|
| A     | B      | C     | D     | E      | F  | G     |
| 3.50  | 4.50   | .65   | .125  | 3.375  | -- | .125  |
| 88.90 | 114.30 | 16.51 | 3.18  | 85.73  | -- | 3.18  |
| H     | J      | K     | L     | M      |    | wt    |
| --    | .33    | .50   | .400  | 4.100  |    | grams |
| --    | 8.38   | 12.70 | 10.16 | 104.14 |    | 288   |

## Features

- wideband, 500 to 5000 MHz
- high isolation, 23 dB typ.
- good input matching VSWR, 1.3:1 typ.
- up to 10W power input as splitter

## Applications

- UHF TV
- cellular/ISM/GSM
- satellite distribution
- GPS/L-BAND (MARSAT)
- PCS/DCS/UMTS
- ISM
- MMDS
- SATCOM



CASE STYLE: UU846

Connectors Model  
SMA ZN4PD1-50-S+

+RoHS Compliant

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

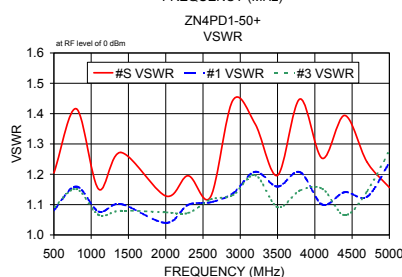
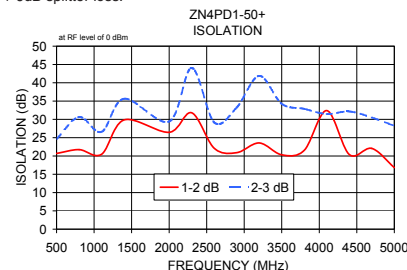
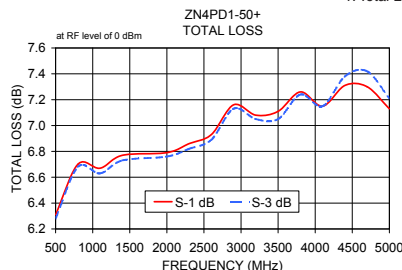
## Electrical Specifications

| FREQ. RANGE (MHz) | ISOLATION (dB) |      | INSERTION LOSS (dB) ABOVE 6.0 dB |      | PHASE UNBALANCE (Degrees) | AMPLITUDE UNBALANCE (dB) | VSWR (:1) |          |
|-------------------|----------------|------|----------------------------------|------|---------------------------|--------------------------|-----------|----------|
|                   | Typ.           | Min. | Typ.                             | Max. |                           |                          | S Typ.    | OUT Typ. |
| $f_L$ - $f_U$     |                |      |                                  |      | Max.                      | Max.                     |           |          |
| 500-5000          | 23             | 13   | 0.9                              | 1.8  | 8                         | 0.6                      | 1.3       | 1.1      |
| 500-1600          | 23             | 15   | 0.7                              | 1.4  | 4                         | 0.6                      | 1.3       | 1.1      |
| 1600-2700         | 23             | 17   | 0.8                              | 1.4  | 7                         | 0.6                      | 1.3       | 1.1      |
| 2700-3600         | 22             | 16   | 1.1                              | 1.7  | 7                         | 0.6                      | 1.3       | 1.1      |
| 3700-4800         | 22             | 14   | 1.2                              | 1.7  | 8                         | 0.6                      | 1.3       | 1.1      |

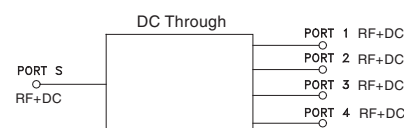
## Typical Performance Data

| Freq. (MHz) | Total Loss <sup>1</sup> (dB) |      |      |      | Amp. Unbal. (dB) | Isolation (dB) |       |       | Phase Unbal. (deg.) | VSWR S | VSWR 1 | VSWR 2 | VSWR 3 | VSWR 4 |
|-------------|------------------------------|------|------|------|------------------|----------------|-------|-------|---------------------|--------|--------|--------|--------|--------|
|             | S-1                          | S-2  | S-3  | S-4  |                  | 1-2            | 2-3   | 3-4   |                     |        |        |        |        |        |
| 500.00      | 6.31                         | 6.31 | 6.28 | 6.34 | 0.06             | 20.69          | 24.63 | 21.07 | 0.34                | 1.20   | 1.08   | 1.09   | 1.09   | 1.10   |
| 800.00      | 6.70                         | 6.68 | 6.68 | 6.74 | 0.06             | 21.74          | 30.62 | 22.16 | 0.40                | 1.42   | 1.16   | 1.15   | 1.15   | 1.16   |
| 1100.00     | 6.67                         | 6.66 | 6.63 | 6.69 | 0.06             | 20.47          | 26.59 | 20.84 | 0.40                | 1.15   | 1.08   | 1.06   | 1.07   | 1.08   |
| 1400.00     | 6.77                         | 6.75 | 6.73 | 6.80 | 0.06             | 29.86          | 35.63 | 29.99 | 0.28                | 1.27   | 1.10   | 1.09   | 1.08   | 1.08   |
| 2000.00     | 6.79                         | 6.79 | 6.76 | 6.80 | 0.04             | 26.48          | 29.42 | 27.14 | 0.65                | 1.13   | 1.04   | 1.07   | 1.07   | 1.05   |
| 2300.00     | 6.86                         | 6.85 | 6.82 | 6.88 | 0.06             | 31.80          | 44.04 | 32.61 | 0.53                | 1.20   | 1.10   | 1.07   | 1.07   | 1.11   |
| 2600.00     | 6.93                         | 6.94 | 6.89 | 6.93 | 0.06             | 22.10          | 29.18 | 22.57 | 0.54                | 1.12   | 1.11   | 1.13   | 1.12   | 1.09   |
| 2900.00     | 7.16                         | 7.15 | 7.13 | 7.19 | 0.05             | 20.91          | 33.21 | 20.86 | 0.81                | 1.44   | 1.14   | 1.14   | 1.13   | 1.15   |
| 3200.00     | 7.08                         | 7.06 | 7.05 | 7.12 | 0.07             | 23.57          | 41.88 | 24.26 | 0.73                | 1.37   | 1.21   | 1.16   | 1.20   | 1.24   |
| 3500.00     | 7.11                         | 7.12 | 7.05 | 7.07 | 0.07             | 20.33          | 34.26 | 20.54 | 1.16                | 1.20   | 1.16   | 1.15   | 1.09   | 1.08   |
| 3800.00     | 7.26                         | 7.29 | 7.24 | 7.26 | 0.05             | 21.55          | 32.88 | 21.45 | 1.23                | 1.45   | 1.21   | 1.21   | 1.15   | 1.17   |
| 4100.00     | 7.15                         | 7.18 | 7.15 | 7.17 | 0.03             | 32.40          | 31.46 | 30.72 | 1.40                | 1.25   | 1.10   | 1.10   | 1.15   | 1.16   |
| 4400.00     | 7.31                         | 7.38 | 7.38 | 7.36 | 0.08             | 20.40          | 32.16 | 19.95 | 1.20                | 1.39   | 1.14   | 1.16   | 1.07   | 1.09   |
| 4700.00     | 7.30                         | 7.37 | 7.42 | 7.40 | 0.12             | 22.06          | 30.51 | 22.00 | 1.08                | 1.24   | 1.13   | 1.19   | 1.14   | 1.16   |
| 5000.00     | 7.13                         | 7.26 | 7.21 | 7.09 | 0.17             | 16.83          | 28.25 | 17.40 | 1.41                | 1.16   | 1.24   | 1.36   | 1.28   | 1.24   |

1. Total Loss = Insertion Loss + 6dB splitter loss.



## electrical schematic



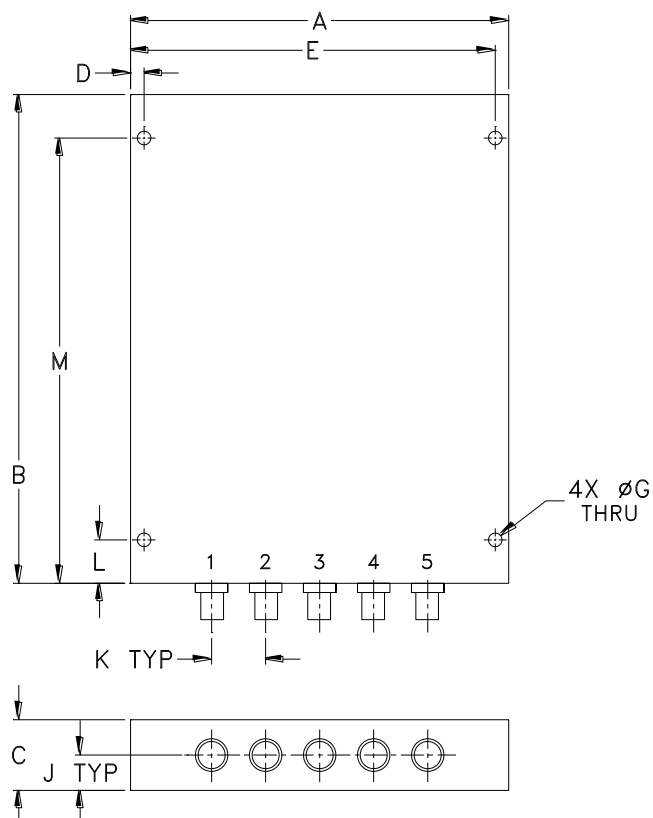
## Notes

- 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-Circuit's applicable established test performance criteria and measurement instructions.  
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## Outline Dimensions

UU846



| CASE# | A               | B                | C              | D              | E                | F        | G              | H        | J             | K              | L               | M                 | WT. GRAMS |
|-------|-----------------|------------------|----------------|----------------|------------------|----------|----------------|----------|---------------|----------------|-----------------|-------------------|-----------|
| UU846 | 3.50<br>(88.90) | 4.50<br>(114.30) | .65<br>(16.51) | .125<br>(3.18) | 3.375<br>(85.73) | --<br>-- | .125<br>(3.18) | --<br>-- | .33<br>(8.38) | .50<br>(12.70) | .400<br>(10.16) | 4.100<br>(104.14) | 288       |

Dimensions are in inches (mm). Tolerances: 2 Pl.  $\pm .03$ ; 3 Pl.  $\pm .015$

### Notes:

- Case material: Aluminum alloy.
- Case finish:  
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
- Refer to the individual model data sheet for the type of connectors available.



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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      | -55° 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 |