

High Power, DC Pass

# Power Splitter/Combiner

## ZN2PD2-63A+

2 Way-0° 50Ω 25W 350 to 6000 MHz

### The Big Deal

- Wideband, 350 to 6000 MHz
- High power, up to 25W as a splitter
- Low insertion loss, 0.9 dB
- Low unbalance, 0.1 dB, 2°
- High isolation, 20 dB



CASE STYLE: F1908-3

### Product Overview

Mini-Circuits' ZN2PD2-63A-S+ is a 2-way 0° high-power splitter/combiner providing up to 25W power handling as a splitter (1.0W as a combiner) and low insertion loss across the entire 350 to 6000 MHz frequency range. Its outstanding combination of high power handling and low loss minimize power dissipation and provide excellent signal power transmission from input to output. The ZN2PD2-63A-S+ comes with N-Type and SMA version in a rugged aluminum alloy case measuring 4.0 x 3.25 x 0.875" with N-type or SMA connectors.

### Key Features

| Feature  | Advantages  |
|--|---|
| Wideband, 350 to 6000 MHz  | This model supports bandwidth requirements for a wide variety of applications.  |
| High power handling: <ul style="list-style-type: none"><li>• 25W to 3600 MHz</li><li>• 15W to 6000 MHz</li></ul>         | The ZN2PD2-63A-S+ is suitable for systems with a wide range of power requirements.  |
| Low insertion loss, 0.9 dB   | The combination of 25W power handling and low insertion loss makes this model a suitable candidate for distributing signals while maintaining excellent transmission of signal power. |
| Low unbalance: <ul style="list-style-type: none"><li>• 0.1 dB amplitude unbalance</li><li>• 2° phase unbalance</li></ul> | Produces nearly equal output signals, ideal for parallel path and multichannel systems.   |
| High isolation, 20 dB  | Minimizes interference between ports.   |
| DC Passing, 600mA (300mA each port)  | Supports applications where DC power is needed through the RF line.   |

#### Notes

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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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## ZN2PD2-63A+

2 Way-0° 50Ω 25W 350 to 6000 MHz

### Maximum Ratings

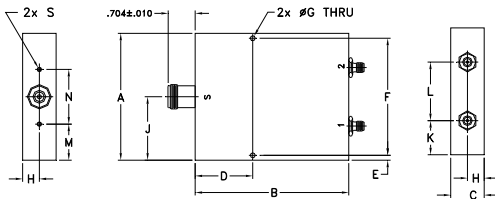
|  |                              |
|--|------------------------------|
| Operating Temperature(@ <math>\sim 25W</math>) | -55°C to 60°C                |
| Operating Temperature(@ <math>< 10W</math>)    | -55°C to 100°C               |
| Storage Temperature                            | -55°C to 100°C               |
| DC Current                                     | 600 mA (300mA for each port) |

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

### Coaxial Connections

|         |   |
|---------|---|
| SUMPORT | S |
| PORT 1  | 1 |
| PORT 2  | 2 |

### Outline Drawing



### Outline Dimensions (inch/mm)

|       |        |       |       |       |        |      |       |
|-------|--------|-------|-------|-------|--------|------|-------|
| A     | B      | C     | D     | E     | F      | G    | H     |
| 3.25  | 4.00   | .88   | 1.50  | .13   | 3.00   | .125 | .44   |
| 82.55 | 101.60 | 22.35 | 38.10 | 3.30  | 76.20  | 3.18 | 11.18 |
| J     | K      | L     | M     | N     | S      |      | wt    |
| 1.63  | .88    | 1.500 | .93   | 1.400 | #4-40  |      | grams |
| 41.40 | 22.35  | 38.10 | 23.62 | 35.56 | 156 DP |      | 300.0 |

### Features

- wideband, 350-6000 MHz
- excellent amplitude unbalance, 0.1 dB typ.
- good isolation, 20 dB typ.
- excellent phase unbalance, 2 deg. typ.
- up to 25W power input as splitter

### Applications

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



Generic photo used for illustration purposes only

CASE STYLE: F1908-3

| Connectors | Model         |
|------------|---------------|
| SMA        | ZN2PD2-63A-S+ |
| N-Type     | ZN2PD2-63A-N+ |

### +RoHS Compliant

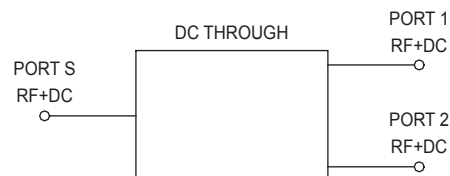
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### Electrical Specifications at 25°C

| Parameter  | Frequency (MHz)                | Min.      | Typ. | Max. | Unit   |   |
|--|--------------------------------|-----------|------|------|--------|---|
| <b>Frequency</b>                                 |                                | 350       |      | 6000 | MHz    |   |
| <b>Insertion Loss (above theoretical 3.0 dB)</b> | 350-500                        | —         | 0.3  | 0.6  | dB     |   |
|  | 500-2700                       | —         | 0.5  | 0.9  |        |   |
|  | 2700-5200                      | —         | 0.8  | 1.1  |        |   |
|  | 5200-6000                      | —         | 0.9  | 1.4  |        |   |
| <b>Isolation</b>                                 | 350-500                        | 16        | 20   | —    | dB     |   |
|  | 500-2700                       | 18        | 22   | —    |        |   |
|  | 2700-5200                      | 17        | 20   | —    |        |   |
|  | 5200-6000                      | 15        | 18   | —    |        |   |
| <b>Phase Unbalance</b>                           | 350-2700                       | —         | 0.5  | 2    | Degree |   |
|  | 2700-3600                      | —         | 1.0  | 3    |        |   |
|  | 3600-6000                      | —         | 1.0  | 4    |        |   |
| <b>Amplitude Unbalance</b>                       | 350-2700                       | —         | 0.15 | 0.3  | dB     |   |
|  | 2700-6000                      | —         | 0.2  | 0.5  |        |   |
| <b>VSWR (Port S)</b>                             | 350-6000                       | —         | 1.4  | —    | :1     |   |
| <b>VSWR (Port 1-2)</b>                           | 350-6000                       | —         | 1.3  | —    |        |   |
| <b>Power Handling<sup>3</sup></b>                | <b>As Splitter<sup>1</sup></b> | 350-3600  | —    | —    | 25     | W |
|  | <b>As Combiner<sup>2</sup></b> | 3600-6000 | —    | —    | 15     |   |
|  |                                | 350-6000  | —    | —    | 1.0    |   |

1. All outputs must terminate 50 ohm (VSWR 1.5:1 or better)
2. As a combiner of non-coherent signals, max. power per port is 1.0 watt power rating divided by number of ports.
3. Alternative heat sinking and heat removal must be provided by the user to limit maximum base-plate temperature to 60°C, in order to ensure proper performance. For reference, this requires thermal resistance of user's external heat sink to be 10°C/W.

### Electrical Schematic



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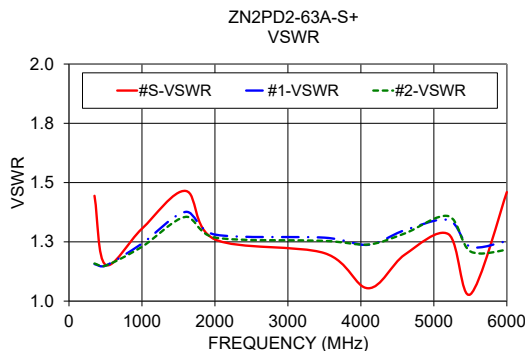
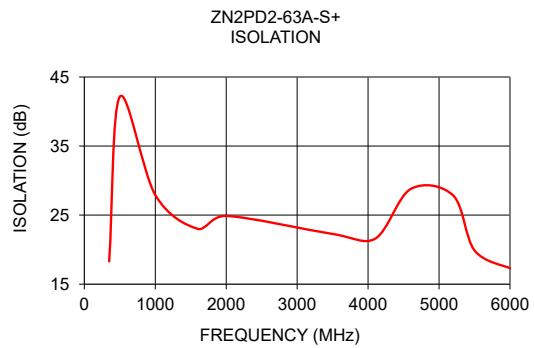
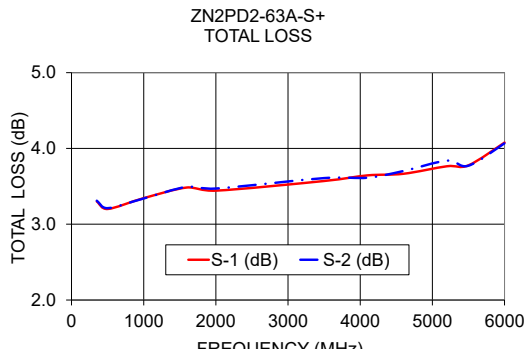
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ZN2PD2-63A-S+  
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201201  
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### Typical Performance Data

| Frequency<br>(MHz) | Total Loss <sup>1</sup><br>(dB) |      | Amplitude<br>Unbalance<br>(dB) | Isolation<br>(dB) | Phase<br>Unbalance<br>(deg.) | VSWR<br>S | VSWR<br>1 | VSWR<br>2 |
|--------------------|---------------------------------|------|--------------------------------|-------------------|------------------------------|-----------|-----------|-----------|
|                    | S-1                             | S-2  |                                |                   |                              |           |           |           |
| 350                | 3.30                            | 3.31 | 0.01                           | 18.30             | 0.01                         | 1.44      | 1.16      | 1.16      |
| 500                | 3.20                            | 3.21 | 0.01                           | 42.15             | 0.04                         | 1.15      | 1.15      | 1.15      |
| 1000               | 3.34                            | 3.34 | 0.00                           | 27.92             | 0.08                         | 1.31      | 1.24      | 1.23      |
| 1600               | 3.48                            | 3.49 | 0.01                           | 23.01             | 0.09                         | 1.46      | 1.38      | 1.36      |
| 2000               | 3.44                            | 3.47 | 0.03                           | 24.88             | 0.20                         | 1.26      | 1.28      | 1.27      |
| 3500               | 3.57                            | 3.61 | 0.04                           | 22.27             | 0.10                         | 1.20      | 1.27      | 1.25      |
| 4100               | 3.64                            | 3.61 | 0.03                           | 21.58             | 0.20                         | 1.05      | 1.24      | 1.24      |
| 4600               | 3.67                            | 3.70 | 0.04                           | 28.78             | 0.27                         | 1.20      | 1.30      | 1.29      |
| 5200               | 3.76                            | 3.84 | 0.07                           | 27.84             | 0.10                         | 1.28      | 1.34      | 1.36      |
| 5500               | 3.78                            | 3.77 | 0.01                           | 19.88             | 0.04                         | 1.03      | 1.23      | 1.21      |
| 6000               | 4.08                            | 4.07 | 0.01                           | 17.31             | 0.49                         | 1.46      | 1.25      | 1.22      |

1. Total Loss = Insertion Loss + 3dB splitter loss.



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