

DC Pass, High Power

Power Splitter/Combiner

ZC2PD-V254+

2 Way-0° 50Ω 2000 to 50000 MHz

The Big Deal

- Super wideband, 2 to 50 GHz
- Low insertion loss, 1.0 dB typ.
- High Isolation, 25 dB typ.
- 16W power handling
- Low amplitude unbalance, 0.1 dB typ.



CASE STYLE: UU2623

Product Overview

Mini-Circuits' ZC2PD-V254+ is a super wideband 2-way 0° splitter/combiner providing coverage from 2 to 50 GHz, supporting a wide range of applications including 5G, Ku, Ka, V and K-Band, instrumentation and many more. This model provides 16W power handling as a splitter and very low insertion loss across the entire operating frequency range, minimizing power dissipation and delivering excellent signal power transmission from input to output. The ZC2PD-V254+ comes housed in a case measuring 1.79 x 1.04 x 0.5".

Key Features

| Feature | Advantages |
|---|---|
| Ultra-wideband, 2 to 50 GHz | Extremely wide frequency range supports many broadband applications in a single model. Ideal for use in wideband instrumentation |
| Low insertion loss, 1.0 dB typ. at 28 GHz | The combination of 16W power handling and low insertion loss makes this model a suitable candidate for distributing signals while maintaining excellent transmission of signal power. |
| High isolation, 28 dB typ. at 25 GHz | Minimizes interference between ports. |
| High power handling: <ul style="list-style-type: none">• 16W as a splitter at 25°C• 0.5W as a combiner | The ZC2PD-V254+ is suitable for systems with a wide range of power requirements. |
| Low amplitude unbalance, 0.09 dB at 29 GHz | Produces nearly equal output signals, ideal for parallel path and multichannel systems. |
| DC Passing, 368mA | Supports applications where DC power is needed to pass through the RF line. |

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



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ZC2PD-V254+

2 Way-0° 50Ω 2000 to 50000 MHz

Maximum Ratings

| | |
|-----------------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature | -55°C to 100°C |
| Power Input (as a splitter) | 16W* max. |
| Internal Dissipation | 0.5W max. |
| DC Current | 368mA |

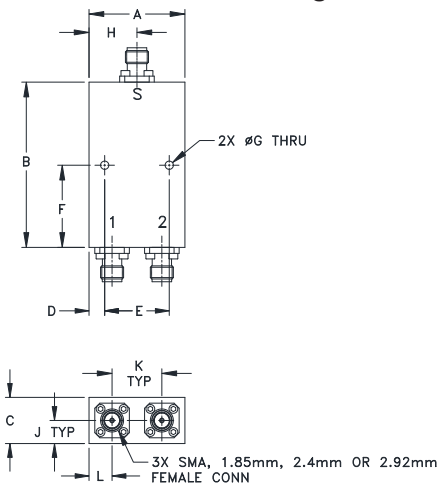
Permanent damage may occur if any of these limits are exceeded.

* Derate linearly to 6.8W at 100°C

Coaxial Connections

| | |
|----------|---|
| Sum Port | S |
| Port 1 | 1 |
| Port 2 | 2 |

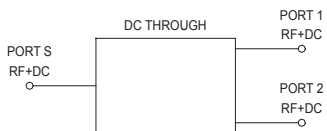
Outline Drawing



Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G |
|-------|-------|-------|------|-------|-------|------|
| 1.04 | 1.79 | .50 | .17 | .700 | .89 | .090 |
| 26.42 | 45.47 | 12.70 | 4.32 | 17.78 | 22.61 | 2.29 |
| H | J | K | L | wt | | |
| .52 | .25 | .540 | .25 | grams | | |
| 13.21 | 6.4 | 13.72 | 6.4 | 55 | | |

Electrical Schematic



Features

- Super wideband, 2000 - 50000 MHz
- Low insertion loss, 1.0 dB typ.
- Low amplitude unbalance, 0.1 dB typ.
- Excellent VSWR, 1.1:1 typ.
- High isolation, 25 dB typ.

Applications

- 5G
- Fixed satellite
- Space research
- Mobile



Generic photo used for illustration purposes only

CASE STYLE: UU2623

| Connectors | Model |
|------------|-------------|
| 2.4mm-Fem | ZC2PD-V254+ |

+RoHS Compliant

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

Electrical Specifications at 25°C

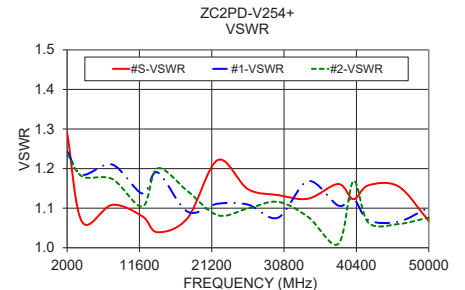
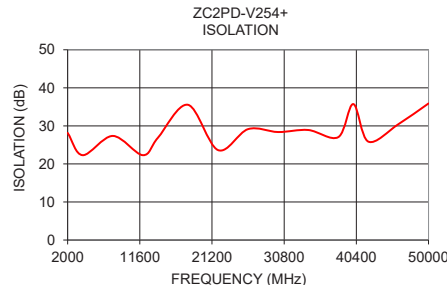
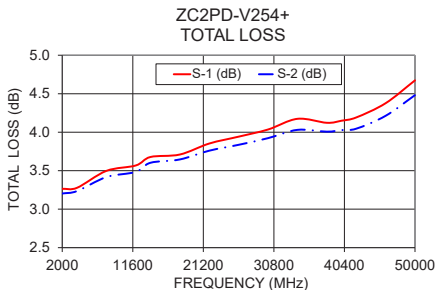
| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|--|-----------------|------|------|-------|--------|
| Frequency Range | | 2000 | | 50000 | MHz |
| Insertion Loss Above 3.0 dB | 2000-18000 | | 0.5 | 1.2 | dB |
| | 18000-40000 | | 1.0 | 1.9 | |
| | 40000-50000 | | 1.4 | 2.4 | |
| Isolation | 2000-18000 | 16 | 28 | | dB |
| | 18000-40000 | 16 | 28 | | |
| | 40000-50000 | 16 | 28 | | |
| Phase Unbalance (±)¹ | 2000-18000 | | 0.5 | 3 | Degree |
| | 18000-40000 | | 1.3 | 5 | |
| | 40000-50000 | | 2 | 6 | |
| Amplitude Unbalance (±)¹ | 2000-18000 | | 0.04 | 0.3 | dB |
| | 18000-40000 | | 0.09 | 0.4 | |
| | 40000-50000 | | 0.15 | 0.5 | |
| VSWR (Port S) | 2000-18000 | | 1.16 | 1.5 | :1 |
| | 18000-40000 | | 1.1 | 1.6 | |
| | 40000-50000 | | 1.11 | 1.7 | |
| VSWR (Port 1-2) | 2000-18000 | | 1.16 | 1.5 | :1 |
| | 18000-40000 | | 1.1 | 1.6 | |
| | 40000-50000 | | 1.11 | 1.7 | |

1. With reference to average.

Typical Performance Data

| Frequency (MHz) | Total Loss ¹ (dB) | | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR S | VSWR 1 | VSWR 2 |
|-----------------|------------------------------|------|--------------------------|----------------|------------------------|--------|--------|--------|
| | S-1 | S-2 | | | | | | |
| 2000 | 3.26 | 3.20 | 0.06 | 28.15 | 0.14 | 1.29 | 1.24 | 1.24 |
| 4000 | 3.28 | 3.23 | 0.04 | 22.30 | 0.03 | 1.07 | 1.18 | 1.18 |
| 8000 | 3.50 | 3.42 | 0.08 | 27.36 | 0.06 | 1.11 | 1.21 | 1.17 |
| 12000 | 3.57 | 3.48 | 0.08 | 22.30 | 0.02 | 1.08 | 1.14 | 1.10 |
| 14000 | 3.68 | 3.60 | 0.08 | 26.87 | 0.13 | 1.04 | 1.19 | 1.20 |
| 18000 | 3.71 | 3.65 | 0.06 | 35.55 | 0.14 | 1.08 | 1.09 | 1.14 |
| 22000 | 3.85 | 3.76 | 0.09 | 23.64 | 0.01 | 1.22 | 1.11 | 1.08 |
| 26000 | 3.94 | 3.84 | 0.11 | 29.15 | 0.15 | 1.15 | 1.11 | 1.10 |
| 30000 | 4.04 | 3.92 | 0.11 | 28.38 | 0.14 | 1.13 | 1.08 | 1.12 |
| 34000 | 4.17 | 4.03 | 0.14 | 28.92 | 0.28 | 1.12 | 1.17 | 1.08 |
| 38000 | 4.12 | 4.01 | 0.12 | 27.05 | 0.18 | 1.16 | 1.11 | 1.01 |
| 40000 | 4.15 | 4.03 | 0.12 | 35.73 | 0.06 | 1.12 | 1.12 | 1.17 |
| 42000 | 4.19 | 4.05 | 0.15 | 25.86 | 0.21 | 1.16 | 1.07 | 1.06 |
| 46000 | 4.38 | 4.21 | 0.16 | 30.45 | 0.19 | 1.15 | 1.07 | 1.06 |
| 50000 | 4.67 | 4.48 | 0.19 | 35.89 | 0.19 | 1.07 | 1.10 | 1.08 |

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



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Page 2 of 2