

Coaxial

Adapter SMA-MRP to SMA-M

SMRP-SM50+

50Ω

DC to 12 GHz

The Big Deal

- Wideband, DC-12 GHz
- Flat response
- Low insertion loss, 0.3 dB typ.
- Excellent VSWR, 1.2:1 typ.



CASE STYLE: DJ951

Product Overview

Mini-Circuits' SMRP-SM50+ is a 50Ω coaxial SMA-Male Reverse Polarity to SMA-Male adapter supporting a wide range of applications from DC to 12 GHz. This model provides excellent VSWR, low insertion loss, and flat response versus frequency. The SMRP-SM50+ features rugged, passivated stainless steel construction and measures only 0.87" (l) x 0.36" (dia.).

Key Features

| Feature | Advantages |
|--|--|
| Wideband, DC to 12 GHz | Wide frequency range provides application flexibility and makes this model ideal for broadband and multi-band use |
| Excellent VSWR, 1.2:1 typ. | Provides good matching for 50Ω systems and minimizes signal reflections across wide frequency range. |
| Low insertion loss, 0.3 dB typ. | Provides excellent signal power transmission from input to output. |
| Rugged, passivated stainless steel construction. | Stands up to wear and tear in demanding environments and provides excellent reliability. |
| Very wide operating temperature range, -55 to +100°C | Withstands extreme operating conditions and is suitable for use near high power componentry where heat rise is common. |

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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SMRP-SM50+

50Ω DC to 12 GHz

Maximum Ratings

Operating Temperature -55°C to 100°C

Storage Temperature -55°C to 100°C

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

Features

- Flat response
- Excellent VSWR, 1.2:1 typ. up to 12 GHz
- Rugged stainless steel body

Applications

- Connector saver
- Cable extender



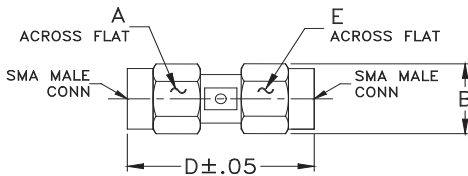
CASE STYLE: DJ951

| Connectors | Model |
|---------------|------------|
| Conn1 Conn2 | |
| SMA-MRP SMA-M | SMRP-SM50+ |

+RoHS Compliant

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

Outline Drawing



Outline Dimensions (inch/mm)

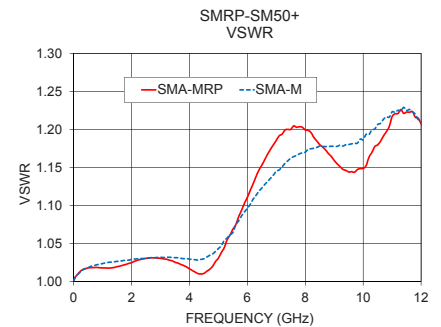
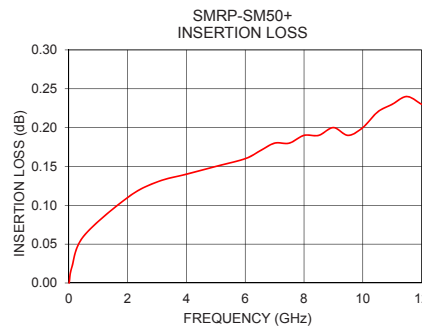
| A | B | C | D | E | Wt. |
|------|------|----|-------|------|-------|
| .312 | .36 | -- | .87 | .312 | grams |
| 7.92 | 9.14 | -- | 22.10 | 7.92 | 4.8 |

Electrical Specifications at 25°C

| Parameter | Condition (GHz) | Min. | Typ. | Max. | Units |
|-----------------|-----------------|------|------|------|-------|
| Frequency Range | DC-12 | - | - | - | GHz |
| Insertion Loss | DC-12 | - | 0.3 | 0.6 | dB |
| VSWR | DC-5 | - | 1.05 | 1.15 | :1 |
| | 5-12 | - | 1.22 | 1.40 | |

Typical Performance Data

| Frequency (GHz) | Insertion Loss (dB) | VSWR (:1) | |
|-----------------|---------------------|-----------|-------|
| | | SMA-MRP | SMA-M |
| 0.01 | 0.00 | 1.00 | 1.00 |
| 0.10 | 0.02 | 1.01 | 1.01 |
| 0.50 | 0.06 | 1.02 | 1.02 |
| 2.00 | 0.11 | 1.02 | 1.03 |
| 3.00 | 0.13 | 1.03 | 1.03 |
| 4.00 | 0.14 | 1.02 | 1.03 |
| 5.00 | 0.15 | 1.03 | 1.04 |
| 6.00 | 0.16 | 1.11 | 1.10 |
| 6.50 | 0.17 | 1.15 | 1.12 |
| 7.00 | 0.18 | 1.19 | 1.15 |
| 7.50 | 0.18 | 1.20 | 1.16 |
| 8.00 | 0.19 | 1.20 | 1.17 |
| 8.50 | 0.19 | 1.18 | 1.18 |
| 9.00 | 0.20 | 1.16 | 1.18 |
| 9.50 | 0.19 | 1.14 | 1.18 |
| 10.00 | 0.20 | 1.15 | 1.19 |
| 10.50 | 0.22 | 1.18 | 1.21 |
| 11.00 | 0.23 | 1.22 | 1.22 |
| 11.50 | 0.24 | 1.22 | 1.22 |
| 12.00 | 0.23 | 1.21 | 1.21 |



Notes

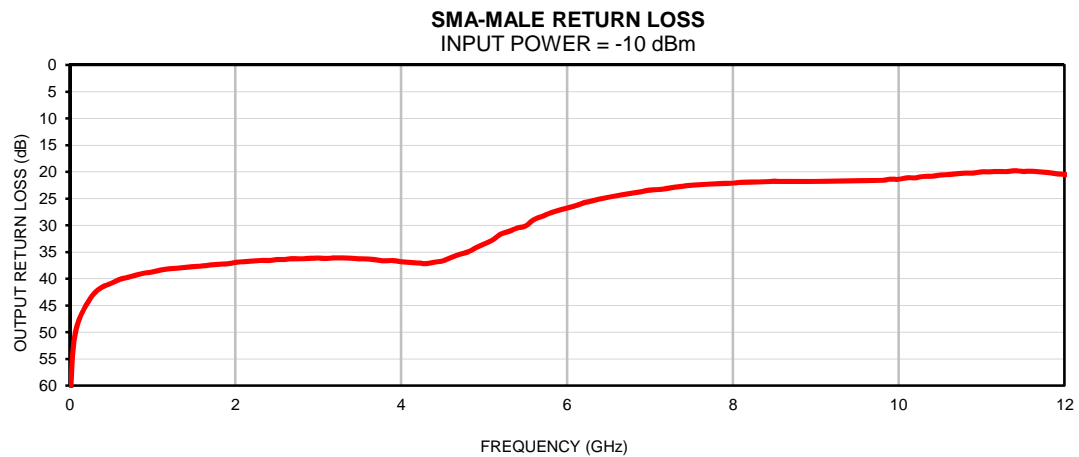
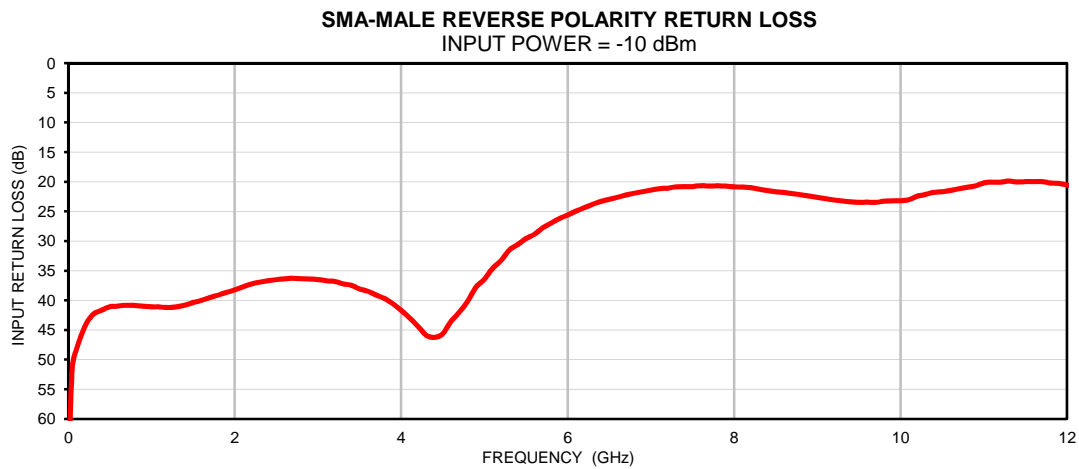
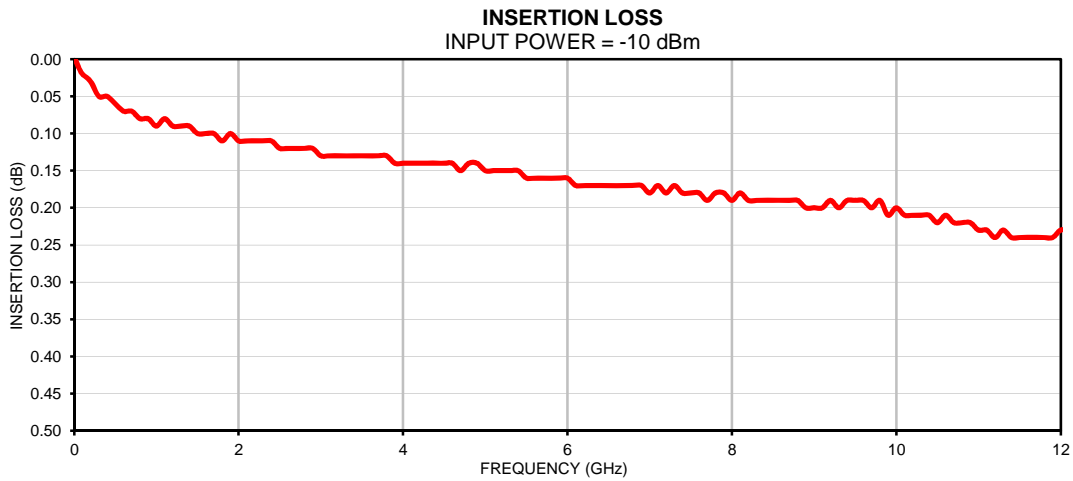
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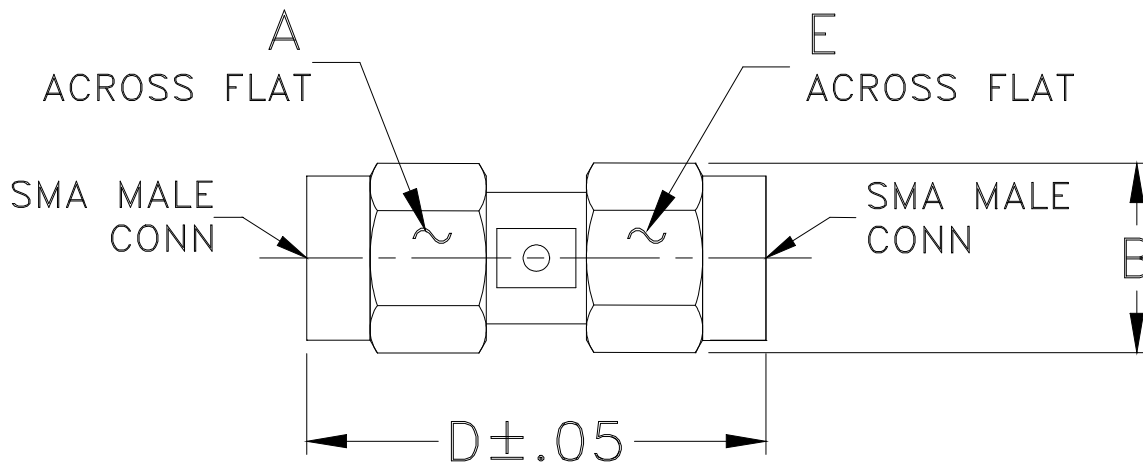
Typical Performance Data

| FREQ. | INSERTION LOSS | SMA-MALE REVERSE POLARITY RETURN LOSS | SMA-MALE RETURN LOSS |
|-------|----------------|---|-------------------------|
| (GHz) | (dB) | (dB) | (dB) |
| 0.01 | 0.00 | 65.54 | 61.99 |
| 0.05 | 0.01 | 51.22 | 52.38 |
| 0.10 | 0.02 | 48.26 | 48.37 |
| 0.20 | 0.03 | 44.44 | 45.03 |
| 0.30 | 0.05 | 42.37 | 42.73 |
| 0.40 | 0.05 | 41.69 | 41.54 |
| 0.50 | 0.06 | 41.09 | 40.89 |
| 0.60 | 0.07 | 40.98 | 40.16 |
| 0.70 | 0.07 | 40.87 | 39.76 |
| 0.80 | 0.08 | 40.83 | 39.33 |
| 0.90 | 0.08 | 40.98 | 38.94 |
| 1.00 | 0.09 | 41.11 | 38.72 |
| 1.10 | 0.08 | 41.10 | 38.36 |
| 1.20 | 0.09 | 41.25 | 38.15 |
| 1.30 | 0.09 | 41.06 | 38.02 |
| 1.40 | 0.09 | 40.86 | 37.89 |
| 1.50 | 0.10 | 40.37 | 37.70 |
| 1.60 | 0.10 | 40.03 | 37.62 |
| 1.70 | 0.10 | 39.52 | 37.40 |
| 1.80 | 0.11 | 39.14 | 37.28 |
| 1.90 | 0.10 | 38.65 | 37.21 |
| 2.00 | 0.11 | 38.28 | 36.93 |
| 2.20 | 0.11 | 37.27 | 36.68 |
| 2.40 | 0.11 | 36.70 | 36.59 |
| 2.60 | 0.12 | 36.39 | 36.37 |
| 2.80 | 0.12 | 36.37 | 36.27 |
| 3.00 | 0.13 | 36.50 | 36.11 |
| 3.20 | 0.13 | 36.81 | 36.10 |
| 3.40 | 0.13 | 37.46 | 36.18 |
| 3.60 | 0.13 | 38.47 | 36.29 |
| 3.80 | 0.13 | 39.68 | 36.64 |
| 4.00 | 0.14 | 41.67 | 36.81 |
| 4.20 | 0.14 | 44.35 | 37.03 |
| 4.40 | 0.14 | 46.25 | 36.90 |
| 4.60 | 0.14 | 43.54 | 36.03 |
| 4.80 | 0.14 | 40.14 | 35.02 |
| 5.00 | 0.15 | 36.44 | 33.49 |
| 5.20 | 0.15 | 33.29 | 31.65 |
| 5.40 | 0.15 | 30.59 | 30.50 |
| 5.60 | 0.16 | 28.88 | 28.92 |
| 5.80 | 0.16 | 26.99 | 27.67 |
| 6.00 | 0.16 | 25.61 | 26.77 |
| 6.20 | 0.17 | 24.38 | 25.79 |
| 6.40 | 0.17 | 23.31 | 25.03 |
| 6.60 | 0.17 | 22.60 | 24.45 |
| 6.80 | 0.17 | 21.94 | 23.94 |
| 7.00 | 0.18 | 21.42 | 23.40 |
| 7.20 | 0.18 | 21.08 | 23.09 |
| 7.40 | 0.18 | 20.83 | 22.67 |
| 7.60 | 0.18 | 20.65 | 22.40 |
| 7.80 | 0.18 | 20.69 | 22.22 |
| 8.00 | 0.19 | 20.86 | 22.12 |
| 8.50 | 0.19 | 21.67 | 21.75 |
| 9.00 | 0.20 | 22.65 | 21.77 |
| 9.50 | 0.19 | 23.46 | 21.66 |
| 10.00 | 0.20 | 23.20 | 21.39 |
| 10.50 | 0.22 | 21.68 | 20.58 |
| 11.00 | 0.23 | 20.19 | 19.97 |
| 11.50 | 0.24 | 19.98 | 19.91 |
| 12.00 | 0.23 | 20.54 | 20.44 |

Typical Performance Curves



Outline Dimensions



| CASE# | A | B | C | D | E | WT. GRAM |
|-------|----------------|---------------|----------|----------------|----------------|----------|
| DJ951 | .312 (7.92) | .36 (9.14) | -- -- | .87 (22.10) | .312 (7.92) | 4.8 |

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

Notes:

1. Case material: Stainless steel.
2. Finish: Passivation.
3. For polarity of connector refer individual model data sheet.



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The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

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 Ambient Environment | Individual Model Data Sheet |
| Storage Temperature | -55° to 100° C Ambient Environment | Individual Model Data Sheet |
| Barometric Pressure | 100,000 Feet | MIL-STD-202, Method 105, Condition D |
| Humidity | 90% RH, 65°C 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 |