



COAXIAL

# Adapter

## SFR-SM50+

50Ω DC to 18 GHz SMA-Female to SMA-Male

### THE BIG DEAL

- Low Insertion Loss, 0.14 dB typ. up to 18 GHz
- Excellent VSWR, 1.12:1 typ. up to 18 GHz
- Low cost adapters, available from stock
- Tri-metal alloy and gold-plated beryllium copper center connector



Generic photo used for illustration purposes only

<b>Model No.</b>	SFR-SM50+
<b>Case Style</b>	DJ2442-7
<b>Connectors</b>	SMA-Female to SMA-Male

### +RoHS Compliant

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

### APPLICATIONS

- Interconnection of RF cable and equipment

### PRODUCT OVERVIEW

Mini-Circuits' SFR-SM50+ is a right-angle SMA-Female to SMA-Male adapter supporting a wide range of applications from DC to 18 GHz. This model provides excellent VSWR, low insertion loss, and flat response versus frequency. The SFR-SM50+ features Tri-metal alloy body and Gold-plated beryllium copper construction center contact.

### KEY FEATURES

Feature	Advantages
Wideband, DC to 18 GHz	Wide frequency range provides application flexibility and makes this model ideal for broadband and multi-band use.
Excellent VSWR <ul style="list-style-type: none"> <li>• 1.12:1 typ. up to 18 GHz</li> </ul>	Provides good matching for 50Ω systems and minimizes signal reflections across wide frequency range.
Low insertion loss <ul style="list-style-type: none"> <li>• 0.14 dB typ. up to 18 GHz</li> </ul>	Provides excellent signal power transmission from input to output.
Tri-metal alloy and Gold-plated beryllium copper construction center contact	Stands up to wear and tear in demanding environments and provides excellent reliability.
Very wide operating temperature range, <ul style="list-style-type: none"> <li>• -55 to +100 °C</li> </ul>	Withstands extreme operating conditions and is suitable for use near high power componentry where heat rise is common.

REV. B  
ECO-016626  
SFR-SM50+  
MCL NY  
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50Ω DC to 18 GHz SMA-Female to SMA-Male

### ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Condition (GHz)	Min.	Typ.	Max.	Units
Frequency Range		DC		18	GHz
Insertion Loss	DC - 18	–	0.14	–	dB
VSWR	DC - 8	–	1.01	1.25	:1
	8 - 12	–	1.07	1.25	
	12 - 18	–	1.09	1.25	

### ABSOLUTE MAXIMUM RATINGS

Parameter	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.



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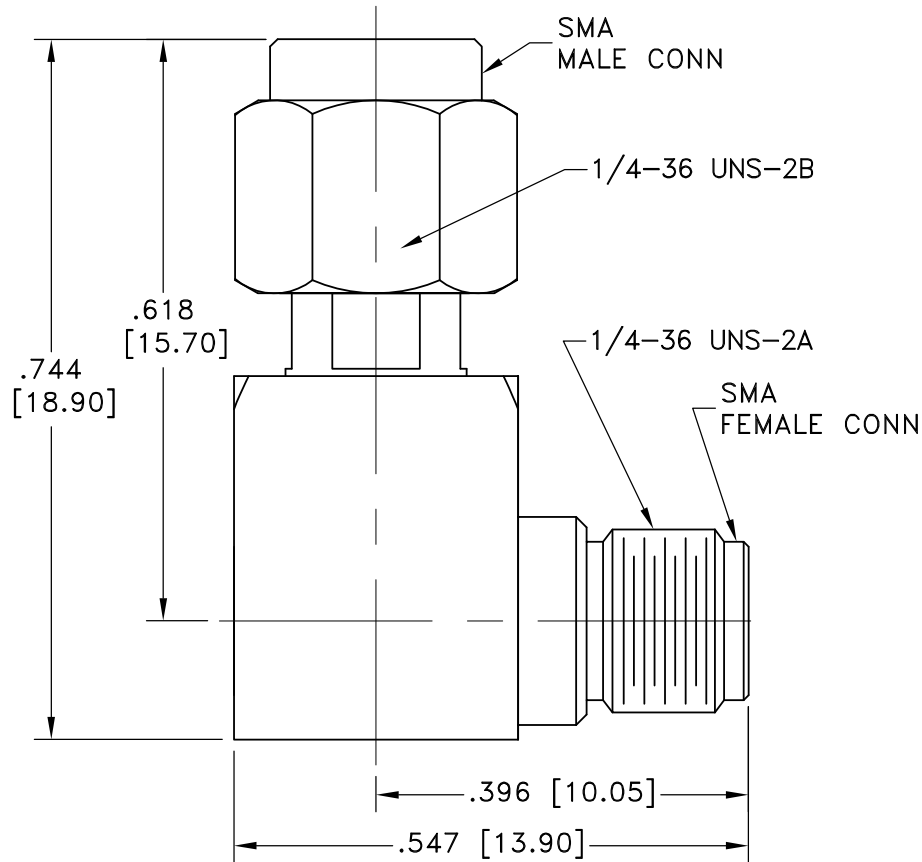
# Adapter

**SFR-SM50+**

Mini-Circuits

50Ω DC to 18 GHz SMA-Female to SMA-Male

## OUTLINE DRAWING



Weight: 6.5 grams

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



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# Adapter

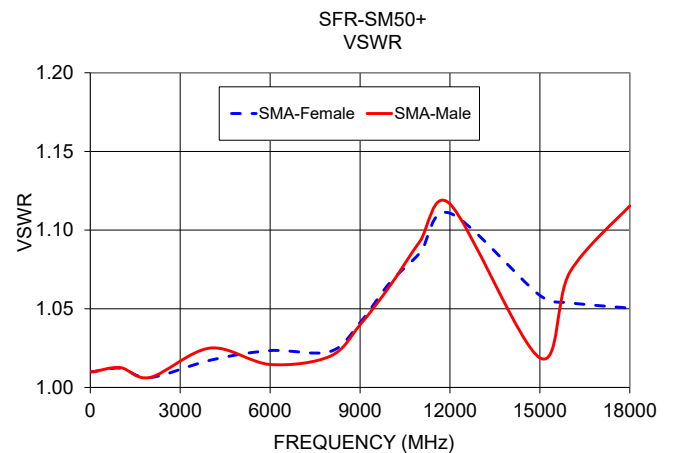
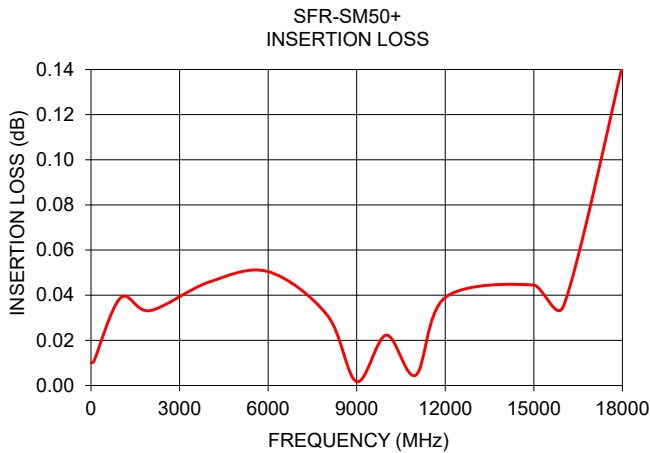
## SFR-SM50+

Mini-Circuits

50Ω DC to 18 GHz SMA-Female to SMA-Male

### TYPICAL PERFORMANCE DATA

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	
		SMA-Female	SMA-Male
10	0.01	1.01	1.01
100	0.01	1.01	1.01
1000	0.04	1.01	1.01
2000	0.03	1.01	1.01
4000	0.05	1.02	1.03
6000	0.05	1.02	1.01
8000	0.03	1.02	1.02
9000	0.00	1.04	1.04
10000	0.02	1.07	1.06
11000	0.00	1.09	1.09
12000	0.04	1.11	1.12
15000	0.04	1.06	1.02
16000	0.04	1.05	1.07
18000	0.14	1.05	1.12



#### NOTES

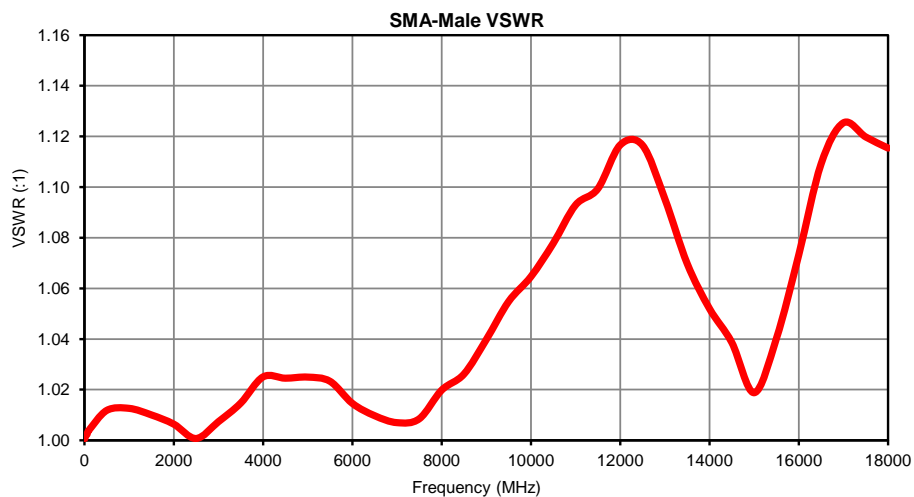
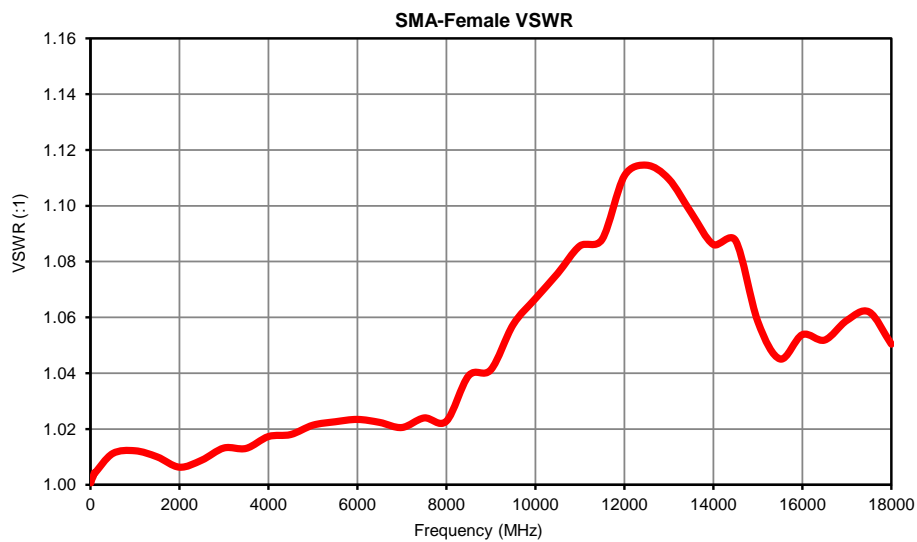
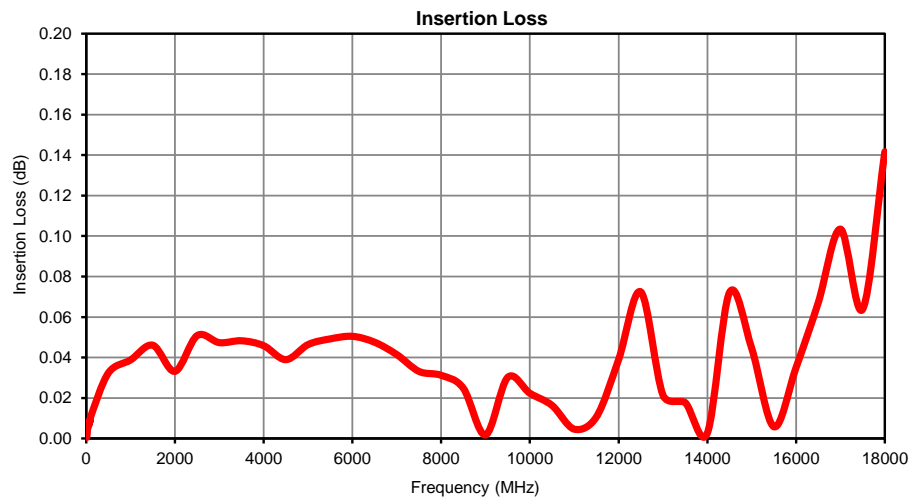
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- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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## Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	SMA-FEMALE VSWR (:1)	SMA-MALE VSWR (:1)
10	0.000	1.00	1.00
20	0.002	1.00	1.00
30	0.005	1.00	1.00
40	0.005	1.00	1.00
50	0.006	1.00	1.00
60	0.008	1.00	1.00
70	0.007	1.00	1.00
80	0.009	1.00	1.00
90	0.009	1.00	1.00
100	0.011	1.00	1.00
500	0.032	1.01	1.01
1000	0.039	1.01	1.01
1500	0.046	1.01	1.01
2000	0.033	1.01	1.01
2500	0.051	1.01	1.00
3000	0.047	1.01	1.01
3500	0.048	1.01	1.01
4000	0.046	1.02	1.03
4500	0.039	1.02	1.02
5000	0.046	1.02	1.02
5500	0.049	1.02	1.02
6000	0.050	1.02	1.01
6500	0.048	1.02	1.01
7000	0.041	1.02	1.01
7500	0.033	1.02	1.01
8000	0.031	1.02	1.02
8500	0.025	1.04	1.03
9000	0.002	1.04	1.04
9500	0.030	1.06	1.05
10000	0.022	1.07	1.06
10500	0.016	1.08	1.08
11000	0.005	1.09	1.09
11500	0.011	1.09	1.10
12000	0.039	1.11	1.12
12500	0.072	1.11	1.12
13000	0.021	1.11	1.10
13500	0.018	1.10	1.07
14000	0.003	1.09	1.05
14500	0.072	1.09	1.04
15000	0.044	1.06	1.02
15500	0.006	1.05	1.04
16000	0.035	1.05	1.07
16500	0.067	1.05	1.11
17000	0.103	1.06	1.13
17500	0.064	1.06	1.12
18000	0.142	1.05	1.12

## Typical Performance Curves

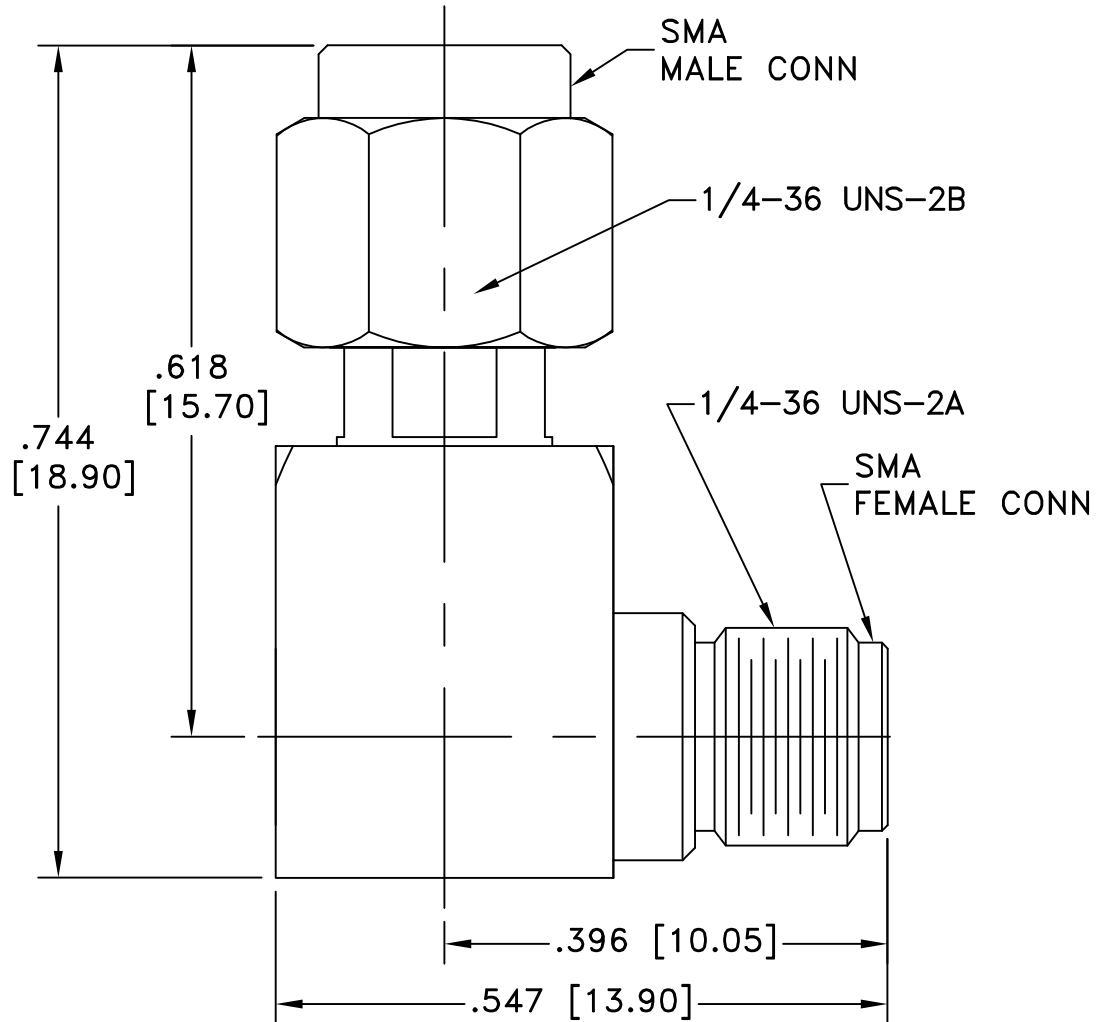


# Case Style

DJ

## Outline Dimensions

DJ2442-7



Weight: 6.5 grams

Dimensions are in inches (mm). Tolerances: 2 Pl.  $\pm 0.03$ ; 3 Pl.  $\pm 0.015$

### Note:

1. Case material: Tri-metal Alloy

 **Mini-Circuits**<sup>®</sup>  
ISO 9001 ISO 14001 CERTIFIED

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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.

<b>Specification</b>	<b>Test/Inspection Condition</b>	<b>Reference/Spec</b>
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