



Mini-Circuits

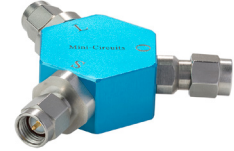
PRECISION

SMA Calibration Standard SOL-63-SM+

50Ω DC to 6 GHz

THE BIG DEAL

- Precision SMA calibration standard up to 6 GHz
- Works out of the box with Mini-Circuits' eVNA-63+
- SMA-Male Short / Open / Load standard
- Performs a one-port calibration on a VNA
- Cardboard storage case



Generic photo used for illustration purposes only

+RoHS Compliant

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

APPLICATIONS

- VNA Calibration

Model Number	SOL-63-SM+
Case Style	VR3265
Connector	SMA-Male

PRODUCT OVERVIEW

Mini-Circuits' SOL-63-SM+ is an SMA-Male short, open, & load calibration standard intended for VNA measurements of any SMA-Male DUT (device under test). The standard is supplied in a cardboard storage and display case.

SOL-63-SM+ is offered in Mini-Circuits' calibration kit, KSOLT-63-S+, which is supported by Mini-Circuits eVNA-63+ vector network analyzer right out of the box, with all calibration definitions pre-loaded within the eVNA Studio software. The standards can also be used as a cost-effective, high-performance alternative to calibration kits from a wide range of VNA suppliers.

KEY FEATURES

Feature	Advantages
Cost effective	Cost effective when comparing against competitors with similar specifications
1 Port Calibration	Single standard is all you need for one-port calibration of SMA-Male devices
2 Port Calibration	Combine with a thru to make fully calibrated 2-port or greater measurements with a VNA
Excellent return loss, 42 dB typ at load port	Precision calibration standards with high return loss minimize the measurement errors within a VNA system





PRECISION

SMA Calibration Standard **SOL-63-SM+**

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ELECTRICAL SPECIFICATIONS

Standard	Parameter	Min	Typ	Max	Units
	Frequency Range	DC		6	GHz
	Impedance		50		Ω
SHORT, OPEN	Phase Error ¹		1	2.5	°
LOAD	Return Loss	36	42		dB

1. Phase error is the phase deviation from the calkit model definition

MAXIMUM RATINGS²

Parameter	Ratings
Operating Temperature ³	20°C to 26°C
Storage Temperature	-20°C to 75°C
Supply Voltage	0.25 W

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

3. Operating temperature specified for optimal performance

CALKIT MODEL DEFINITION

P/N	Standard Label	Parameter	Value	Units	Additional Format
SOL-63-SM+	SHORT -M-	Offset Delay	16.7	ps	5.01 mm
		Offset Loss	10	G Ω /s	0.029 dB/ $\sqrt{\text{GHz}}$
		Z0	50	Ω	50 Ω
		L0	4.000	(1E-12) H	4 pH
		L1	-650.000	(1E-24) H/Hz	-0.650 pH/GHz
		L2	39.000	(1E-33) H/Hz ²	0.039 pH/GHz ²
		L3	-0.640	(1E-42) H/Hz ³	-0.00064 pH/GHz ³
	OPEN -M-	Offset Delay	16.7	ps	5.01 mm
		Offset Loss	3	G Ω /s	0.009 dB/ $\sqrt{\text{GHz}}$
		Z0	50	Ω	50 Ω
		C0	4.500	(1E-15) F	4.5 fF
		C1	395.000	(1E-27) F/Hz	0.395 fF/GHz
		C2	-20.000	(1E-36) F/Hz ²	-0.0200 fF/GHz ²
		C3	0.400	(1E-45) F/Hz ³	0.0004 fF/GHz ³
	LOAD	Offset Delay	0	ps	0 mm
		Offset Loss	0	G Ω /s	0 dB/ $\sqrt{\text{GHz}}$
		Z0	50	Ω	50 Ω

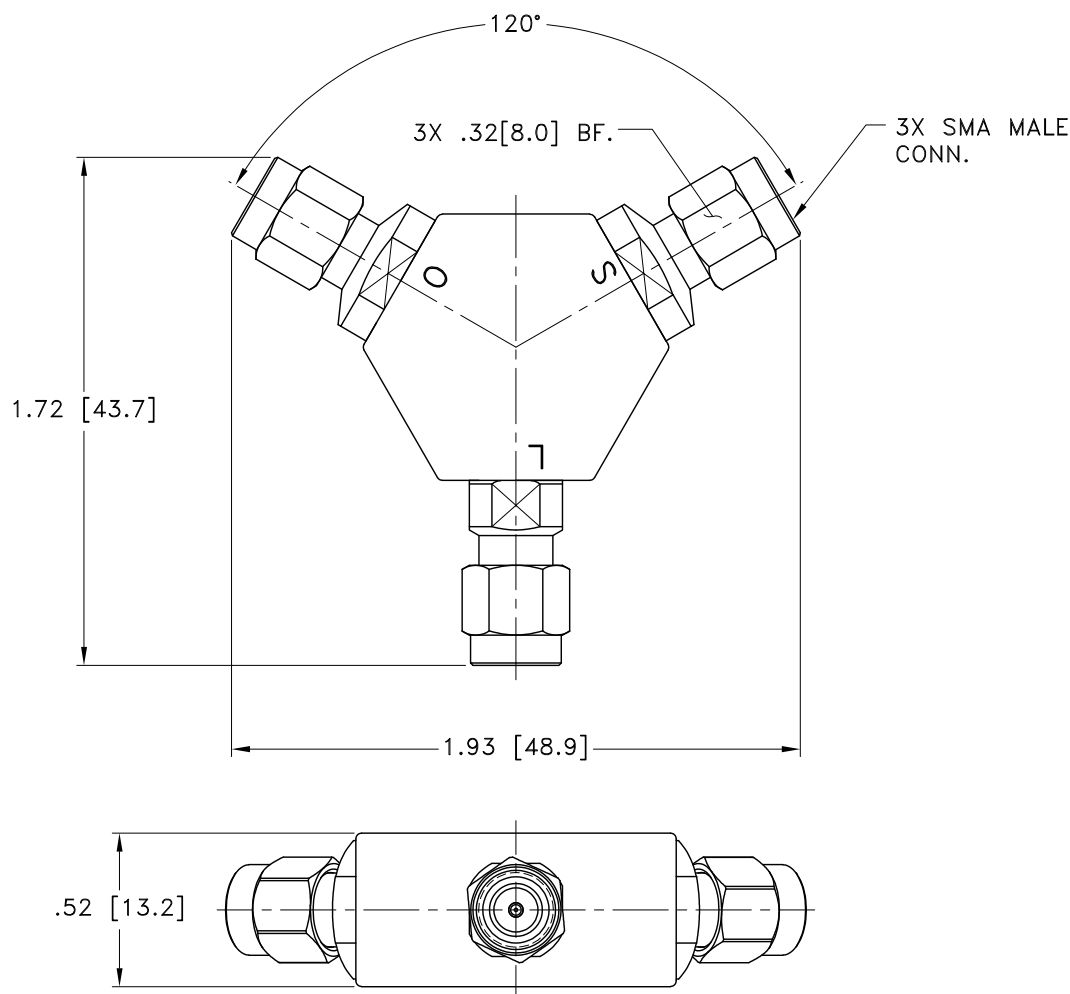




PRECISION

SMA Calibration Standard **SOL-63-SM+**

OUTLINE DRAWING



Weight: 38.0 grams

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

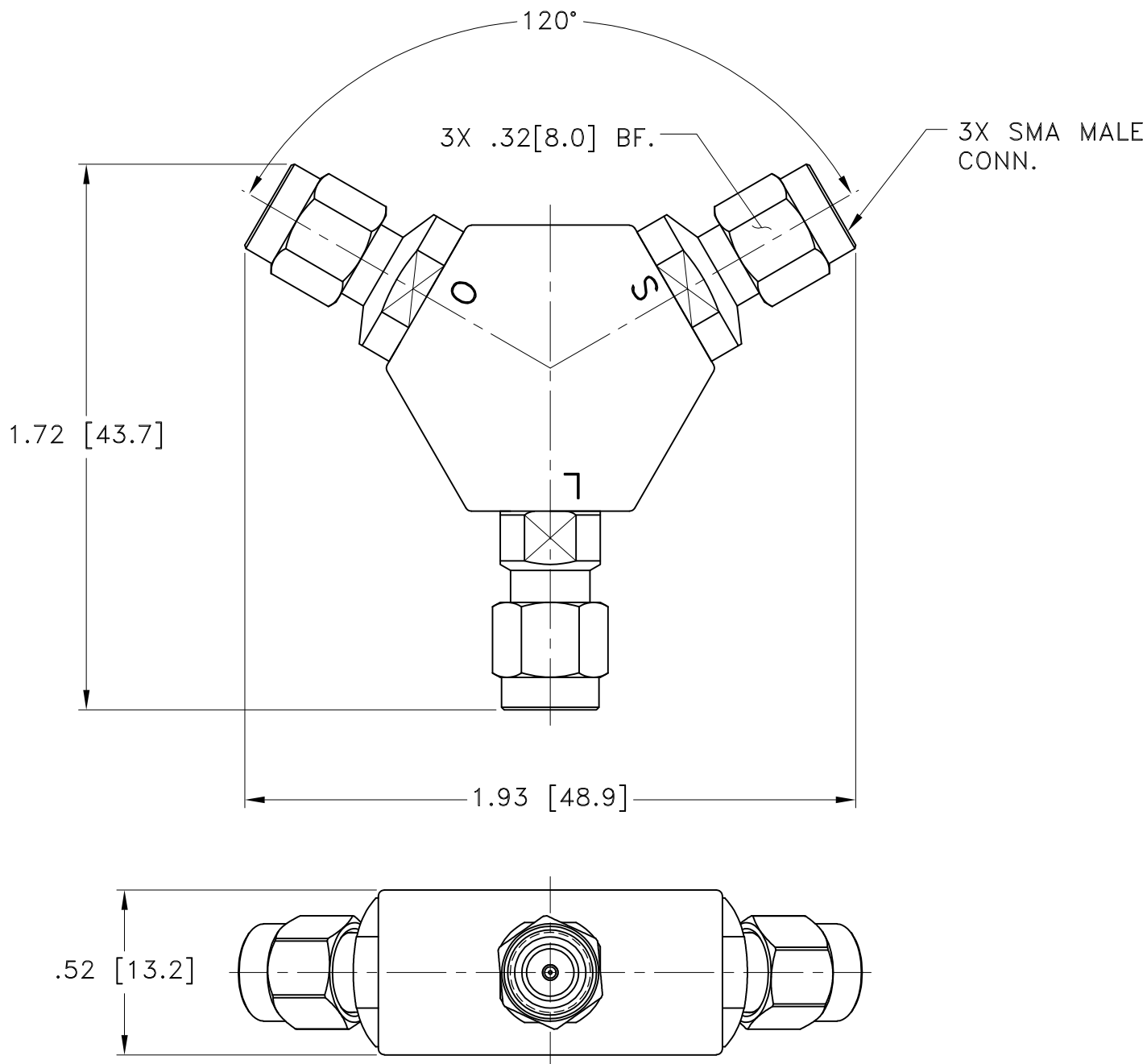
Notes:

1. Case material: Aluminum
2. Case Finish: Blue Anodize

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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Mini-Circuits®
ISO 9001 ISO 14001 CERTIFIED

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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	20° to 26° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-20° to 75° C Ambient Environment	Individual Model Data Sheet