PRECISION

N-type Calibration Standards

MTH-63-NFNF+
MTH-63-NFNM+
MTH-63-NMNM+

50Ω DC to 6 GHz

THE BIG DEAL

- Precision N-type calibration standard up to 6 GHz
- Works out of the box with Mini-Circuits' eVNA-63+
- N-type matched thru standards
- Cardboard storage case

Generic photos used for illustration purposes only

Model No.	MTH-63-NFNF+	MTH-63-NFNM+	MTH-63-NMNM+
Case Style	DJ1092-1	DJ1028-2	DJ2460-1
Connector	N-F to N-F	N-F to N-M	N-M to N-M

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

APPLICATIONS

- VNA Calibration

PRODUCT OVERVIEW

Mini-Circuits' MTH-63-NFNF+, MTH-63-NFNM+, and MTH-63-NMNM+ are N-type matched thru calibration standard intended for VNA measurements of any N-Female or N-Male DUT (device under test). The standards are supplied in a cardboard storage and display case.

MTH-63-NFNF+, MTH-63-NFNM+, and MTH-63-NMNM+ are offered in Mini-Circuits' calibration kit, KSOLT-63-N+, 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
2 Port Calibration	Combine with an SOL to make fully calibrated 2-port or greater measurements with a VNA
Excellent return loss, 42 dB typ	Precision calibration standards with high return loss minimize the measurement errors within a VNA system
Very low insertion loss, 0.05 dB typ.	Provides excellent signal power transmission from input to output.

REV OR
ECO-011759
MTH-63-N+
MCL NY
220203

ELECTRICAL SPECIFICATIONS

Parameter	Condition (GHz)	Min	Typ	Max	Units
Frequency Range		DC		6	GHz
Impedance			50		Ω
Insertion Loss	DC-6		0.05	0.2	dB
Return Loss	DC-6	30	42		dB
Phase Error[1]	DC-2		0.3	0.9	deg
	2-4		0.6	1.6	
	4-6		0.9	2.3	

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

MAXIMUM RATINGS[2]

Parameter	Ratings
Operating Temperature[3]	20°C to 26°C
Storage Temperature	-20°C to 75°C

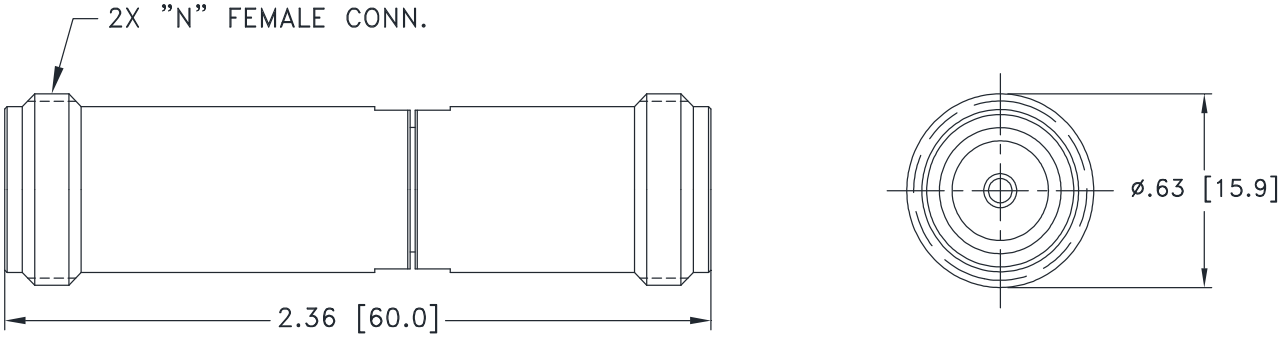
2. Permanent damage may occur if any of these limits are exceeded.
3.Operating temperature specified for optimal performance

CALKIT MODEL DEFINITION

Parameter	Value	Units	Additional Format
Offset Delay	145.77	ps	43.7 mm
Offset Loss	1	GΩ/s	0.013 dB/√GHz
Z0	50	Ω	50 Ω

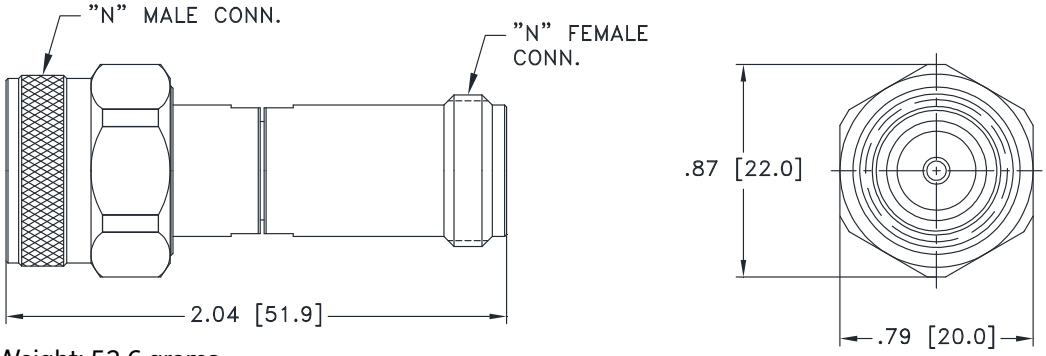
OUTLINE DRAWINGS
(Dimensions in inches)

DJ1092-1



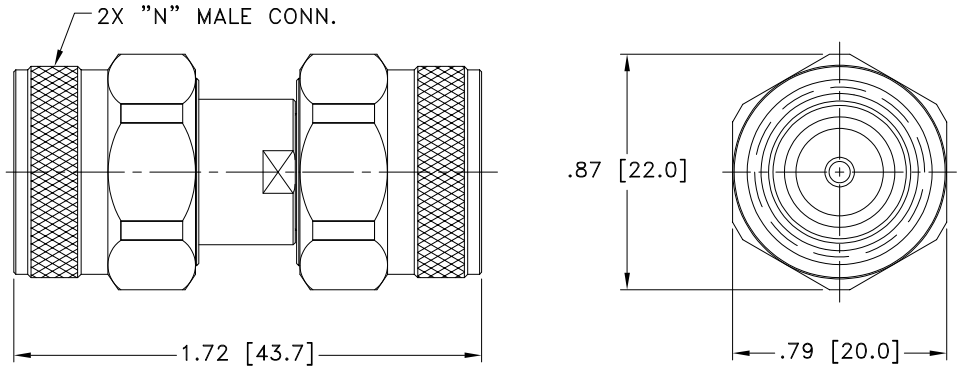
Weight: 52.63 grams

DJ1028-2



Weight: 52.6 grams

DJ2460-1



Weight: 53.0 grams

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