Coaxial

Inner-Outer DC Block

BLKD-183-S+

50Ω 0.01 to 18 GHz

The Big Deal

- Ultra-wideband, 10 MHz to 18 GHz
- Excellent Return Loss, 20 dB at 8GHz typ
- Low insertion loss, 0.43 dB typ

CASE STYLE: FF1048-2

Product Overview

Mini-Circuits' BLKD-183-S+ is a coaxial inner-outer DC Block supporting a wide range of applications from 10 MHz to 18 GHz including Ku band test and measurement and more. This model provides low insertion loss, excellent return loss and DC voltage handling up to 200V. The unit features SMA-Female connector at one end and SMA-Male connector at the other end and comes housed in a rugged stainless steel body, measuring only 0.5" in diameter and 1.3" in length.

Key Features

Features	Advantages
Wideband, 10 MHz to 18 GHz	Wide frequency range up to 18 GHz provides application flexibility and makes this model ideal for broad- band and multi-band use.
Inner-Outer DC Block	Blocks DC current flow at the inner and outer conductor
Excellent Return Loss, 20 dB typ at 8 GHz	Provides good matching for 50Ω systems and minimizes signal reflections across wide frequency range enabling its use in test and measurement.
Low insertion loss, 0.43 dB typ.	Provides excellent signal power transmission from input to output.
Stainless steel construction.	Stands up to wear and tear in demanding test environments and provides excellent reliability.
Very wide operating temperature range, -65 to +125˚C	Withstands extreme operating conditions and is suitable for use near high power components where heat rise is common and for use in over temperature tests

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Generic photo used for illustration purposes only

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SMA Connectors	Model
Female-Male	BLKD-183-S+

Maximum Ratings

Operating Temperature	-65°C to 125°C
Storage Temperature	-65°C to 125°C
DC Input Voltage at inner/outer conductor	200V

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

Features

- broadband performance
- low insertion loss
- rugged unibody construction
- off-the-shelf availability
- both an Inner and Outer DC Block

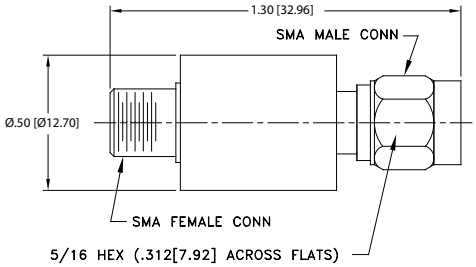
Applications

- test and measurement instrumentation

+RoHS Compliant

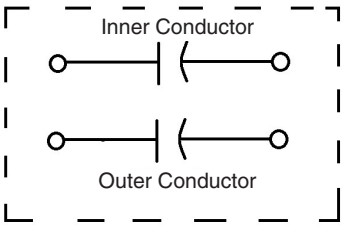
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Outline Drawing



Weight: 10 grams MAX
Dimensions are in inches [mm]

Electrical Schematic

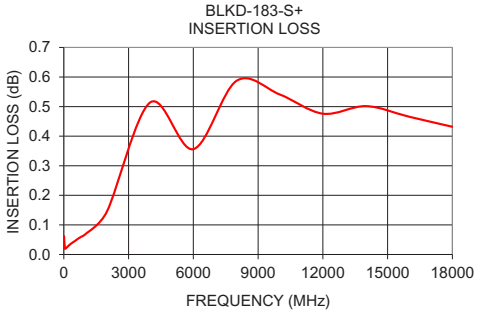


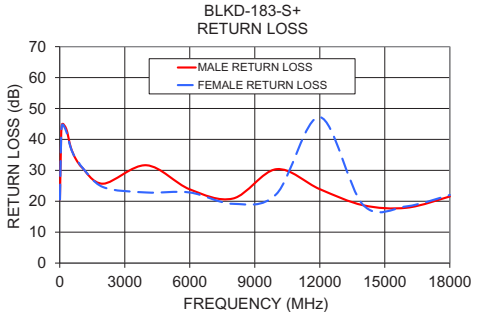
Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		0.01	—	18	GHz
Insertion Loss	100 - 18000		0.43	0.80	dB
Return Loss	100 - 14000 14000 - 18000	16.5 15.5	25.42 18.52	— —	dB

Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	
		Input Female	Output Male
10.00	0.06	20.57	20.57
50.00	0.02	35.63	35.64
100.00	0.02	44.74	44.50
300.00	0.03	43.40	42.60
500.00	0.04	37.66	37.43
700.00	0.06	34.17	34.20
900.00	0.06	31.97	32.25
1000.00	0.07	31.10	31.25
2000.00	0.15	25.68	24.58
4000.00	0.51	31.64	22.83
6000.00	0.36	23.85	22.84
8000.00	0.59	20.89	19.17
10000.00	0.54	30.38	22.34
12000.00	0.48	23.91	47.23
14000.00	0.50	18.71	18.82
16000.00	0.47	17.89	18.34
18000.00	0.43	21.54	22.03





Notes

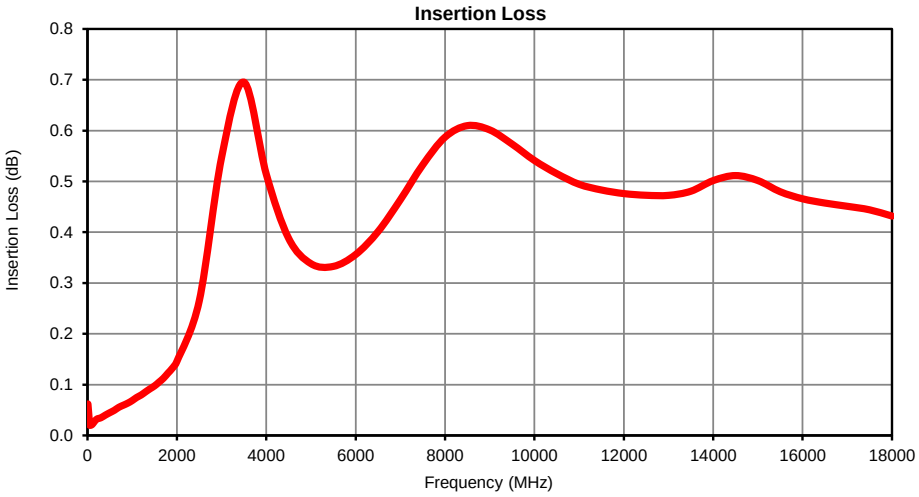
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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

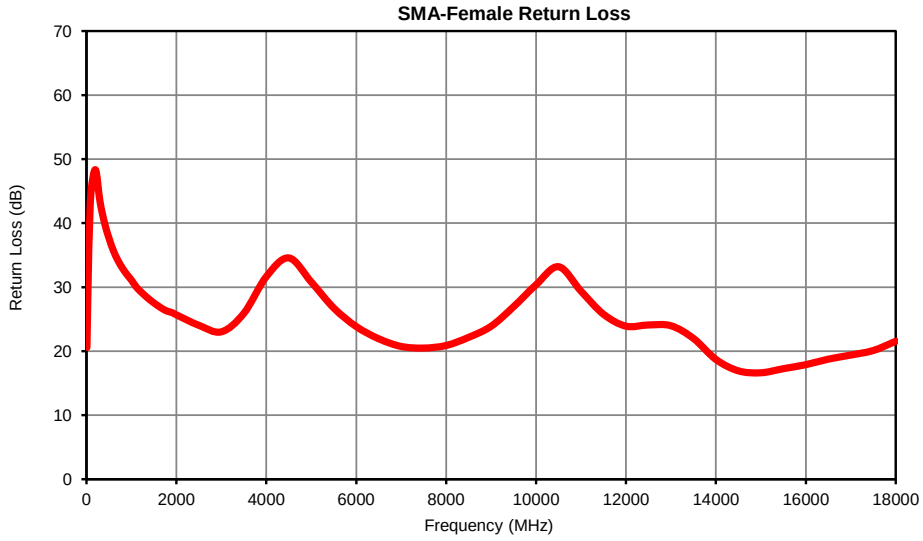
Inner-Outer DC Block, SMA-F to SMA-M BLKD-183-S+

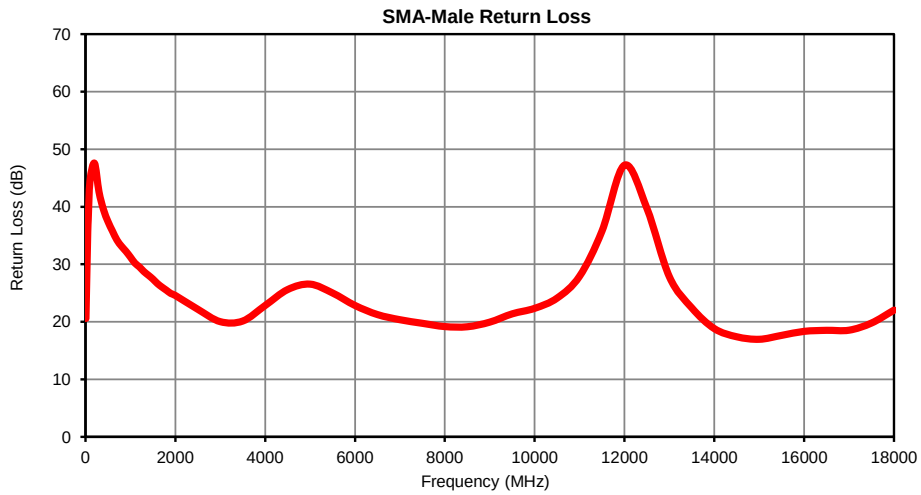
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	SMA-FEMALE Return Loss (dB)	SMA-MALE Return Loss (dB)
10	0.06	20.57	20.57
50	0.02	35.63	35.64
60	0.02	37.72	37.68
100	0.02	44.74	44.50
200	0.03	48.34	47.56
300	0.03	43.40	42.60
400	0.04	40.07	39.52
500	0.04	37.66	37.43
600	0.05	35.67	35.77
700	0.06	34.17	34.20
800	0.06	32.96	33.14
900	0.06	31.97	32.25
1000	0.07	31.10	31.25
1100	0.07	30.09	30.21
1200	0.08	29.35	29.54
1300	0.09	28.69	28.73
1400	0.09	28.08	28.09
1500	0.10	27.54	27.43
1600	0.10	27.04	26.66
1700	0.11	26.59	26.04
1800	0.12	26.23	25.49
1900	0.13	26.03	24.92
2000	0.15	25.68	24.58
2500	0.26	24.04	22.18
3000	0.55	23.02	20.02
3500	0.70	25.90	20.13
4000	0.51	31.64	22.83
4500	0.39	34.57	25.60
5000	0.34	30.80	26.54
5500	0.33	26.74	25.01
6000	0.36	23.85	22.84
6500	0.40	21.94	21.25
7000	0.46	20.74	20.36
7500	0.53	20.49	19.73
8000	0.59	20.89	19.17
8500	0.61	22.16	19.14
9000	0.60	23.89	19.94
9500	0.57	26.94	21.38
10000	0.54	30.38	22.34
10500	0.52	33.19	24.12
11000	0.49	29.37	27.91
11500	0.48	25.77	35.79
12000	0.48	23.91	47.23
12500	0.47	24.09	39.70
13000	0.47	23.97	27.82
13500	0.48	22.00	22.41
14000	0.50	18.71	18.82
14500	0.51	16.93	17.40
15000	0.50	16.62	16.96
15500	0.48	17.27	17.64
16000	0.47	17.89	18.34
16500	0.46	18.75	18.51
17000	0.45	19.40	18.54
17500	0.44	20.10	19.78
18000	0.43	21.54	22.03

Typical Performance Curves



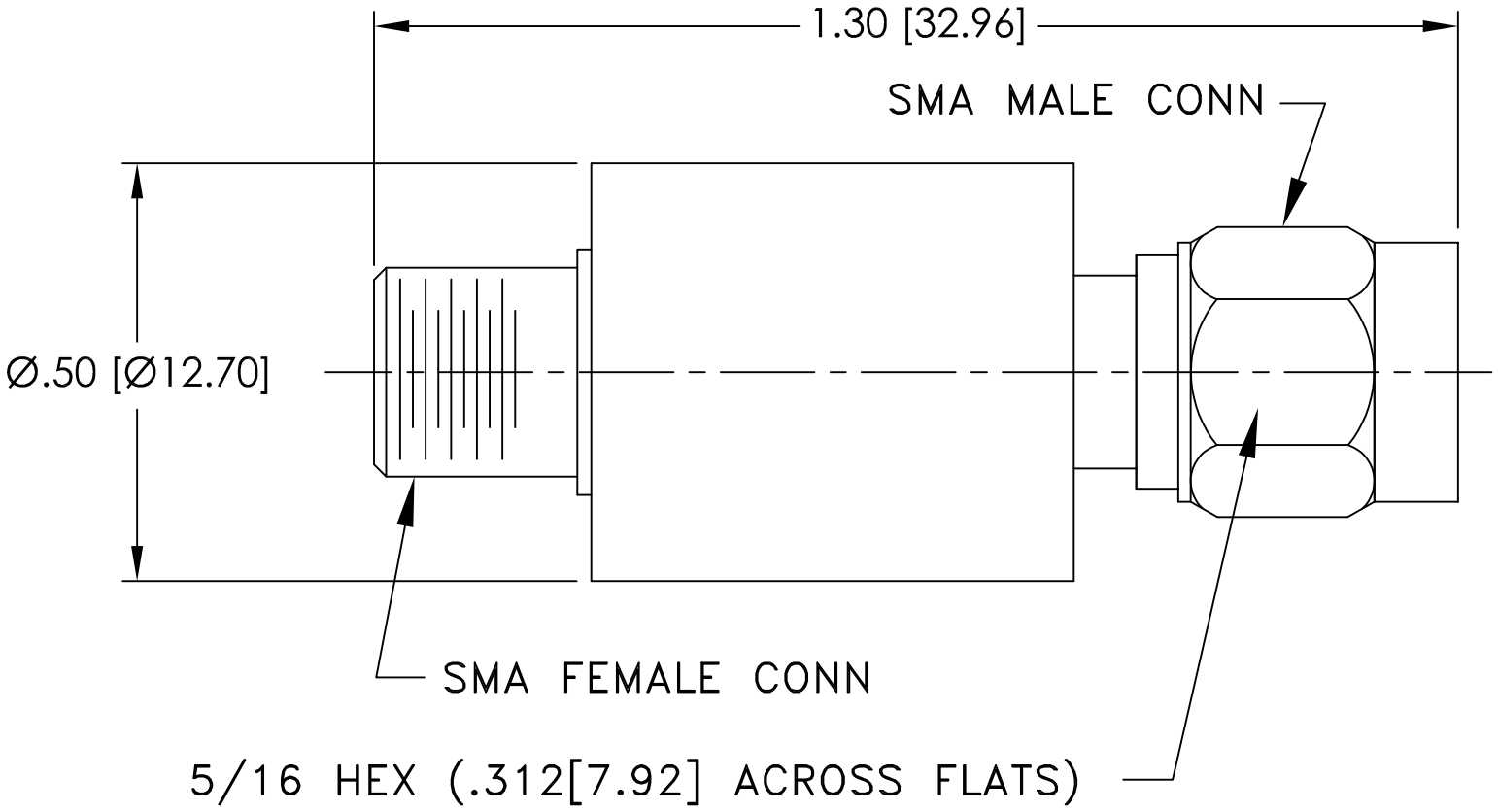




Case Style FF

Outline Dimensions

FF1048-2



Weight: 10 grams MAX

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

Notes:
1. Case material: High Temperature Plastic.
2. Finish: Clear.

Mini-Circuits

Environmental Specifications ENV28

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