COAXIAL

DC Block

BLK-E653+

50Ω 10 MHz to 65 GHz 1.85 mm Female to 1.85 mm Male

THE BIG DEAL

- Ultra-Wideband, 10 MHz to 65 GHz
- Flat Response
- Low Insertion Loss, 0.70 dB Typ. Up to 65 GHz
- Mates with 2.4 mm



Generic photo used for illustration purposes only

APPLICATIONS

- Test and Measurement Instrumentation
- Communication Systems
- Defense Systems

Model No.	BLK-E653+
Case Style	DJ2591-1
Connectors	1.85 mm Female to 1.85 mm Male

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

PRODUCT OVERVIEW

Mini-Circuits' BLK-E653+ is a coaxial DC block supporting a wide range of applications from 0.010 to 65 GHz including 5G systems, Ka-band SatCom, test and measurement and more. This model provides low insertion loss, excellent return loss, RF input handling up to 1 W and DC voltage handling up to +16 V. The unit features 1.85 mm female connector at one end and 1.85 mm male connector at the other end and comes housed in a rugged stainless steel body, measuring only 0.31" in diameter and 0.81" in length. Mates with 2.4 mm.

KEY FEATURES

Features	Advantages
Wideband, 10 MHz to 65 GHz	Wide frequency range up to 65 GHz provides application flexibility and makes this model ideal for broadband and multi-band use.
Excellent Return Loss, 22 dB Typ.	Provides good matching for 50Ω systems and minimizes signal reflections across wide frequency range enabling its use in test and measurement.
Low Insertion Loss, 0.70 dB Typ. Up to 65 GHz	Provides excellent signal power transmission from input to output.
Passivated Stainless Steel Construction	Stands up to wear and tear in demanding test environments and provides excellent reliability.
Wide Operating Temperature Range, -55 to +100 °C	Withstands wide operating conditions.

REV. A
ECO-017055
BLK-E653+
MCL NY
260924

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ELECTRICAL SPECIFICATIONS AT +25 °C

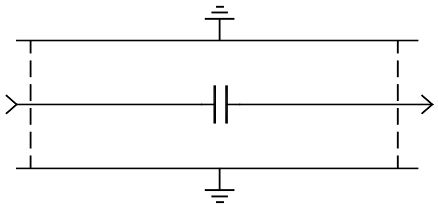
Parameter	Frequency (GHz)	Min.	Typ.	Max.	Units
Frequency Range		0.01		65	GHz
Insertion Loss	0.01–40	–	0.6	1.3	dB
	40–50	–	0.6	1.3	
	40–65	–	0.7	1.3	
Return Loss	0.01–65	12	22	–	dB

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Case Temperature	-55 °C to +100 °C
Storage Temperature	-55 °C to +100 °C
DC Input Voltage	+16 V
Input Power	+30 dBm

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

ELECTRICAL SCHEMATIC



COAXIAL

DC Block

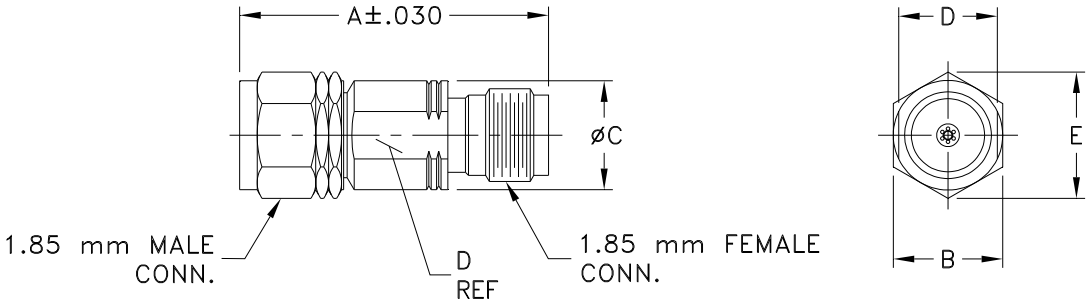
BLK-E653+

50Ω 10 MHz to 65 GHz 1.85 mm Female to 1.85 mm Male

COAXIAL CONNECTIONS

Port 1	1.85 mm Female
Port 2	1.85 mm Male

OUTLINE DRAWING



OUTLINE DIMENSIONS (Inches / mm)

A	B	C	D	E	wt
0.81	0.31	0.31	0.28	0.36	grams
20.45	8.00	8.00	7.14	9.14	5.6

COAXIAL

DC Block

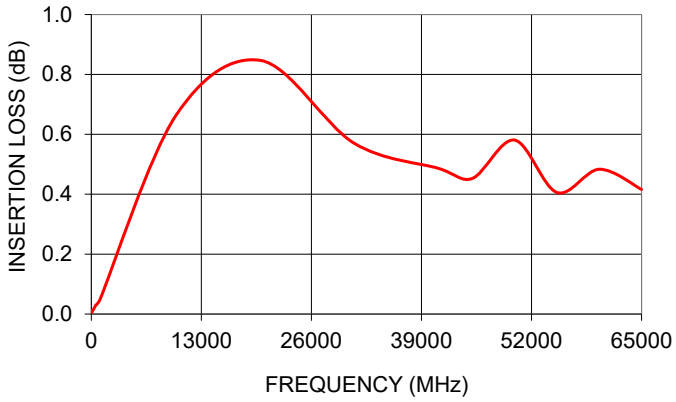
BLK-E653+

50Ω 10 MHz to 65 GHz 1.85 mm Female to 1.85 mm Male

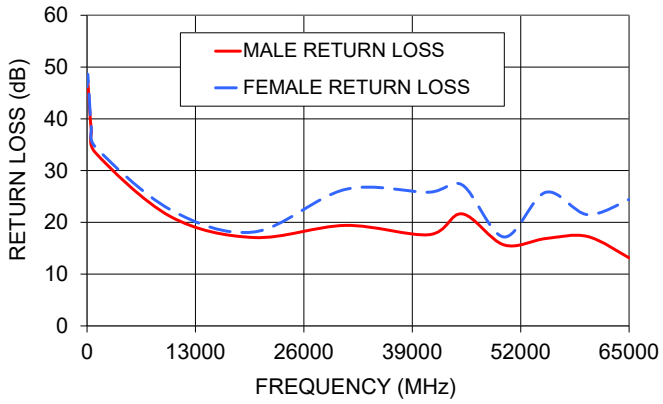
TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	
		1.85 mm Female	1.85 mm Male
10	0.01	46.2	47.1
100	0.01	48.4	47.0
500	0.03	38.5	38.0
1000	0.05	34.6	33.5
10000	0.66	22.4	21.1
20000	0.85	18.1	17.1
31000	0.57	26.4	19.4
41000	0.49	25.8	17.6
45000	0.45	27.2	21.6
50000	0.58	17.2	15.6
55000	0.41	25.8	16.9
60000	0.48	21.5	17.3
65000	0.42	24.4	13.1

BLK-E653+
INSERTION LOSS



BLK-E653+
RETURN LOSS



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-Circuits' 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/terms/viewterm.html

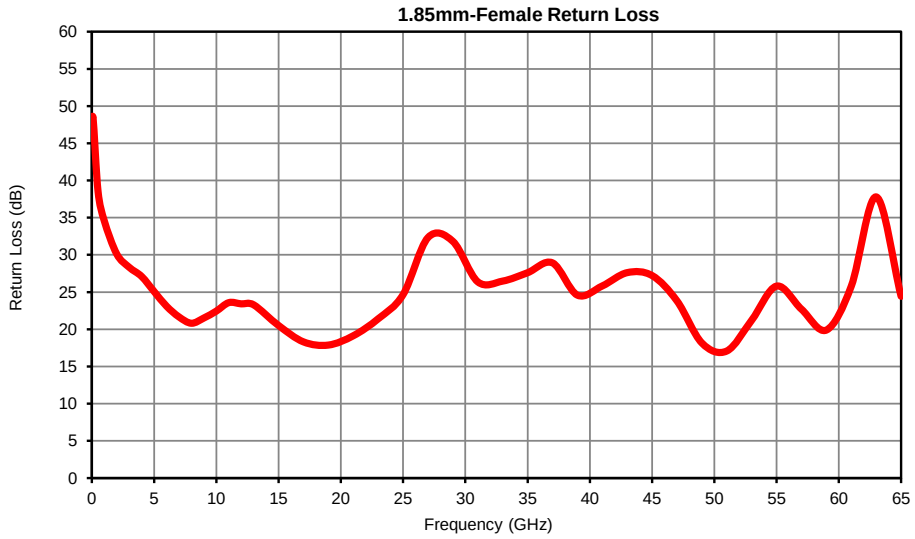
DC Block, 1.85mm-F to 1.85mm-M BLK-E653+

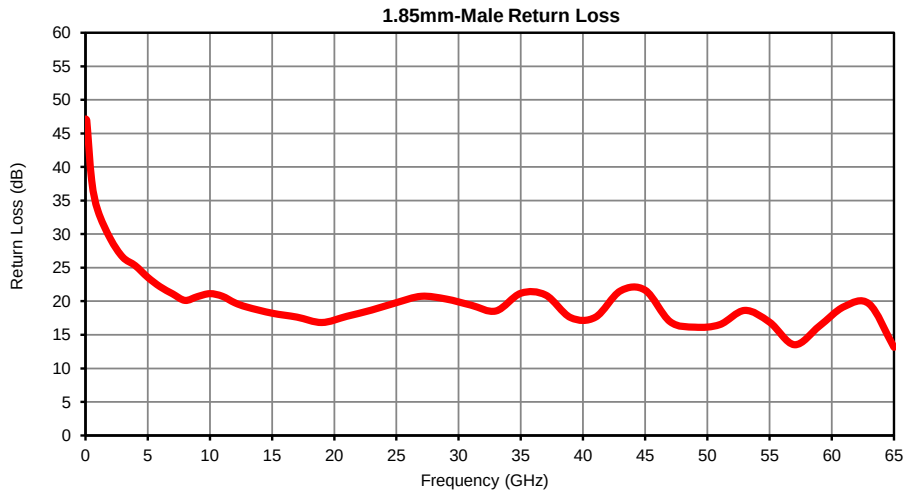
Typical Performance Data

FREQUENCY (GHz)	INSERTION LOSS (dB)	1.85mm-FEMALE Return Loss (dB)	1.85mm-MALE Return Loss (dB)
0.01	0.01	46.2	47.1
0.10	0.01	48.4	47.0
0.50	0.03	38.5	38.0
1	0.05	34.6	33.5
2	0.09	30.1	29.3
3	0.05	28.3	26.6
4	0.09	27.1	25.3
5	0.27	25.1	23.6
6	0.34	23.1	22.2
7	0.47	21.7	21.1
8	0.68	20.8	20.1
9	0.72	21.5	20.7
10	0.66	22.4	21.1
11	0.59	23.6	20.7
12	0.55	23.4	19.8
13	0.65	23.3	19.1
15	0.65	20.5	18.2
17	0.80	18.3	17.6
19	0.86	17.9	16.8
21	0.83	19.1	17.7
23	0.84	21.4	18.7
25	0.76	24.7	19.8
27	0.64	32.3	20.7
29	0.63	31.8	20.3
31	0.57	26.4	19.4
33	0.58	26.5	18.5
35	0.54	27.6	21.2
37	0.51	28.9	20.9
39	0.44	24.6	17.6
41	0.49	25.8	17.6
43	0.48	27.6	21.5
45	0.45	27.2	21.6
47	0.46	23.8	17.0
49	0.54	18.2	16.1
51	0.54	17.1	16.5
53	0.48	21.2	18.6
55	0.41	25.8	16.9
57	0.42	22.7	13.5
59	0.48	19.9	16.3
61	0.49	25.8	19.2
63	0.44	37.8	19.6
65	0.42	24.4	13.1

Typical Performance Curves



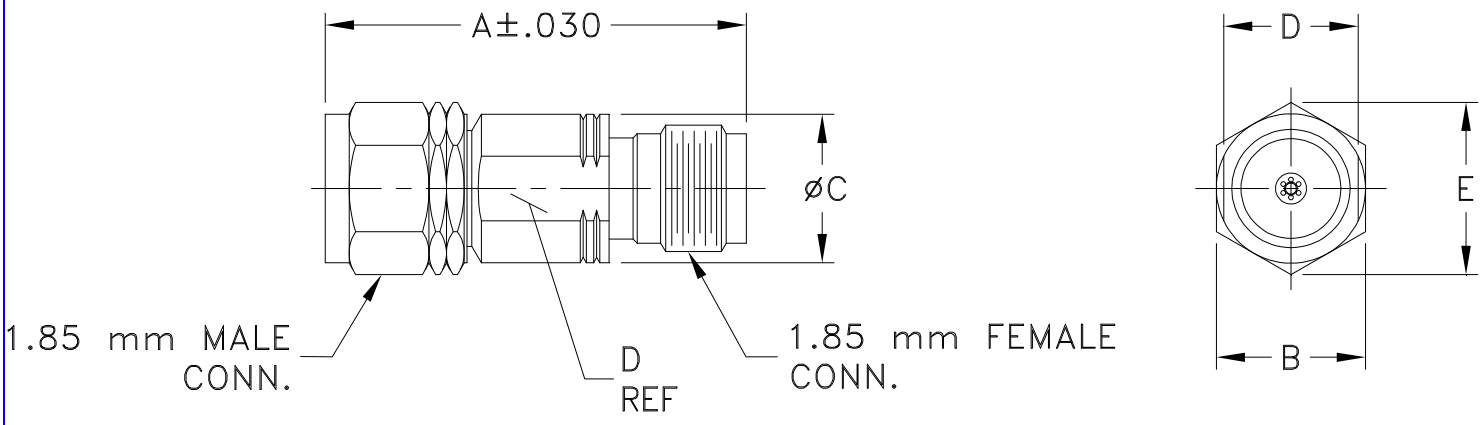




Case Style DJ

DJ2591-1

Outline Dimensions



CASE#	A	B	C	D	E	WT. GRAM
DJ2591-1	.805 (20.45)	.312 (8.00)	.312 (8.00)	.281 (7.14)	.36 (9.14)	5.6

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

Notes:
1. Case material: Stainless steel.
2. Finish: Passivation.

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Mini-Circuits

Environmental Specifications ENV89

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 or -55° to 85° C or -45° to 100° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 5 cycles	MIL-STD-202, Method 107, Condition B except over -55° to 100°C
Connector Durability	500 mating/unmating cycles	MIL-PRF-39012E, PARAGRAPH 4.6.12
Drop Test	1 meter height, 5 times	

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