

DC Pass Directional Coupler

50 Ω

800 to 1000 MHz

ZADC-20-10+

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	1.5A
Permanent damage may occur if any of these limits are exceeded.	

Coaxial Connections

INPUT	1
OUTPUT	3
COUPLED	2

Features

- low mainline loss, 0.4 dB typ.
- excellent VSWR, 1.18 typ.
- power input up to 5W
- DC current through input to output 1.5A Max.

Applications

- GSM
- instrumentation
- cellular



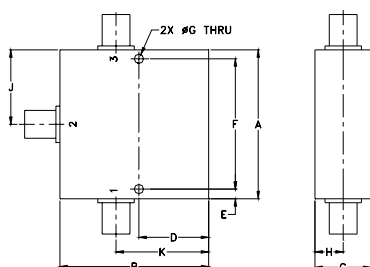
SMA version shown
CASE STYLE: CC51-1

Connectors	Model
N-TYPE	ZADC-20-10-N+
SMA	ZADC-20-10-S+

+RoHS Compliant

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

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F
2.00	2.00	.75	.938	.13	1.750
50.80	50.80	19.05	23.83	3.30	44.45
G	H	J	K	wt	
.125	.38	1.00	1.25	grams	
3.18	9.65	25.40	31.75	145.0	

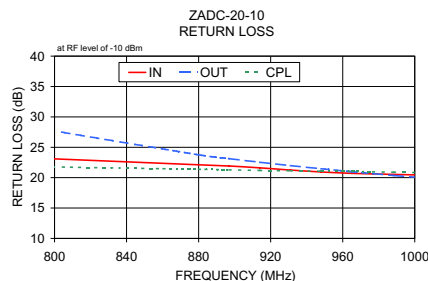
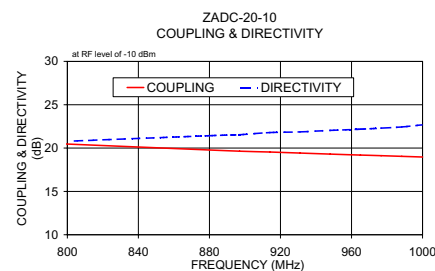
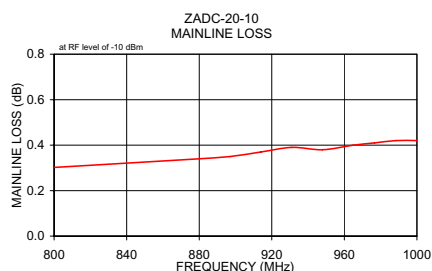
Directional Coupler Electrical Specifications

FREQ. RANGE (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT (W)
	Nom.	Flatness	Typ.	Max.	Typ.	Min.		
f _L -f _U								
800-1000	20.0±0.6	±1.2	0.4	0.7	21	17	1.18	5

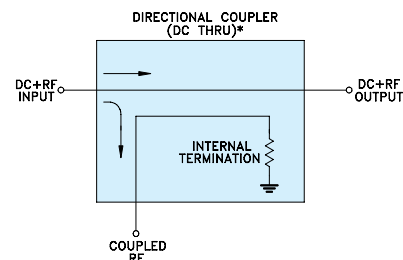
1. Mainline loss includes theoretical power loss at coupled port.

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
753.33	0.28	20.86	20.41	23.66	29.98	21.98
880.00	0.34	19.78	21.43	22.11	23.76	21.39
897.00	0.35	19.64	21.54	21.92	23.13	21.29
914.00	0.37	19.54	21.79	21.61	22.54	21.20
931.00	0.39	19.42	21.87	21.25	21.99	21.13
948.00	0.38	19.30	22.04	20.93	21.47	21.07
965.00	0.40	19.19	22.18	20.71	20.98	21.03
976.66	0.41	19.12	22.30	20.62	20.67	20.96
988.33	0.42	19.04	22.44	20.53	20.36	20.90
1000.00	0.42	18.97	22.69	20.46	20.08	20.84



Electrical Schematic



* ELECTRICAL SCHEMATIC FOR DIRECTIONAL COUPLER THAT IS DESIGNED WITHOUT INTERNAL TRANSFORMERS.

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



Directional Coupler

ZADC-20-10+

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS		
				IN	OUT	CPL
800.0	0.29	20.69	39.30	18.62	28.52	28.34
805.0	0.31	20.63	39.30	18.67	28.25	28.15
810.0	0.33	20.58	39.31	18.73	27.98	28.00
815.0	0.34	20.54	39.25	18.70	27.69	27.88
820.0	0.34	20.47	39.22	18.75	27.46	27.71
825.0	0.32	20.43	39.23	18.80	27.23	27.64
830.0	0.28	20.36	39.22	18.86	27.08	27.52
835.0	0.26	20.31	39.22	18.91	26.89	27.44
840.0	0.29	20.27	39.17	18.89	26.77	27.33
845.0	0.35	20.29	39.25	18.96	26.66	27.20
850.0	0.41	20.31	39.36	19.05	26.55	27.04
855.0	0.46	20.31	39.39	19.07	26.45	26.86
860.0	0.43	20.27	39.43	19.16	26.35	26.67
865.0	0.37	20.21	39.37	19.16	26.21	26.44
870.0	0.32	20.13	39.33	19.21	26.04	26.20
875.0	0.32	20.06	39.31	19.25	25.86	25.95
880.0	0.35	20.00	39.36	19.36	25.63	25.71
885.0	0.38	19.97	39.32	19.36	25.42	25.53
890.0	0.39	19.93	39.33	19.40	25.19	25.34
895.0	0.36	19.87	39.31	19.44	24.94	25.17
900.0	0.32	19.82	39.30	19.48	24.74	25.02
905.0	0.33	19.80	39.20	19.40	24.51	24.86
910.0	0.35	19.78	39.37	19.58	24.34	24.73
915.0	0.39	19.78	39.34	19.56	24.19	24.63
920.0	0.43	19.77	39.39	19.63	24.07	24.53
925.0	0.43	19.73	39.41	19.68	23.97	24.41
930.0	0.43	19.69	39.42	19.73	23.86	24.25
935.0	0.41	19.65	39.43	19.79	23.56	24.00
940.0	0.39	19.60	39.44	19.84	23.60	23.86
945.0	0.38	19.55	39.51	19.96	23.46	23.67
950.0	0.39	19.51	39.47	19.96	23.27	23.45
955.0	0.40	19.48	39.42	19.94	23.19	23.30
960.0	0.42	19.45	39.47	20.02	22.98	23.08
965.0	0.42	19.42	39.43	20.01	22.76	22.86
970.0	0.41	19.38	39.43	20.04	22.54	22.68
975.0	0.41	19.34	39.47	20.12	22.37	22.53
980.0	0.41	19.33	39.43	20.11	22.20	22.39
985.0	0.43	19.29	39.43	20.13	22.03	22.27
990.0	0.46	19.28	39.47	20.19	21.87	22.13
995.0	0.47	19.26	39.45	20.19	21.74	22.01
1000.0	0.46	19.21	39.46	20.25	21.59	21.89

REV. X1
ZADC-20-10+
060718
Page 1 of 1



IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS9100 CERTIFIED • RoHS compliant

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661



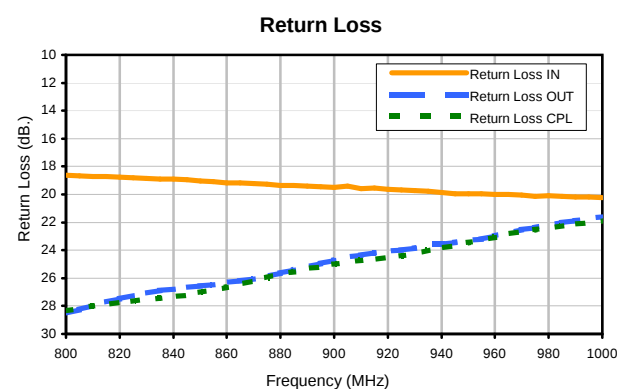
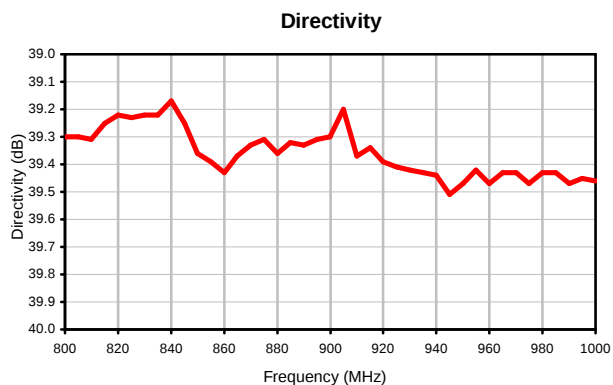
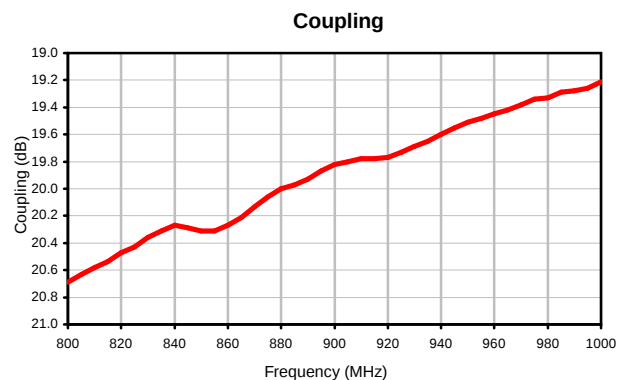
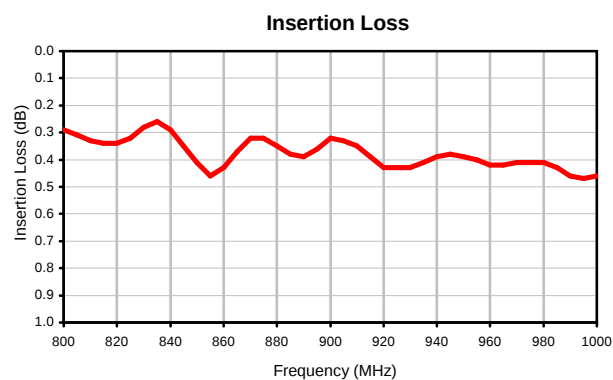
For detailed performance specs & shopping online see



Directional Coupler

Typical Performance Curves

ZADC-20-10+



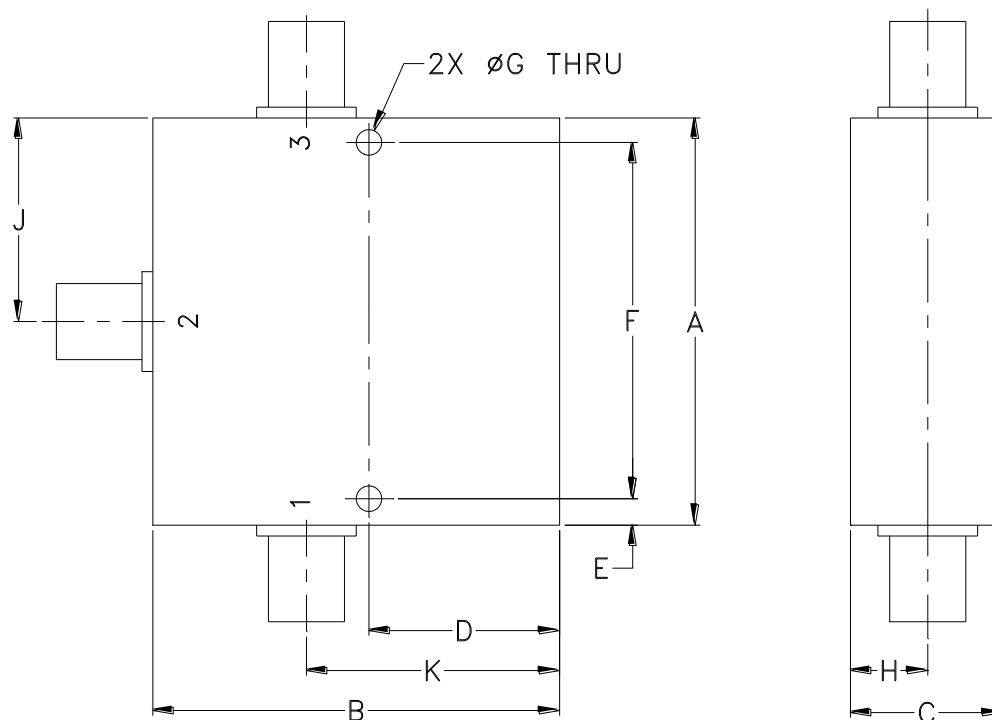
REV. X1
ZADC-20-10+
060718
Page 1 of 1



Mini-Circuits®
IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS 9100 CERTIFIED RoHS compliant
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see minicircuits.com

Outline Dimensions

CC51-1



CASE#	A	B	C	D	E	F	G	H	J	K	WT. GRAMS
CC51-1	2.00 (50.80)	2.00 (50.80)	.75 (19.05)	.938 (23.83)	.13 (3.30)	1.750 (44.45)	.125 (3.17)	.38 (9.65)	1.00 (25.40)	1.25 (31.75)	145

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

Notes:

- Case material: Aluminum alloy.
- Case finish:
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
- Refer to the individual model data sheet for the type of connectors available.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



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	-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