

Directional Coupler

ZADC-10-17

50Ω Up to 5W 1000 to 1700 MHz

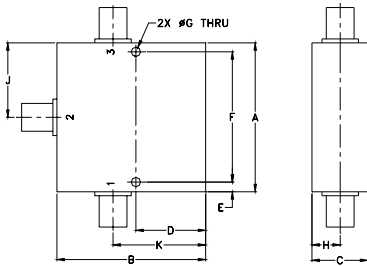
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	1.0A
Permanent damage may occur if any of these limits are exceeded.	

Coaxial Connections

INPUT	1
OUTPUT	3
COUPLED	2

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

Features

- excellent directivity, 25 dB typ.
- excellent VSWR, 1.20 typ.
- power input up to 5W
- low cost
- DC current through input to output 1.0A Max.

Applications

- GSM
- PCN
- cellular



CASE STYLE: CC51-1

Connectors	Model
SMA	ZADC-10-17-S

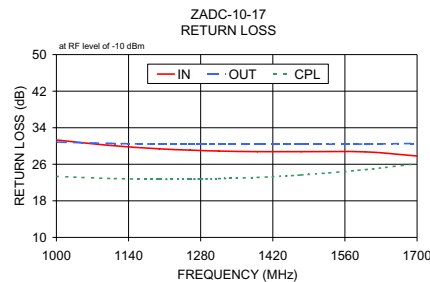
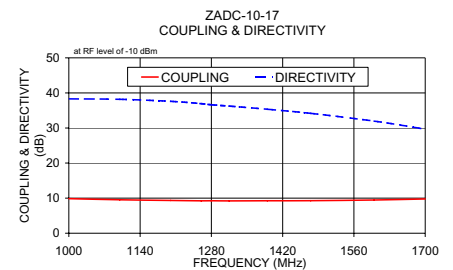
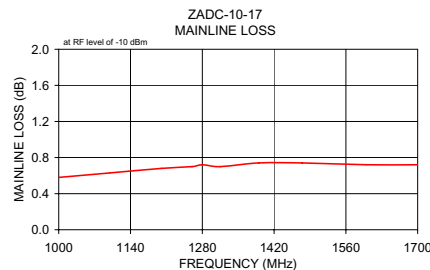
Directional Coupler Electrical Specifications

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								
1000-1700	9.8±0.5	±1.0	0.8	1.3	25	17	1.2	5

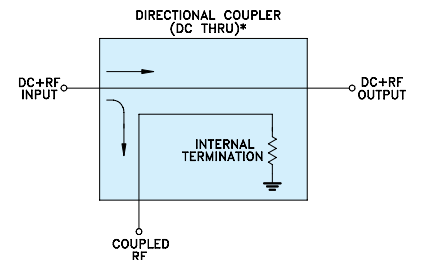
1. Mainline loss includes theoretical power loss at coupled port.

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
1000.00	0.58	9.85	38.31	31.32	30.87	23.36
1100.00	0.63	9.53	38.19	30.16	30.58	22.92
1200.00	0.68	9.34	37.62	29.39	30.42	22.73
1260.00	0.70	9.23	36.96	29.10	30.38	22.75
1280.00	0.72	9.26	36.64	29.01	30.40	22.78
1315.00	0.70	9.22	36.26	28.90	30.39	22.86
1390.00	0.74	9.25	35.35	28.76	30.40	23.13
1475.00	0.74	9.27	34.18	28.76	30.40	23.66
1600.00	0.72	9.47	31.97	28.71	30.43	24.84
1700.00	0.72	9.78	29.69	27.81	30.57	26.16



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

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Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS		
				IN	OUT	CPL
1000.0	0.58	9.85	38.31	31.32	30.87	23.36
1025.0	0.59	9.75	38.30	30.98	30.79	23.23
1050.0	0.62	9.69	38.34	30.69	30.71	23.11
1075.0	0.63	9.63	38.21	30.42	30.62	23.00
1100.0	0.63	9.53	38.19	30.16	30.58	22.92
1125.0	0.64	9.46	38.05	29.92	30.54	22.85
1150.0	0.66	9.42	37.90	29.71	30.51	22.80
1175.0	0.68	9.38	37.71	29.54	30.47	22.76
1200.0	0.68	9.34	37.62	29.39	30.42	22.73
1225.0	0.67	9.28	37.29	29.26	30.39	22.73
1250.0	0.68	9.22	37.02	29.12	30.38	22.75
1255.0	0.68	9.23	37.00	29.12	30.39	22.75
1260.0	0.70	9.23	36.96	29.10	30.38	22.75
1265.0	0.70	9.23	36.84	29.08	30.38	22.77
1270.0	0.71	9.24	36.75	29.05	30.37	22.77
1275.0	0.72	9.25	36.81	29.04	30.38	22.78
1280.0	0.72	9.26	36.64	29.01	30.40	22.78
1285.0	0.72	9.26	36.65	28.98	30.39	22.79
1290.0	0.72	9.26	36.58	28.97	30.40	22.81
1295.0	0.72	9.26	36.48	28.96	30.40	22.82
1300.0	0.72	9.25	36.54	28.94	30.39	22.83
1315.0	0.70	9.22	36.26	28.90	30.39	22.86
1330.0	0.68	9.18	36.12	28.85	30.39	22.90
1345.0	0.69	9.16	35.89	28.82	30.41	22.96
1360.0	0.72	9.18	35.68	28.80	30.41	23.01
1375.0	0.74	9.21	35.53	28.78	30.41	23.07
1390.0	0.74	9.25	35.35	28.76	30.40	23.13
1405.0	0.71	9.23	35.06	28.76	30.40	23.21
1420.0	0.69	9.20	34.99	28.74	30.39	23.30
1435.0	0.69	9.18	34.77	28.74	30.40	23.39
1450.0	0.71	9.20	34.50	28.75	30.39	23.49
1475.0	0.74	9.27	34.18	28.76	30.40	23.66
1500.0	0.71	9.30	33.83	28.76	30.43	23.85
1525.0	0.70	9.31	33.41	28.77	30.43	24.08
1550.0	0.71	9.35	32.93	28.75	30.42	24.32
1575.0	0.72	9.40	32.48	28.74	30.42	24.57
1600.0	0.72	9.47	31.97	28.71	30.43	24.84
1625.0	0.69	9.54	31.53	28.59	30.47	25.13
1650.0	0.67	9.58	31.00	28.41	30.51	25.47
1675.0	0.71	9.66	30.41	28.14	30.50	25.81
1700.0	0.72	9.78	29.69	27.81	30.57	26.16

REV. X1
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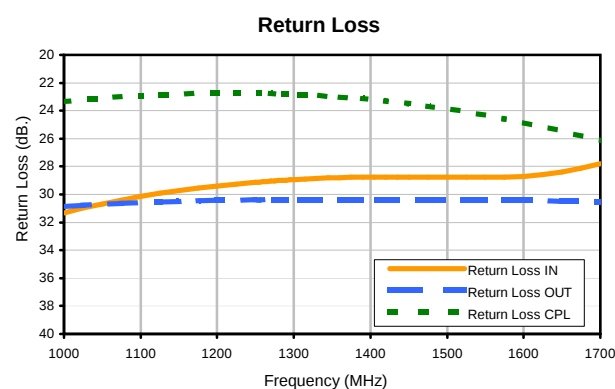
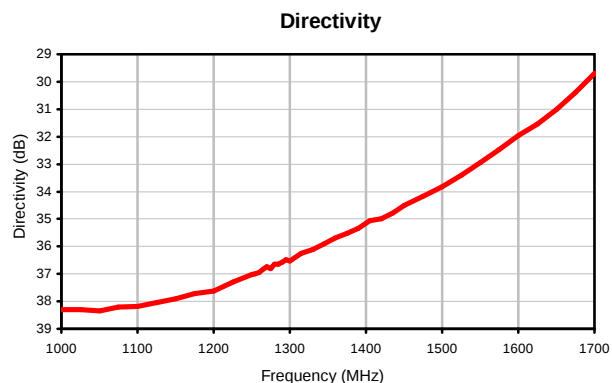
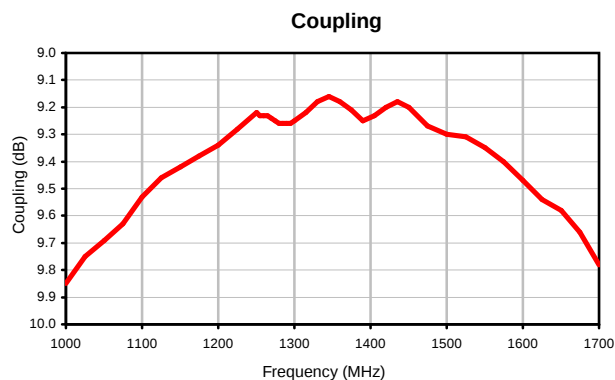
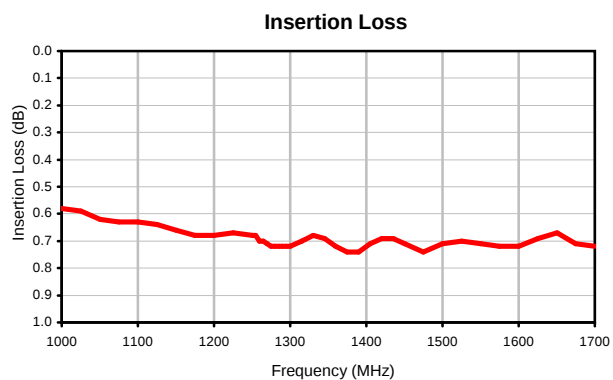
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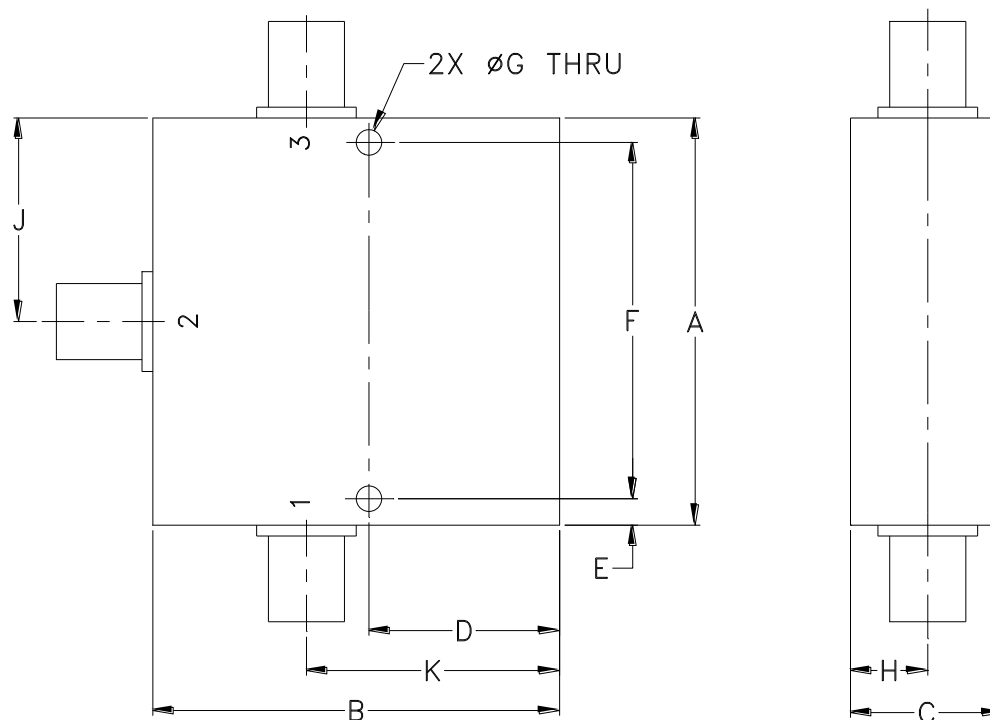
Typical Performance Curves

ZADC-10-17



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.



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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