

DC Pass

Bi-Directional Coupler

ZBDC40-1450W-S+

50Ω Up to 50W 550 to 1450 MHz

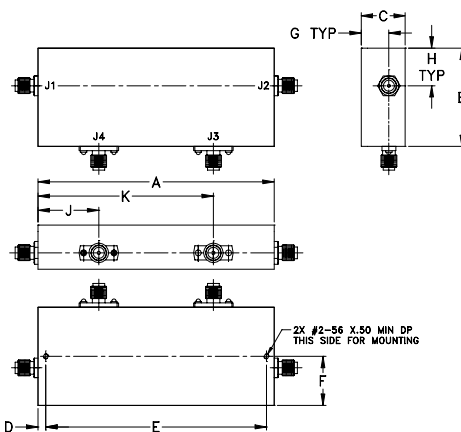
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	2.5A
Permanent damage may occur if any of these limits are exceeded.	

Coaxial Connections

INPUT	J1
OUTPUT	J2
COUPLED (forward)	J4
COUPLED (reverse)	J3

Outline Drawing



Outline Dimensions (inch mm)

A	B	C	D	E	F
3.75	1.56	.70	.125	3.500	.780
5.25	39.62	17.78	3.18	88.90	19.81
G	H	J	K	wt	
.44	.60	.97	2.78	grams	
1.18	15.24	24.64	70.61	130.0	

Features

- wide frequency range, 550 to 1450 MHz
- good coupling flatness, ± 0.2 dB typ over 800-1000 MHz
- high directivity, 25 dB typ.
- very good return loss, VSWR 1.1:1 typ.
- high power, up to 50W
- very low coupling temperature variation, ± 0.1 dB typ.
- DC current through input to output 2.5A Max. at 50watt RF input power.

Applications

- cellular
- lab use

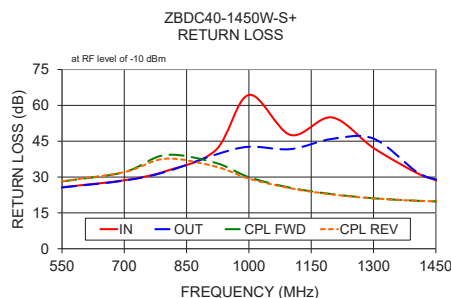
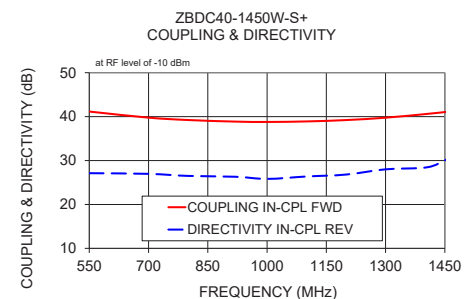
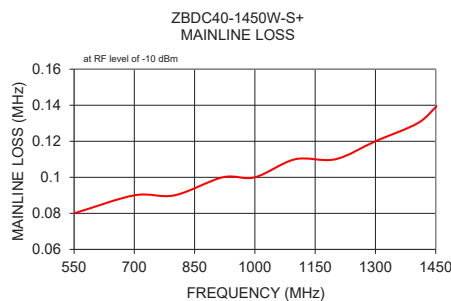
Bi-Directional Coupler Electrical Specifications

FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT (W)
	Nom.	Flatness	Typ.	Max.	Typ.	Min.		
550-1450	39.9 $\pm$ 1.5	$\pm$ 1.5	0.15	0.40	24	18	1.12	50
800-1000	39.9 $\pm$ 1.5	$\pm$ 0.40	0.11	0.30	25	20	1.07	50

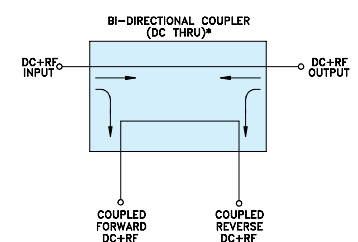
1. Mainline loss includes theoretical power loss at coupled port.

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB)		Directivity (dB)		Return Loss (dB)			
		In-Cpl Fwd	Out-Cpl Rev	Out-Cpl Fwd	In-Cpl Rev	In	Out	Cpl Fwd	Cpl Rev
550.00	0.08	41.16	41.16	26.60	27.12	25.73	25.62	28.14	28.21
700.00	0.09	39.77	39.79	25.76	26.97	28.67	28.52	32.06	32.07
800.00	0.09	39.23	39.22	25.13	26.50	32.49	32.19	39.25	37.68
920.00	0.10	38.87	38.87	24.80	26.31	41.24	39.39	35.92	34.36
1000.00	0.10	38.79	38.81	25.22	25.82	64.37	42.67	29.94	29.34
1100.00	0.11	38.91	38.92	25.09	26.37	47.62	41.68	25.51	25.29
1200.00	0.11	39.22	39.25	25.80	26.81	54.95	45.96	22.85	22.72
1300.00	0.12	39.76	39.78	25.84	28.00	42.16	46.08	21.11	21.07
1405.00	0.13	40.62	40.59	26.30	28.46	31.64	32.03	20.07	20.06
1455.00	0.14	41.09	41.09	27.96	30.25	28.42	28.66	19.80	19.83



Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITHOUT INTERNAL TRANSFORMERS AND RESISTORS.

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



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Bi-Directional Coupler

ZBDC40-1450W+

Typical Performance Data

FREQ. (MHz)	INSERTION LOSS (dB) IN-OUT	COUPLING (dB)		DIRECTIVITY (dB)		RETURN LOSS (dB)			
		IN-FWD	OUT-REV	IN-REV	OUT-FWD	IN	OUT	FWD	REV
100.0	0.02	54.75	54.70	25.58	26.49	33.44	33.38	36.33	36.26
250.0	0.06	47.06	47.06	27.83	26.73	27.29	26.86	29.47	29.18
400.0	0.07	43.39	43.39	27.33	26.24	25.29	24.98	27.65	27.40
550.0	0.08	41.16	41.16	27.12	26.60	25.73	25.62	28.14	28.21
700.0	0.09	39.77	39.79	26.97	25.76	28.67	28.52	32.06	32.07
750.0	0.09	39.45	39.48	26.68	25.84	30.33	30.06	34.57	34.52
800.0	0.09	39.23	39.22	26.50	25.13	32.49	32.19	39.25	37.68
840.0	0.09	39.07	39.06	25.99	25.35	34.70	34.36	43.74	38.98
880.0	0.09	38.94	38.93	26.61	24.91	37.51	36.59	40.25	37.28
920.0	0.10	38.87	38.87	26.31	24.80	41.24	39.39	35.92	34.36
960.0	0.10	38.81	38.82	25.49	24.86	47.19	41.86	32.56	31.53
1000.0	0.10	38.79	38.81	25.82	25.22	64.37	42.67	29.94	29.34
1100.0	0.11	38.91	38.92	26.37	25.09	47.62	41.68	25.51	25.29
1200.0	0.11	39.22	39.25	26.81	25.80	54.95	45.96	22.85	22.72
1300.0	0.12	39.76	39.78	28.00	25.84	42.16	46.08	21.11	21.07
1380.0	0.13	40.37	40.38	28.59	26.64	33.50	34.14	20.28	20.21
1405.0	0.13	40.62	40.59	28.46	26.30	31.64	32.03	20.07	20.06
1430.0	0.13	40.84	40.83	28.89	26.90	29.93	30.26	19.92	19.93
1455.0	0.14	41.09	41.09	30.25	27.96	28.42	28.66	19.80	19.83
1480.0	0.14	41.39	41.34	31.02	27.75	27.07	27.22	19.71	19.75
1505.0	0.14	41.66	41.68	31.75	29.79	25.86	25.91	19.66	19.69
1530.0	0.15	41.98	42.00	32.10	29.48	24.78	24.81	19.69	19.69
1555.0	0.15	42.35	42.35	34.98	30.52	23.80	23.79	19.79	19.77
1580.0	0.16	42.73	42.70	35.33	31.03	22.88	22.88	19.91	19.87
1605.0	0.16	43.12	43.08	35.74	32.40	22.03	21.99	20.01	19.97
1630.0	0.17	43.54	43.54	40.35	34.13	21.22	21.15	20.15	20.16
1655.0	0.18	43.99	44.00	47.97	37.84	20.50	20.42	20.36	20.41
1680.0	0.19	44.47	44.49	46.95	38.88	19.93	19.81	20.70	20.72
1705.0	0.19	45.04	45.09	39.38	49.17	19.36	19.24	21.05	21.04
1730.0	0.20	45.61	45.63	33.86	47.57	18.80	18.67	21.40	21.41
1755.0	0.21	46.28	46.27	34.17	37.21	18.27	18.15	21.80	21.82
1780.0	0.22	46.95	46.99	28.81	34.36	17.78	17.67	22.37	22.30
1805.0	0.23	47.73	47.79	26.08	31.54	17.36	17.23	23.04	22.91
1830.0	0.24	48.60	48.64	24.92	26.42	17.01	16.85	23.82	23.72
1855.0	0.25	49.50	49.58	22.48	23.44	16.68	16.51	24.67	24.56
1880.0	0.26	50.53	50.64	20.42	22.15	16.38	16.21	25.70	25.51
1905.0	0.26	51.92	51.87	18.45	19.30	16.12	15.96	26.86	26.52
1930.0	0.27	53.33	53.25	16.15	16.65	15.90	15.73	28.20	27.72
1955.0	0.27	54.96	54.98	13.65	14.50	15.70	15.53	29.86	29.12
1980.0	0.28	57.22	57.26	11.08	10.90	15.55	15.37	32.25	30.83
1990.0	0.28	58.17	57.92	9.93	9.96	15.50	15.33	33.35	31.57

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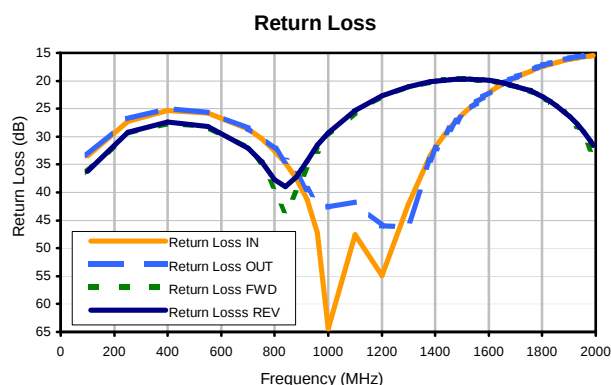
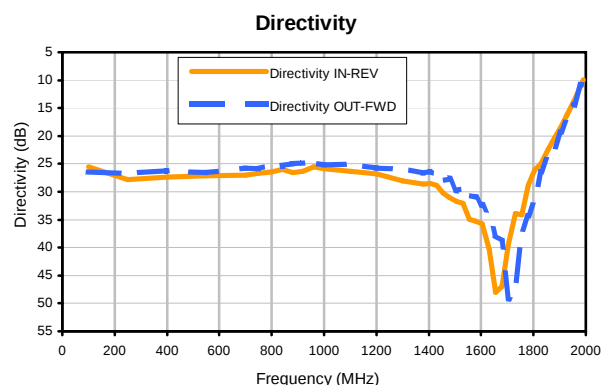
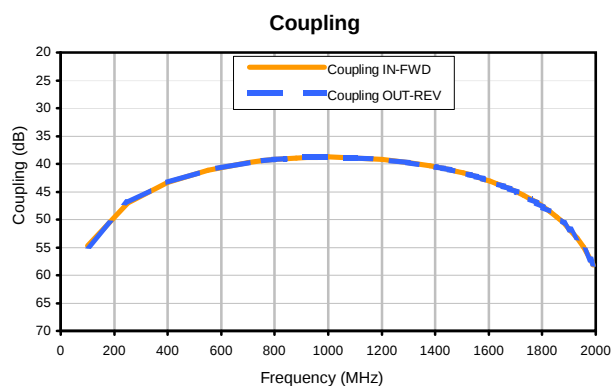
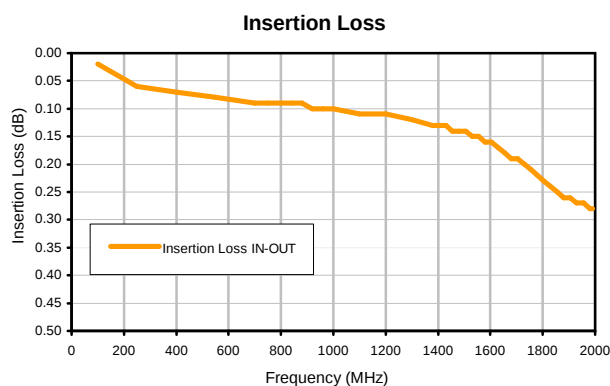
The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see



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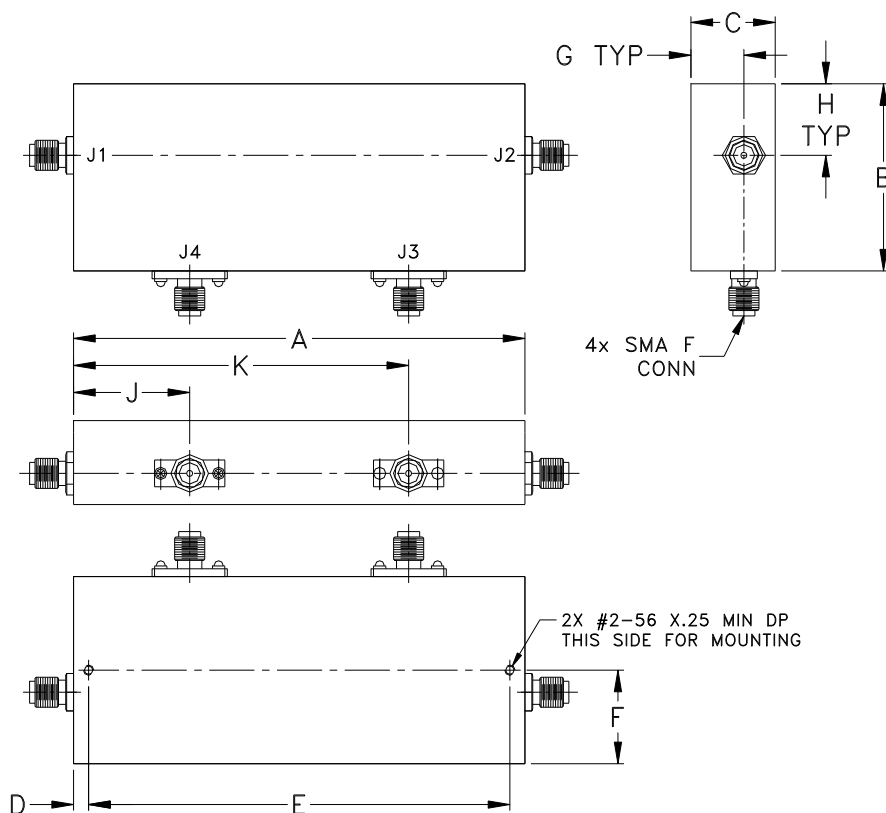
Typical Performance Curves

ZBDC40-1450W+



Outline Dimensions

HT1180



CASE #	A	B	C	D	E	F	G	H	J	K	WT. GRAM
HT1180	3.75 (95.25)	1.56 (39.62)	.70 (17.78)	.125 (3.18)	3.500 (88.90)	.780 (19.81)	.44 (11.18)	.60 (15.24)	.97 (24.64)	2.78 (70.61)	130.0

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

Notes:

1. Case material: Aluminum alloy.
2. Case finish:

For RoHS Case Styles: Clear Chemical conversion coating, non-chrome or trivalent chrome based.



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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