Engineering Development Model

Bi-Directional Coupler ZFBDC20-ED13225

Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability.
At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.

Please click "Back", and then click "Contact Us" for Applications support.

CASE STYLE : JD1252

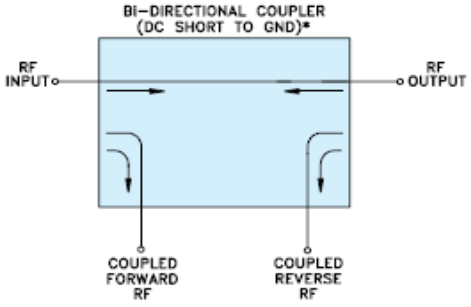
ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		0.5		200	MHz
Coupling	**Nominal**		20 ± 1		dB
	Flatness		± 0.15		dB
Mainline Loss *	**0.5-5 MHz**		0.10		dB
	5-100 MHz		0.15		dB
	100-200 MHz		0.20		dB
Directivity	**0.5-5 MHz**		46		dB
	5-100 MHz		31		dB
	100-200 MHz		14		dB
VSWR	**.5-200 MHz**		1.1		(:1)
RF Power Input (1)	**.5-200 MHz**			10	W
	10-60 MHz			25	

(1) Over +55°C derate linearly to 50% of rating at 100°C.
Note: * Mainline loss includes theoretical coupled power loss of 0.04 dB at 20 dB coupling.

MAXIMUM RATINGS	
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C

COAXIAL CONNECTIONS	
INPUT	1
OUTPUT	2
COUPLED FORWARD	4
COUPLED REVERSE	3

Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) THAT ROUTES DC FROM RF PORTS TO GROUND.

Bi-Directional Coupler ZFBDC20-ED13225

Typical Performance Data

FREQ. (MHz)	INSERTION LOSS (dB)	COUPLING (dB)		DIRECTIVITY (dB)		RETURN LOSS (dB)			
	IN-OUT	IN-FWD	OUT-REV	IN-REV	OUT-FWD	IN	OUT	FWD	REV
0.5	0.08	20.08	20.02	33.39	33.55	28.06	28.29	27.01	27.92
1.0	0.08	20.08	20.03	40.91	40.68	33.84	34.40	30.40	32.48
1.2	0.08	20.09	20.03	43.04	42.83	36.16	37.29	31.22	33.89
1.4	0.09	20.09	20.03	45.26	44.48	37.30	39.17	31.54	34.46
1.5	0.09	20.09	20.02	45.74	45.51	37.58	39.58	31.57	34.49
1.7	0.09	20.10	20.03	47.57	47.17	37.55	39.84	31.46	34.46
1.9	0.09	20.10	20.02	48.86	49.04	37.46	39.77	31.54	34.35
2.0	0.09	20.10	20.03	50.24	50.38	37.37	39.79	31.53	34.31
3.0	0.10	20.11	20.03	55.14	53.73	38.59	41.68	31.76	34.85
4.0	0.10	20.11	20.03	51.62	51.67	39.06	42.62	32.02	35.19
5.0	0.10	20.11	20.03	48.68	47.05	39.54	43.04	32.12	35.46
10.0	0.10	20.12	20.05	40.02	39.21	39.93	42.19	32.38	35.79
15.0	0.10	20.12	20.05	35.87	35.01	39.54	40.85	32.54	35.88
20.0	0.10	20.13	20.06	32.98	32.28	38.88	39.77	32.57	35.75
25.0	0.10	20.13	20.07	30.86	30.27	38.35	38.54	32.51	35.45
30.0	0.11	20.14	20.08	29.14	28.66	37.76	37.50	32.42	35.08
35.0	0.11	20.14	20.08	27.72	27.33	37.34	36.56	32.15	34.64
40.0	0.11	20.14	20.09	26.48	26.16	36.85	35.71	32.07	34.15
45.0	0.12	20.14	20.10	25.38	25.16	36.49	34.87	31.76	33.67
50.0	0.12	20.14	20.11	24.42	24.21	36.01	34.20	31.56	33.18
55.0	0.12	20.14	20.11	23.54	23.38	35.56	33.51	31.27	32.62
60.0	0.13	20.13	20.12	22.74	22.58	35.07	32.95	30.90	32.05
80.0	0.14	20.12	20.15	20.13	19.87	32.84	31.13	29.42	30.13
100.0	0.15	20.09	20.18	17.94	17.68	30.73	29.56	28.03	28.51
120.0	0.17	20.06	20.21	16.08	16.01	29.39	27.93	27.02	27.32
140.0	0.19	20.02	20.23	14.52	14.59	28.40	26.53	26.22	26.30
160.0	0.20	19.97	20.25	13.18	13.26	27.19	25.52	25.34	25.25
180.0	0.22	19.91	20.26	11.95	12.07	25.85	24.57	24.36	24.17
200.0	0.24	19.84	20.26	10.79	10.99	24.86	23.59	23.44	23.21

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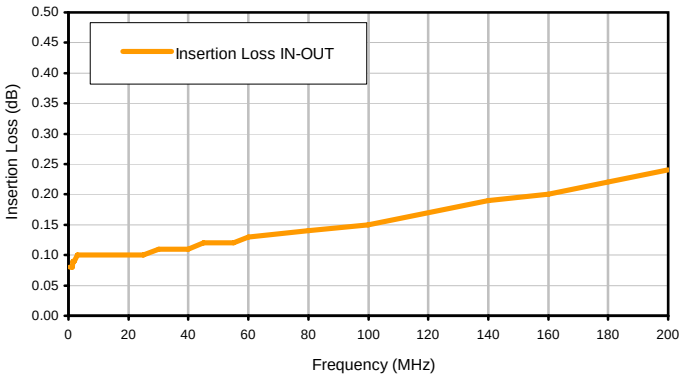
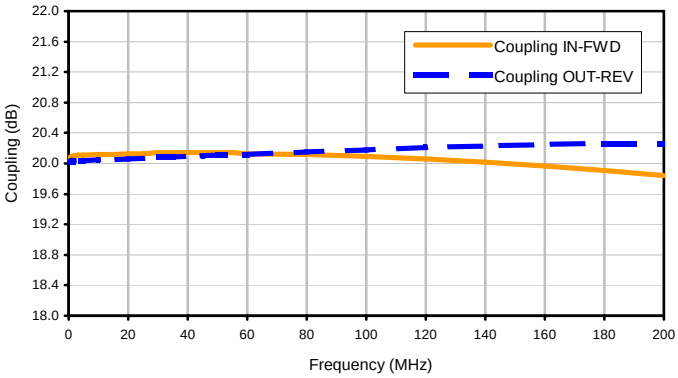
Typical Performance Curves

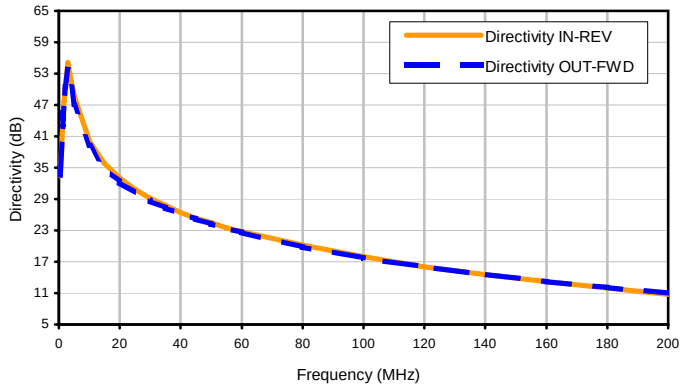
Insertion Loss



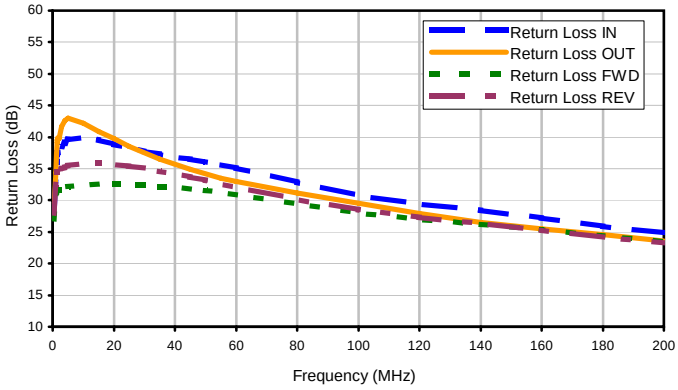
Coupling



Directivity



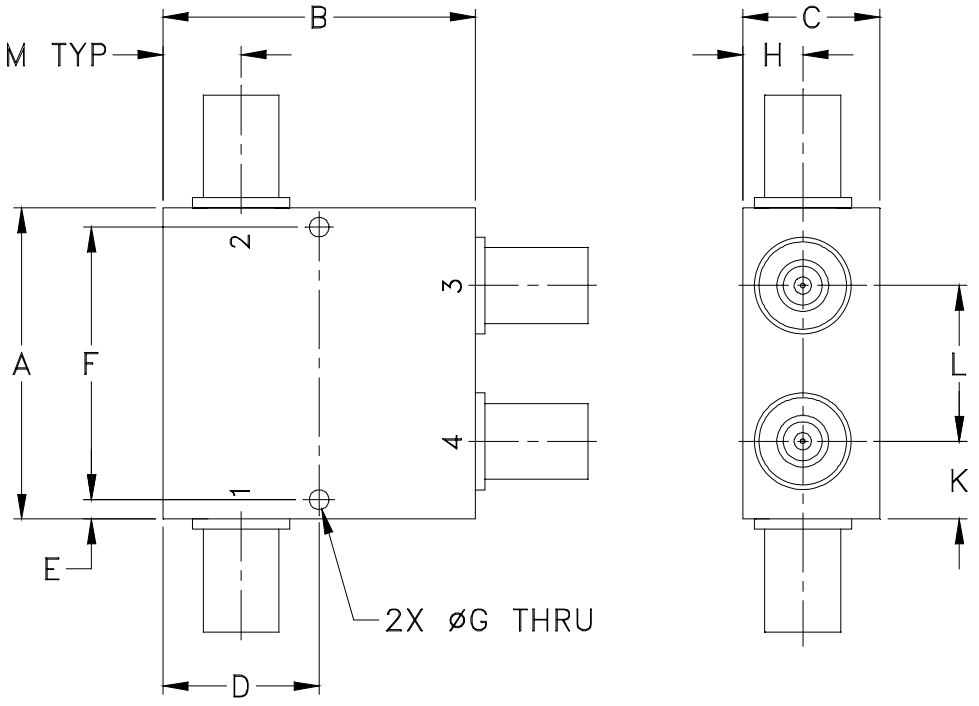
Return Loss



Case Style JD

JD1252

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	WT, GRAM
JD1252	2.00 (50.80)	2.00 (50.80)	0.88 (22.35)	1.000 (25.40)	0.13 (3.18)	1.750 (44.45)	0.125 (3.18)	0.38 (9.65)	-- --	0.50 (12.70)	1.00 (25.40)	0.50 (12.70)	250.00

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