

Coaxial Directional Coupler

50Ω

1 to 1000 MHz

ZEDC-15-2B



Generic photo used for illustration purposes only

CASE STYLE: V37

Connectors Model
SMA ZEDC-15-2B

Maximum Ratings

Operating Temperature -55°C to 100°C

Storage Temperature -55°C to 100°C

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

Coaxial Connections

INPUT	1
OUTPUT	2
COUPLED	3

Features

- wideband, 1 to 1000 MHz
- excellent mainline loss, 0.8 dB typ.
- excellent directivity, 30 dB typ.
- rugged shielded case

Applications

- VHF/UHF
- instrumentation
- communication receivers & transmitters
- cellular

Directional Coupler Electrical Specifications

FREQ. RANGE (MHz)	COUPLING (dB)		MAINLINE LOSS¹ (dB)						DIRECTIVITY (dB)						VSWR (:1)	POWER INPUT (W)	
			L		M		U		L		M		U				
	f _L -f _U	Nom.	Flatness	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.
1-1000	15±0.5	±0.5	0.5	1.4	0.8	1.2	1.0	1.4	35	30	30	20	25	15	1.15	1.5	3.0

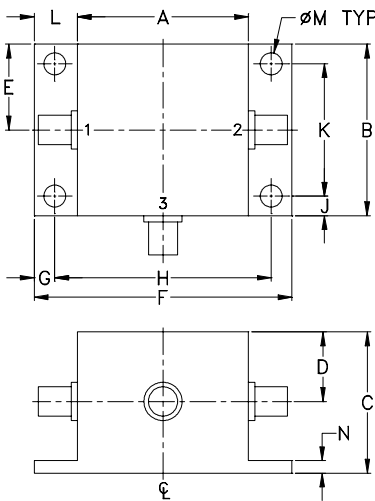
L = low range [f_L to $10 f_L$] M = mid range [$10 f_L$ to $f_U/2$] U = upper range [$f_U/2$ to f_U]

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
1.00	0.89	14.88	79.23	20.86	18.52	18.59
5.00	0.62	14.60	77.98	28.31	22.92	22.83
9.00	0.60	14.58	75.18	30.07	23.46	23.42
96.00	0.68	14.64	47.38	28.75	22.70	22.81
248.00	0.72	14.68	36.05	27.13	22.32	22.74
420.00	0.79	14.71	29.08	25.36	21.07	22.68
520.00	0.84	14.73	26.18	24.45	19.92	22.58
640.00	0.91	14.73	23.49	23.56	18.30	22.45
840.00	1.06	14.76	20.21	22.53	15.42	22.17
1000.00	1.15	14.70	18.59	22.05	13.20	21.93

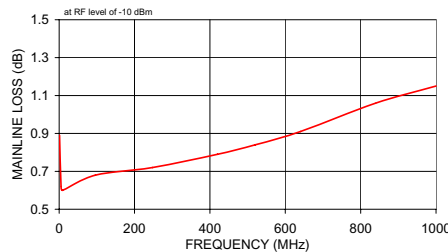
Outline Drawing



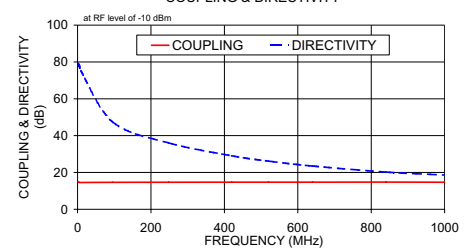
Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.83	.83	.75	.37	.42	1.25	.10
21.08	21.08	19.05	9.40	10.67	31.75	2.54
H	J	K	L	M	N	wt
1.050	.10	.640	.21	.106	.06	grams
26.67	2.54	16.26	5.33	2.69	1.52	22.0

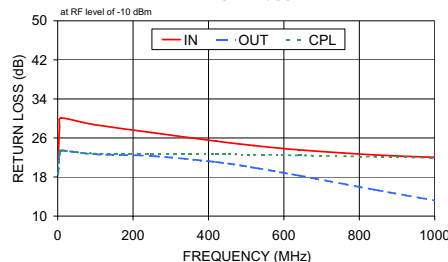
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MAINLINE LOSS



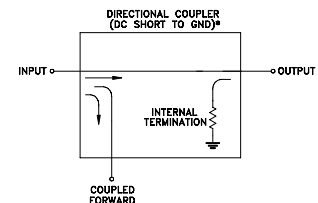
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COUPLING & DIRECTIVITY



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RETURN LOSS



Electrical Schematic



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

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.
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Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS		
				IN	OUT	CPL
1.0	0.89	14.88	79.23	20.86	18.52	18.59
2.0	0.74	14.72	87.59	23.91	20.66	20.63
3.0	0.67	14.64	93.71	25.94	21.85	21.78
4.0	0.64	14.62	75.32	27.34	22.53	22.44
5.0	0.62	14.60	77.98	28.31	22.92	22.83
6.0	0.62	14.59	77.58	28.99	23.15	23.08
7.0	0.60	14.58	72.54	29.47	23.31	23.24
8.0	0.61	14.58	79.08	29.81	23.40	23.34
9.0	0.60	14.58	75.18	30.07	23.46	23.42
10.0	0.60	14.58	72.39	30.23	23.50	23.47
20.0	0.61	14.60	66.02	30.38	23.38	23.42
58.0	0.66	14.63	53.23	29.20	22.83	22.92
96.0	0.68	14.64	47.38	28.75	22.70	22.81
134.0	0.69	14.66	43.67	28.35	22.63	22.76
172.0	0.70	14.66	40.53	27.96	22.55	22.74
210.0	0.71	14.67	38.35	27.58	22.46	22.75
248.0	0.72	14.68	36.05	27.13	22.32	22.74
286.0	0.73	14.68	34.16	26.73	22.13	22.73
324.0	0.74	14.69	32.57	26.34	21.92	22.74
362.0	0.76	14.70	31.09	25.93	21.62	22.71
400.0	0.77	14.70	29.78	25.55	21.27	22.69
420.0	0.79	14.71	29.08	25.36	21.07	22.68
440.0	0.80	14.72	28.44	25.16	20.87	22.66
460.0	0.81	14.71	27.88	24.96	20.65	22.63
480.0	0.81	14.71	27.35	24.78	20.41	22.61
500.0	0.82	14.72	26.71	24.62	20.16	22.60
520.0	0.84	14.73	26.18	24.45	19.92	22.58
540.0	0.85	14.73	25.68	24.29	19.66	22.56
560.0	0.85	14.72	25.26	24.13	19.40	22.54
580.0	0.87	14.72	24.73	23.98	19.13	22.51
600.0	0.89	14.73	24.26	23.84	18.86	22.50
640.0	0.91	14.73	23.49	23.56	18.30	22.45
680.0	0.94	14.74	22.67	23.31	17.73	22.40
720.0	0.97	14.75	21.95	23.08	17.16	22.34
760.0	0.99	14.74	21.35	22.87	16.58	22.28
800.0	1.01	14.74	20.75	22.70	15.99	22.23
840.0	1.06	14.76	20.21	22.53	15.42	22.17
880.0	1.04	14.70	19.84	22.37	14.85	22.11
920.0	1.13	14.75	19.23	22.27	14.29	22.06
960.0	1.11	14.69	19.08	22.13	13.74	21.98
1000.0	1.15	14.70	18.59	22.05	13.20	21.93

REV. X1

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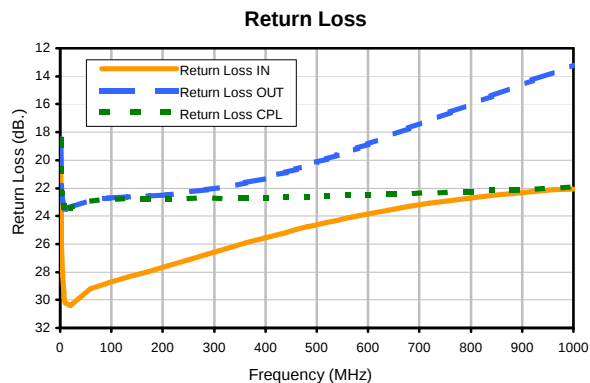
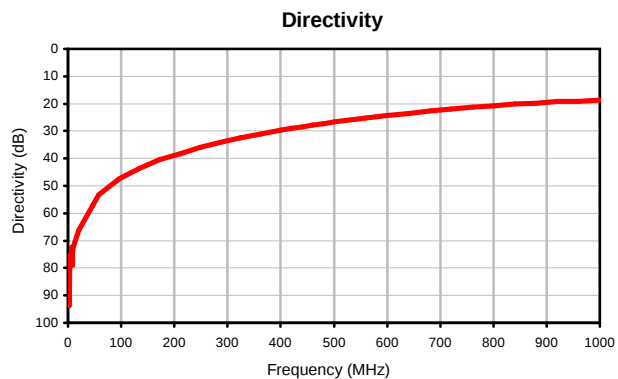
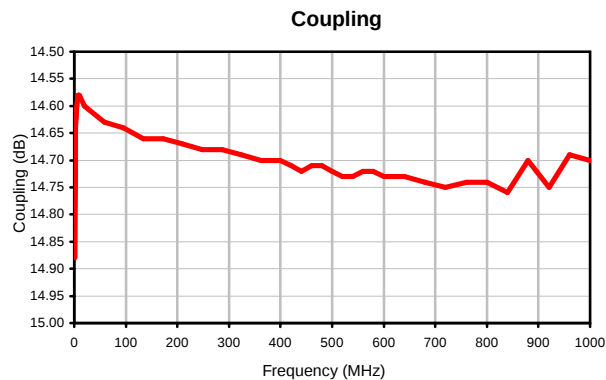
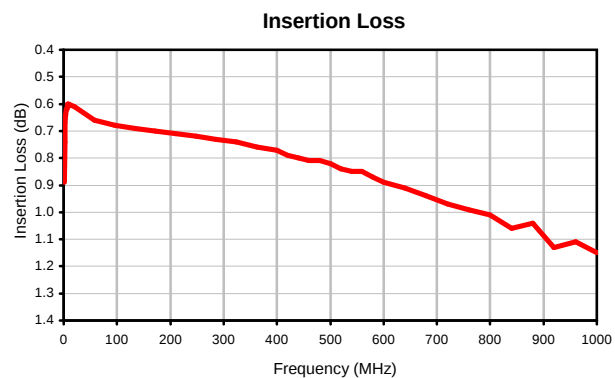
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Directional Coupler

Typical Performance Curves

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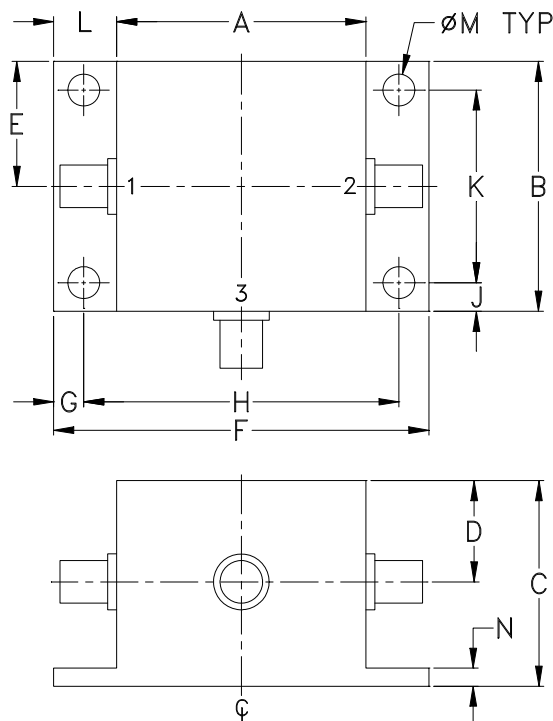
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Outline Dimensions

V37



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N	WT GRAMS
V37	.83 (21.08)	.83 (21.08)	.75 (19.05)	.37 (9.40)	.42 (10.67)	1.25 (31.75)	.10 (2.54)	1.050 (26.67)	.10 (2.54)	.640 (16.26)	.21 (5.33)	.106 (2.69)	.06 (1.52)	22.0

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

Notes:

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



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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