

# Coaxial Directional Coupler

50Ω

20 to 2000 MHz

ZFDC-20-50+

## 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	3
OUTPUT	1
COUPLED	2

## Features

- very wideband, 20 to 2000 MHz
- excellent directivity, 25 dB typ.
- excellent mainline loss, 0.7 dB typ.
- rugged shielded case

## Applications

- cellular
- GPS
- instrumentation
- communication receivers & transmitters



CASE STYLE: K18

Connectors	Model
SMA	ZFDC-20-50-S+
BRACKET (OPTION "B")	

**+RoHS Compliant**

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

## Directional Coupler Electrical Specifications

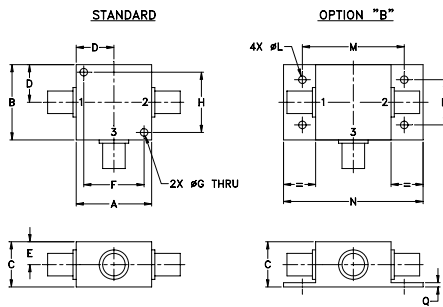
FREQ. RANGE (MHz)	COUPLING* (dB)		MAINLINE LOSS <sup>1</sup> (dB)						DIRECTIVITY (dB)			VSWR (:1)	POWER INPUT (W)				
	Nom.	Flatness	L		M		U		L		M		U	Typ.	L	MU	
			Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.		Min.				Typ.
20-2000	19.5±0.5	±0.8	0.8	1.3	0.7	1.3	1.0	1.6	30	20	25	20	22	10	1.25	1.0	1.0

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.

\* Above 1000 MHz, coupling flatness ±1 dB

## Outline Drawing



## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
1.25	1.25	.75	.63	.38	1.00	.125	1.000
31.75	31.75	19.05	16.00	9.65	25.40	3.18	25.40

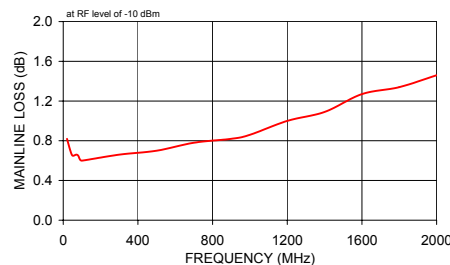
  

J	K	L	M	N	P	Q	wt
--	--	.125	1.688	2.18	.75	.07	grams
--	--	3.18	42.88	55.37	19.05	1.78	70.0

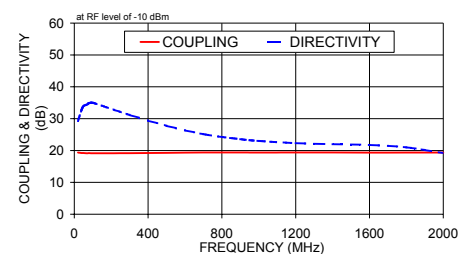
## Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
20.00	0.82	19.36	29.25	17.95	19.33	21.82
50.00	0.65	19.21	33.94	21.29	23.63	24.42
80.00	0.65	19.19	34.88	22.44	25.39	25.30
100.00	0.60	19.14	35.01	22.93	26.11	25.66
300.00	0.66	19.18	31.17	25.70	28.22	28.13
1000.00	0.86	19.37	23.02	24.12	32.91	28.50
1200.00	1.00	19.40	22.32	20.46	32.70	24.27
1400.00	1.09	19.40	21.99	17.71	30.28	21.55
1600.00	1.27	19.35	21.75	15.67	27.28	19.50
1800.00	1.34	19.36	21.00	14.04	24.37	17.79
2000.00	1.46	19.37	19.19	12.70	21.84	16.24

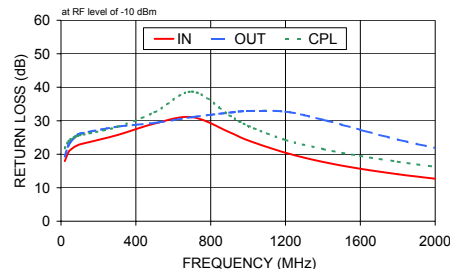
ZFDC-20-50+ MAINLINE LOSS



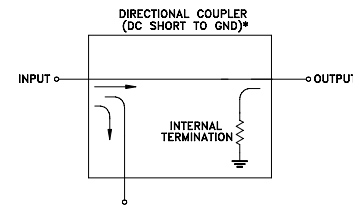
ZFDC-20-50+ COUPLING & DIRECTIVITY



ZFDC-20-50+ RETURN LOSS



## Electrical Schematic



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

## Notes

- 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.
- 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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