

# Coaxial Bi-Directional Coupler

50Ω Up to 25W 30 to 400 MHz

ZFDC-20-1H+  
ZFDC-20-1H



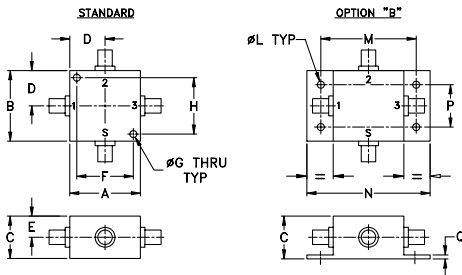
## Maximum Ratings

Operating Temperature	-55°C to 50°C
Storage Temperature	-55°C to 100°C

## Coaxial Connections

INPUT	S
OUTPUT	1
COUPLED (forward)	3
COUPLED (reverse)	2

## Outline Drawing



## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
1.25	1.25	.75	.63	.38	1.000	.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	75.0

For option "B" with N-type connectors, dimension "C" increases to 0.94 inches.

## Features

- high power, up to 25W
- wideband, 30 to 400 MHz
- excellent directivity, 30 dB typ.
- low mainline loss, 0.15 dB typ.
- rugged shielded case

## Applications

- VHF/UHF
- instrumentation
- communication receivers & transmitters
- power leveling

BNC version shown

CASE STYLE: J17

Connectors	Model	Price	Qty.
BNC	ZFDC-20-1H(+)	\$58.95	(1-9)
SMA	ZFDC-20-1H-S	\$63.95	(1-9)
N-TYPE	ZFDC-20-1H-N	\$63.95	(1-9)
BRACKET (OPTION "B")		\$2.50	(1+)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

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

## Bi-Directional Coupler Electrical Specifications

FREQ. (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
f <sub>L</sub> -f <sub>U</sub>			Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Max.
30-400	20.5±0.5	±0.4	0.15	0.4	0.15	0.4	0.3	0.4	30	25	30	25	30	23	1.2	25	25

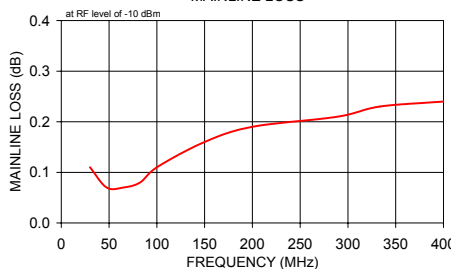
L= 30-100 MHz M= 100-200 MHz U= 200-400 MHz

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

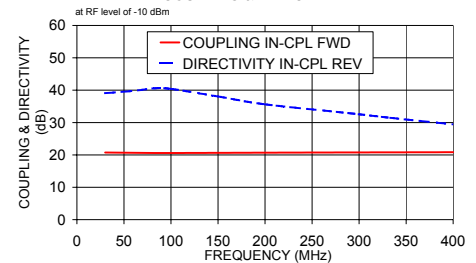
## Typical Performance Data

Frequency (MHz)	Mainline Loss (dB)		Coupling (dB)		Directivity (dB)		Return Loss (dB)			
	In-Out	In-Cpl Fwd	Out-Cpl Rev	Out-Cpl Fwd	In-Cpl Rev	In	Out	Cpl Fwd	Cpl Rev	
30.00	0.11	20.74	20.73	36.33	39.08	17.88	17.93	17.83	17.78	
47.50	0.07	20.68	20.66	36.66	39.46	21.75	21.84	22.02	21.88	
65.00	0.07	20.63	20.62	36.97	39.93	24.43	24.65	25.33	25.13	
82.50	0.08	20.59	20.58	37.14	40.58	26.31	27.05	28.32	28.10	
100.00	0.11	20.59	20.58	37.19	40.42	27.24	28.65	30.88	30.36	
150.00	0.16	20.63	20.62	38.74	38.06	27.92	30.48	33.62	34.39	
200.00	0.19	20.69	20.67	36.80	35.64	29.69	30.30	33.78	39.07	
288.89	0.21	20.77	20.74	33.49	32.92	29.81	29.10	30.60	35.64	
333.33	0.23	20.80	20.77	31.88	31.46	29.73	28.43	28.85	31.36	
400.00	0.24	20.83	20.80	29.81	29.45	28.38	27.54	26.14	26.41	

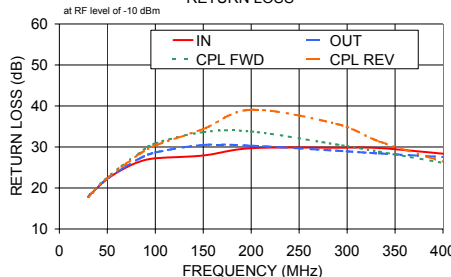
ZFDC-20-1H MAINLINE LOSS



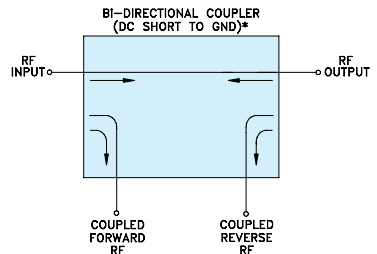
ZFDC-20-1H COUPLING & DIRECTIVITY



ZFDC-20-1H RETURN LOSS



## Electrical Schematic



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

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