

# Coaxial Directional Coupler

50Ω

0.2 to 250 MHz

ZDC-20-3



CASE STYLE: M22

Connectors Model  
 BNC ZDC-20-3  
 BRACKET (OPTION "B")  
 BRACKET (OPTION "BR")

## 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	2
COUPLED	1

## Features

- excellent directivity, 33 dB typ.
- excellent mainline loss, 0.25 dB typ.
- rugged shielded case

## Applications

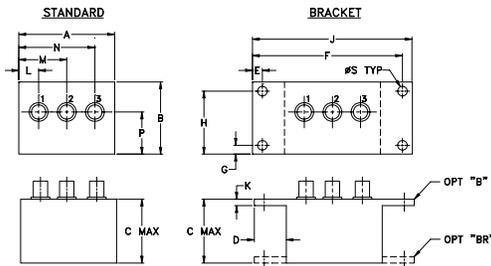
- HF/VHF/UHF
- instrumentation
- communication receivers & transmitters
- amateur radio

## 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.	Min.				
0.2-250	19.5±0.5	±0.5	0.35	0.6	0.25	0.5	0.35	0.6	36	30	33	25	25	20	1.2	1.5	4.0	

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.

## Outline Drawing



## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
2.25	1.38	1.24	.50	.150	3.100	.138	1.238
57.15	35.05	31.50	12.70	3.81	78.74	3.51	31.45

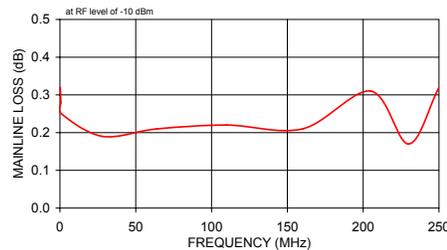
  

J	K	L	M	N	P	S	wt
3.25	.10	.40	1.15	1.86	.64	.150	grams
82.55	2.54	10.16	29.21	47.24	16.26	3.81	74.0

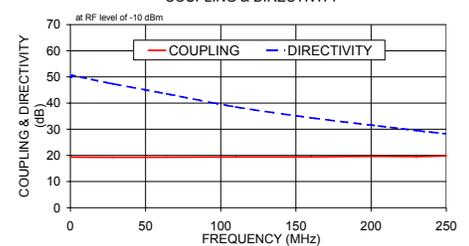
## Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
0.20	0.32	19.34	50.22	21.46	21.09	20.80
0.60	0.28	19.37	49.85	28.15	26.69	26.38
1.00	0.25	19.33	50.58	30.85	28.75	28.35
28.00	0.19	19.29	47.42	38.60	33.01	28.36
64.00	0.21	19.31	43.53	33.07	30.00	22.73
110.00	0.22	19.40	38.54	28.85	26.79	18.52
160.00	0.21	19.42	34.38	25.72	24.09	15.58
205.00	0.31	19.64	31.27	23.51	22.14	13.69
230.00	0.17	19.51	29.52	22.48	21.25	12.86
250.00	0.32	19.82	28.26	21.75	20.60	12.29

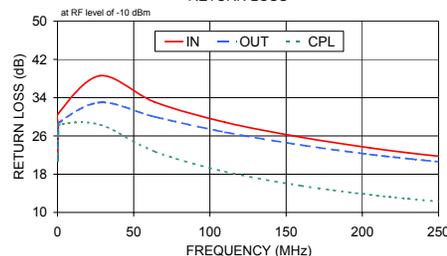
ZDC-20-3 MAINLINE LOSS



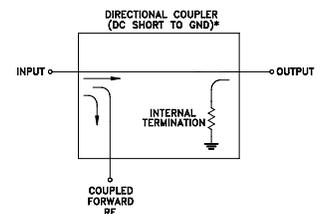
ZDC-20-3 COUPLING & DIRECTIVITY



ZDC-20-3 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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