

Coaxial Directional Coupler

50Ω

0.2 to 250 MHz

ZDC-20-3



Generic photo used for illustration purposes only

CASE STYLE: M22

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

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

Directional Coupler Electrical Specifications

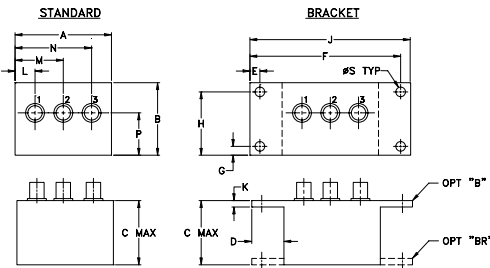
FREQ. RANGE (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)						DIRECTIVITY (dB)						POWER INPUT (W)		
	Nom.	Flatness	L*		M		U		L		M		U		L	MU	
f_L - f_U			Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Max.
0.2-250	19.5±0.5	±0.5	0.4	0.7	0.25	0.5	0.35	0.6	36	30	33	25	25	20	1.2	1.5	4.0

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.

*Insertion loss specification in L range may degrade up to 1.3 dB at cold temperature (-55°C)

Outline Drawing



Outline Dimensions (inch/mm)

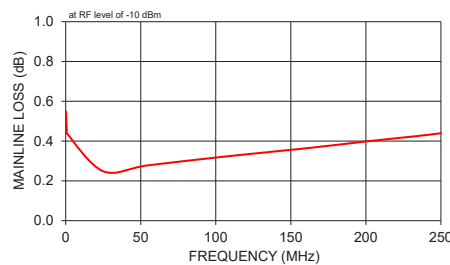
A	B	C	D	E	F	G	H
2.25	1.38	1.24	.50	.150	3.100	.138	1.238
57.15	35.05	31.50	12.70	3.81	78.74	3.51	31.45

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

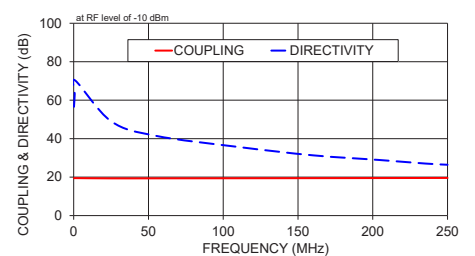
Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		Cpl
				In	Out	
0.20	0.55	19.44	56.58	13.62	13.51	15.46
0.70	0.45	19.48	63.29	22.56	21.82	23.65
1.00	0.44	19.49	70.24	24.20	23.19	24.81
25.00	0.25	19.36	49.06	37.88	32.87	32.35
55.00	0.28	19.37	41.46	37.37	33.05	31.41
110.00	0.33	19.42	35.69	33.20	31.89	29.14
160.00	0.36	19.47	31.34	31.12	31.19	26.99
205.00	0.40	19.52	28.88	29.08	29.95	25.45
235.00	0.43	19.56	27.07	28.20	29.65	24.48
250.00	0.44	19.58	26.44	27.74	29.23	24.00

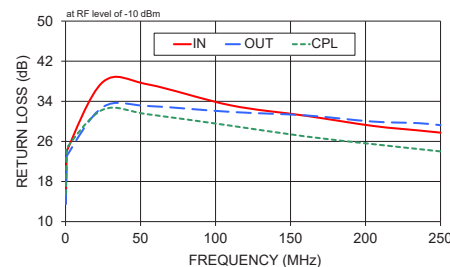
ZDC-20-3 MAINLINE LOSS



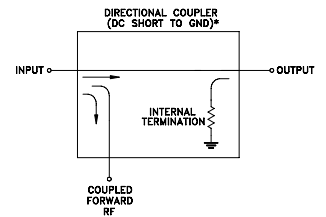
ZDC-20-3 COUPLING & DIRECTIVITY



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.
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