

Coaxial Directional Coupler

50Ω

20 to 3000 MHz

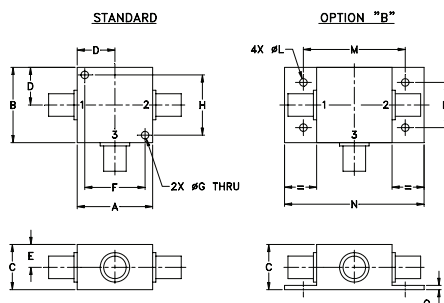
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

Coaxial Connections

INPUT	3
OUTPUT	1
COUPLED	2

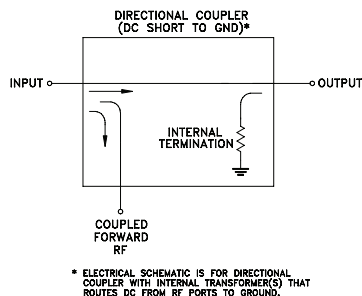
Outline Drawing



Outline Dimensions (inch/mm)

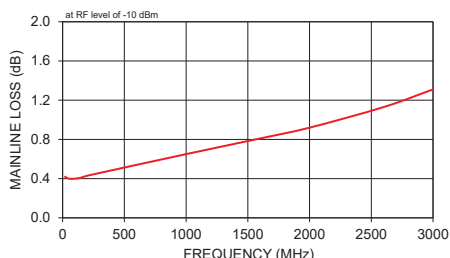
A	B	C	D	E	F	G	H
1.25	1.25	.75	.63	.38	1.00	.125	1.000
31.75	31.75	19.05	16.00	9.65	25.40	3.18	25.40
J	K	L	M	N	P	Q	wt
--	--	.125	1.688	2.18	.75	.07	grams
--	--	3.18	42.88	55.37	19.05	1.78	70.0

Electrical Schematic

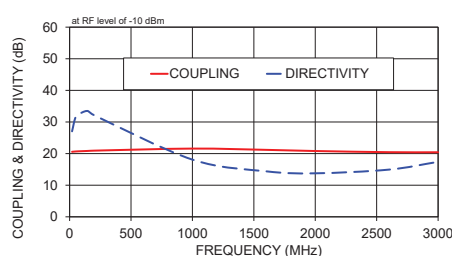


* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) THAT ROUTES DC FROM RF PORTS TO GROUND.

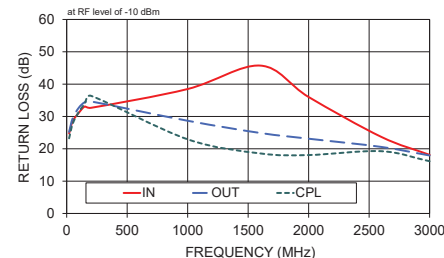
ZFDC-20-33-S+
MAINLINE LOSS



ZFDC-20-33-S+
COUPLING & DIRECTIVITY



ZFDC-20-33-S+
RETURN LOSS



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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ZFDC-20-33+



Generic photo used for illustration purposes only
CASE STYLE: K18

Connectors	Model
SMA	ZFDC-20-33-S+
N-TYPE	ZFDC-20-33-N+
BRACKET (OPTION "B")	

+RoHS Compliant

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

Features

- very wideband, 20 to 3000 MHz
- excellent directivity, 20 dB typ.
- excellent mainline loss, 1.0 dB typ.
- rugged shielded case

Applications

- cellular
- GPS
- instrumentation
- communication receivers & transmitters

Electrical Specifications at 25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		20	—	3000	MHz
Mainline Loss (above theoretical 0.05 dB)	20 200 1500 2500 3000	— — — — —	0.4 0.4 0.9 1.3 1.4	0.65 0.65 1.20 1.6 1.8	dB
Coupling	20 200 1500 2500 3000	19.9 20.3 19.8 19.0 19.0	20.5 20.9 21.3 20.7 20.9	21.1 21.5 22.8 22.4 22.7	dB
Coupling Flatness(±)	20 - 1500 1500 - 2500 2500 - 3000	— — —	0.5 0.4 0.1	1.0 0.8 0.6	dB
Directivity	20 200 1500 2500 3000	19 19 12 11 10	25 25 15 14 14	— — — — —	dB
Return Loss (Input)	20 - 1500 1500 - 3000	18 12	24 18	— —	dB
Return Loss (Output)	20 - 1500 1500 - 3000	18 12	24 18	— —	dB
Return Loss (Coupling)	20 - 1500 1500 - 3000	12 10	19 14	— —	dB
Input Power	20 - 1500 1500 - 3000	— —	— —	0.5 1.0	W

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB) In	Return Loss (dB) Out	Cpl
20.00	0.42	20.57	27.05	24.72	25.23	23.24
50.00	0.40	20.68	31.57	28.55	29.48	27.78
100.00	0.40	20.77	32.98	31.12	32.70	31.38
150.00	0.41	20.85	33.46	33.09	34.41	33.95
200.00	0.43	20.94	32.14	32.67	34.65	36.39
1000.00	0.65	21.59	18.10	38.49	28.67	22.93
1600.00	0.81	21.19	14.40	45.73	24.89	18.57
2000.00	0.92	20.82	13.77	36.01	23.12	18.07
2600.00	1.13	20.45	14.94	23.69	20.58	19.26
3000.00	1.31	20.43	17.39	18.12	17.93	16.15

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