

Coaxial Directional Coupler

50Ω

0.2 to 250 MHz

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

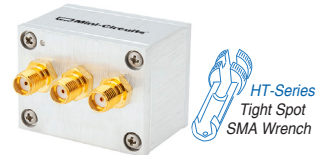
Features

- excellent mainline loss, 0.35 dB typ.
- excellent directivity, 33 dB typ.
- high input power, up to 4W max.
- rugged shielded case

Applications

- HF/VHF
- amateur radio
- instrumentation

ZMDC-20-3+



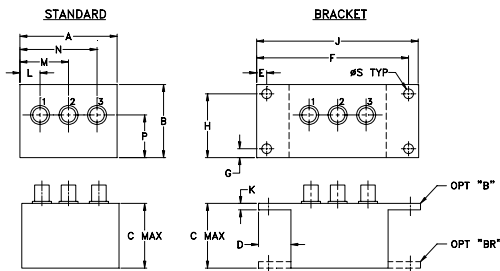
Generic photo used for illustration purposes only

CASE STYLE: M21
Connectors Model
SMA ZMDC-20-3+
BRACKET (OPTION "B")
BRACKET (OPTION "BR")

+RoHS Compliant

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

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
1.50	1.13	1.00	.50	.155	2.345	.138	.987
38.10	28.70	25.40	12.70	3.94	59.56	3.51	25.07

J	K	L	M	N	P	S	wt
2.50	.10	.31	.75	1.19	.66	.150	grams
63.50	2.54	7.87	19.05	30.23	16.76	3.81	40.0

Directional Coupler Electrical Specifications

FREQ.	COUPLING (dB)		MAINLINE LOSS ¹ (dB)						DIRECTIVITY (dB)							POWER INPUT (W)	
			L*		M		U		L		M		U			L	MU
	f _L -f _U	Nom.	Flat-ness	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.		Min.	Typ.
0.2-250	19.5±0.5	±0.5	0.4	0.7	0.35	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]

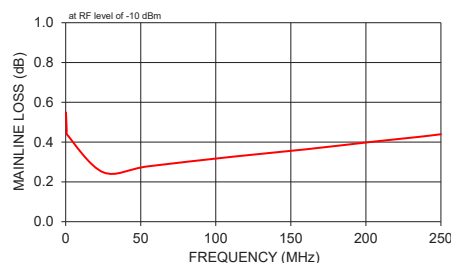
1. Mainline loss includes theoretical power loss at coupled port.

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

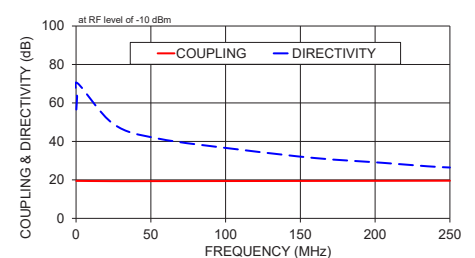
Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
0.20	0.55	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

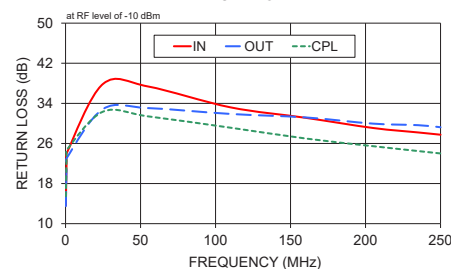
ZMDC-20-3+
MAINLINE LOSS



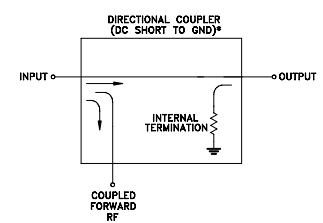
ZMDC-20-3+
COUPLING & DIRECTIVITY



ZMDC-20-3+
RETURN LOSS



Electrical Schematic



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

Notes

- A. 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.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



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