Plug-In

Bi-Directional Coupler

PDC-20-3BD+

50Ω 0.2 to 250 MHz

Generic photo used for illustration purposes only

CASE STYLE: A01

+RoHS Compliant

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

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.

Pin Connections

INPUT	1
OUTPUT	4
COUPLED (forward)	3
COUPLED (reverse)	6
GROUND	2,5,7,8
CASE GROUND	2,5,7,8

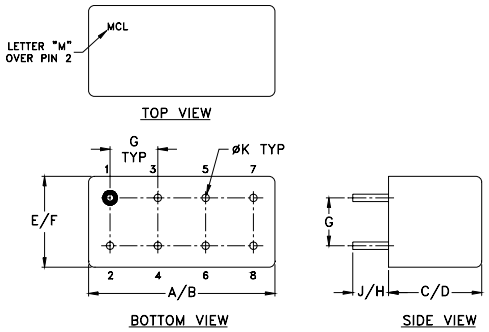
Features

- up to 4W power input
- excellent VSWR, 1.1:1 typ.
- very low mainline loss, 0.25 dB typ.
- excellent directivity, 40 dB typ.
- rugged welded construction, hermetically sealed

Applications

- HF/UHF
- communication receivers & transmmitters
- amateur radio

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F
.770	.800	.385	.400	.370	.400
19.56	20.32	9.78	10.16	9.40	10.16
G	**H**	**J**	**K**		**wt**
.200	.20	.14	.031		grams
5.08	5.08	3.56	0.79		5.2

Directional Coupler Electrical Specifications

FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS[1] (dB)						DIRECTIVITY (dB)						VSWR (:1)	POWER INPUT, W	
			L		M		U		L		M		U			L	MU
f_L-f_U	Nom.	Flatness	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Max.
0.2-250	19.5±0.5	±0.5	0.3	1.0	0.25	0.9	0.35	0.7	47	25	40	25	30	20	1.1	1.5	4.0

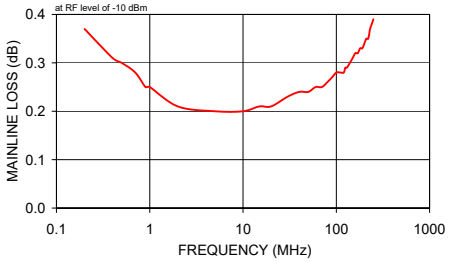
L = low range [f_L to 10 f_L] M = mid range [10 f_L to f_U/2] U= upper range [f_U/2 to f_U]

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

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
0.20	0.37	19.39	19.45	59.26	40.06	21.10	20.56	21.39	21.84
0.50	0.30	19.37	19.39	59.12	46.47	26.95	25.66	26.07	27.37
1.00	0.25	19.33	19.32	60.43	52.88	30.73	28.71	28.84	30.94
5.00	0.20	19.27	19.28	58.69	62.79	40.44	34.00	33.63	39.59
10.00	0.20	19.27	19.27	57.23	60.02	42.50	34.54	34.16	41.33
20.00	0.21	19.29	19.28	55.96	52.13	41.82	34.37	34.15	41.00
50.00	0.24	19.32	19.32	49.80	44.08	36.66	33.15	33.62	36.92
100.00	0.28	19.36	19.40	41.57	37.13	31.05	30.48	31.22	31.92
200.00	0.34	19.45	19.63	31.52	30.76	25.65	26.34	27.61	26.80
250.00	0.39	19.54	19.83	28.07	28.71	24.44	25.35	26.62	25.46

PDC-20-3BD+
MAINLINE LOSS



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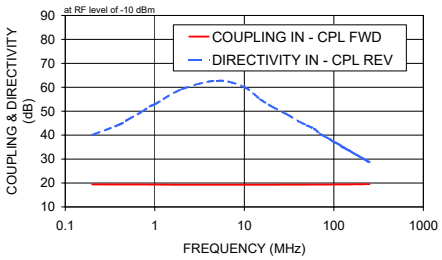
COUPLING & DIRECTIVITY



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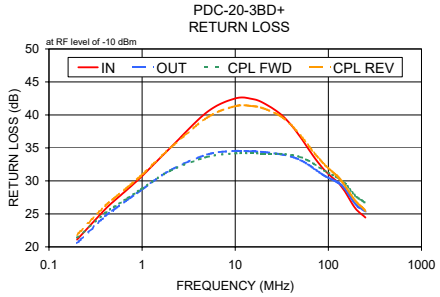
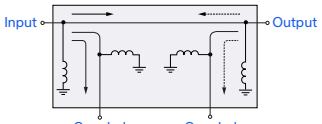
RETURN LOSS



Electrical Schematic

BI-DIRECTIONAL COUPLER*



*Electrical schematic is for Bi-Directional coupler with internal transformer(s) that routes DC from all 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-Circuit's 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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