

# Plug-In Bi-Directional Coupler

## PDC-20-3BD+ PDC-20-3BD

50Ω 0.2 to 250 MHz

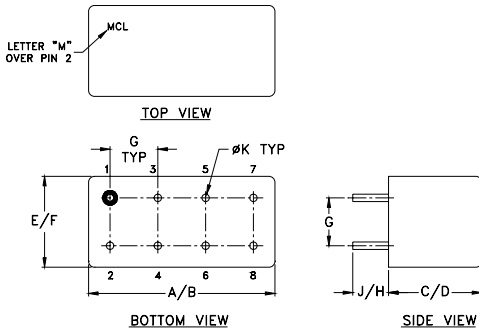
### Maximum Ratings

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.	

### Pin Connections

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

### Outline Drawing



### Outline Dimensions (inch/mm)

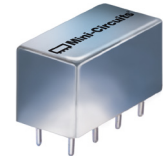
A	B	C	D	E	F
.770	.800	.385	.400	.370	.400
19.56	20.32	9.78	10.16	9.40	10.16
G	H	J	K	wt	
.200	.20	.14	.031	grams	
5.08	5.08	3.56	0.79	5.2	

### 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 & transmitters
- amateur radio



CASE STYLE: A01

### +RoHS Compliant

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

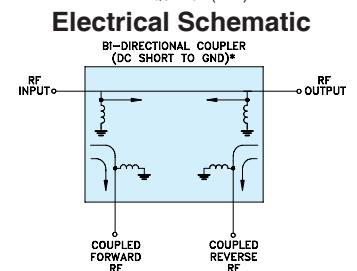
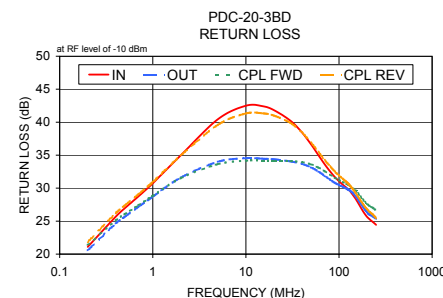
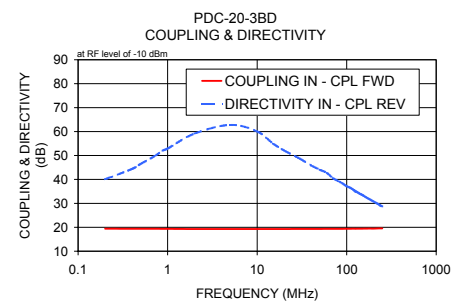
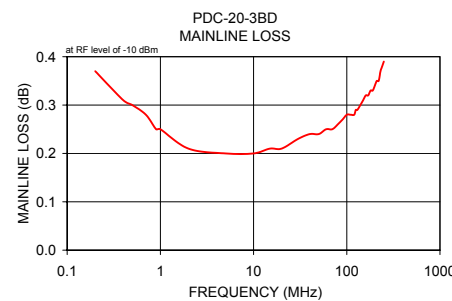
### Directional Coupler Electrical Specifications

FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS <sup>1</sup> (dB)						DIRECTIVITY (dB)						VSWR (:1)	POWER INPUT, W			
			L		M		U		L		M		U						
	Nom.	Flatness	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.		Typ.	Max.	Min.	Max.
$f_L$ - $f_U$																			
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	



\* ELECTRICAL SCHEMATIC IS FOR BI-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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