

# High Power Bi-Directional Coupler

50Ω 7dB Coupling DC Pass 1200 to 2500 MHz

BDCA-7-25+



CASE STYLE: DZ944

PRICE: \$5.95 ea. QTY (10-49)

**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

The +Suffix has been added in order to identify 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
DC Current	0.25A
Permanent damage may occur if any of these limits are exceeded.	

## Pin Connections

INPUT	1
OUTPUT	6
COUPLED (forward)	10
COUPLED (reverse)	5
GROUND	2,3,4,7,8,9

## Features

- four-port coupler
- wideband, 1200 to 2500 MHz
- excellent VSWR, 1.05:1 typ. all ports
- good flatness,  $\pm 0.3$  dB typ.
- excellent power handling capability, 35W (2100 MHz)
- hermetically sealed
- minimal variation with temperature variation
- low profile, 0.052" height
- protected by US Patent 7,049,905
- DC current through input to output 0.25A Max. at 1.0 watt RF input power.

## Applications

- PCS, PCN, UMTS
- ISM
- GPS
- defense

## Bi-Directional Coupler Electrical Specifications

FREQUENCY (MHz)	COUPLING (dB)		MAINLINE LOSS <sup>1</sup> (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT <sup>2</sup> (W)
	Nom.	Max. Flatness	Typ.	Max.	Typ.	Min.		
$f_L$ - $f_U$								
1200-2500								
1200-1700	7.1 $\pm$ 0.8	$\pm$ 0.8	1.5	1.9	22	19	1.08	35
1700-2100	6.5 $\pm$ 0.5	$\pm$ 0.3	1.6	2.0	22	14	1.05	35
2100-2500	7.0 $\pm$ 0.8	$\pm$ 1.0	1.5	2.0	22	12	1.10	27

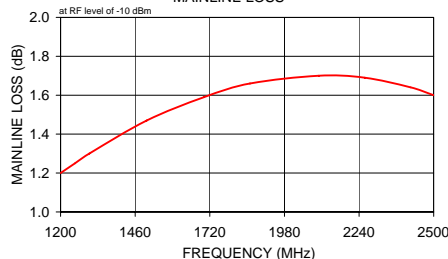
1. Includes theoretical power loss of 1.0 dB at 7 dB coupling.

2. Derate linearly 1/3 at 100°C

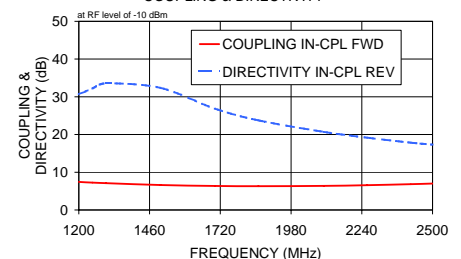
## Typical Performance Data

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
1200.00	1.20	7.44	7.44	28.71	30.67	33.76	38.52	34.05	31.62
1250.00	1.25	7.25	7.26	28.83	32.19	34.26	41.86	36.87	33.16
1300.00	1.30	7.10	7.09	28.92	33.55	34.75	58.50	42.17	34.02
1500.00	1.47	6.62	6.62	26.70	32.36	29.75	32.95	35.05	30.66
1700.00	1.59	6.36	6.37	23.78	26.87	25.23	26.63	27.37	25.76
1860.00	1.66	6.30	6.30	21.94	23.76	23.19	23.89	24.17	23.22
2100.00	1.70	6.39	6.38	19.67	20.71	21.34	21.69	21.28	20.95
2260.00	1.69	6.57	6.56	18.53	19.15	20.76	21.18	20.21	20.12
2420.00	1.64	6.84	6.84	17.58	17.85	20.67	21.04	19.83	19.80
2500.00	1.60	7.01	7.00	17.10	17.32	20.88	21.37	19.63	19.70

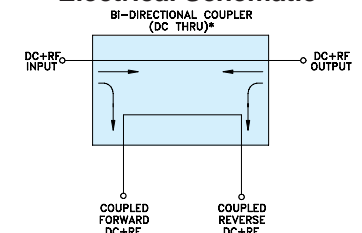
BDCA-7-25+  
MAINLINE LOSS



BDCA-7-25+  
COUPLING & DIRECTIVITY



## Electrical Schematic



\* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITHOUT INTERNAL TRANSFORMERS AND RESISTORS.

For detailed performance specs & shopping online see web site

**Mini-Circuits®**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

IF/RF MICROWAVE COMPONENTS

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuit's 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-Circuit's website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).

REV. F  
M119986  
ED-10880A/1  
BDCA-7-25+  
LC/TD/CP/AM  
090903