

High Power Bi-Directional Coupler

50Ω 6dB Coupling DC Pass 800 to 1600 MHz

BDCA-6-16+



CASE STYLE: DZ944

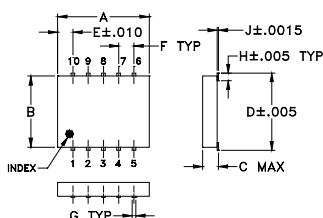
Maximum Ratings

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.	

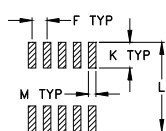
Pin Connections

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

Outline Drawing



PCB Land Pattern

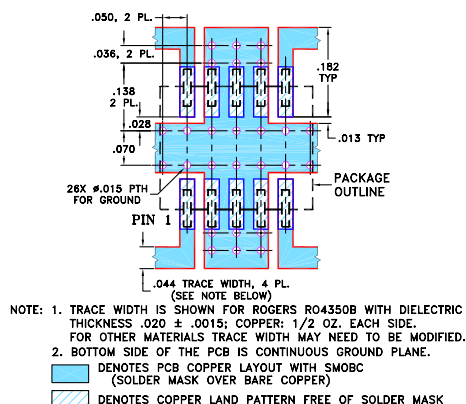


Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.30	.250	.052	.266	.050	.050	.012
7.62	6.35	1.32	6.76	1.27	1.27	0.30
H	J	K	L	M		wt
.029	.004	.085	.296	.030		grams
0.74	0.10	2.16	7.52	0.76		0.25

Demo Board MCL P/N: TB-115+ Suggested PCB Layout (PL-004)



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.
- The parts covered by this specification document 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

Features

- four-port coupler
- wideband, 800 to 1600 MHz
- excellent VSWR 1.05:1 typ. all ports
- good flatness, ±0.5 dB typ.
- excellent power handling capability, 65W (960 MHz)
- hermetically sealed
- minimal variation with temperature
- low profile, 0.052" height
- protected by US Patent 7,049,905
- DC current through input to output 0.25A Max. at 1.1 watt RF input power.

Applications

- cellular, PCS, PCN, UMTS
- ISM
- GPS

Bi-Directional Coupler Electrical Specifications

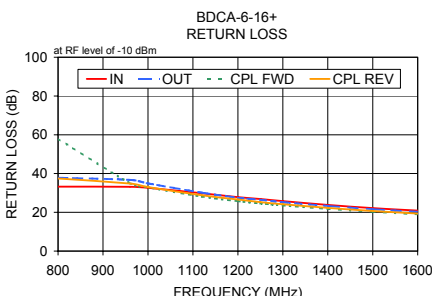
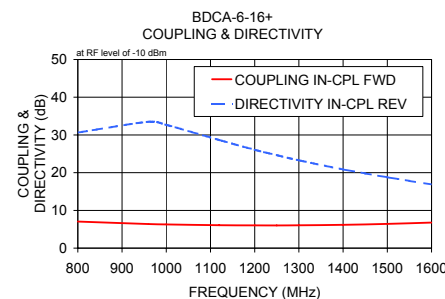
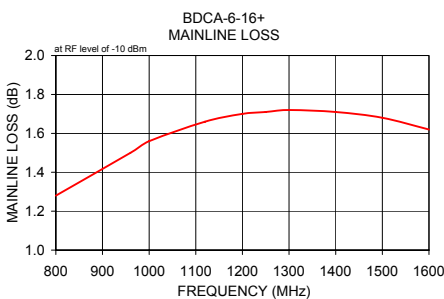
FREQUENCY (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT ² (W)
	Nom.	Max. Flatness	Typ.	Max.	Typ.	Min.		
f_L - f_U								
800-1600								
800-960	6.7±0.5	±0.6	1.4	1.8	24	20	1.05	65
960-1250	6.3±0.5	±0.4	1.6	2.0	23	19	1.05	55
1250-1600	6.6±0.7	±0.9	1.6	2.0	21	14	1.05	45

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

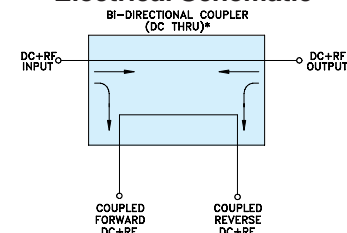
2. Derate linearly 1/3 at 100°C

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	Cpl Rev
800.00	1.28	7.04	7.03	30.72	30.63	33.22	37.87	57.85	37.44
960.00	1.50	6.39	6.38	39.47	33.49	33.14	36.74	35.04	34.84
1000.00	1.56	6.28	6.28	40.65	32.68	32.62	34.93	32.90	33.03
1120.00	1.66	6.07	6.06	34.97	28.66	29.84	30.17	28.10	28.80
1200.00	1.70	6.03	6.02	30.21	26.07	27.84	27.53	25.75	26.61
1250.00	1.71	6.02	6.02	28.33	24.64	26.88	26.47	24.58	25.26
1300.00	1.72	6.05	6.04	26.51	23.28	25.78	25.22	23.52	24.19
1400.00	1.71	6.19	6.18	23.45	20.86	23.83	23.30	21.76	22.28
1500.00	1.68	6.43	6.43	21.17	18.79	22.19	21.60	20.28	20.69
1600.00	1.62	6.78	6.78	19.05	16.88	20.90	20.29	18.95	19.36



Electrical Schematic



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

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