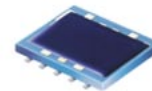


High Power Bi-Directional Coupler

BDCA-15-25+ BDCA-15-25

50Ω 15dB Coupling DC Pass 800 to 2500 MHz



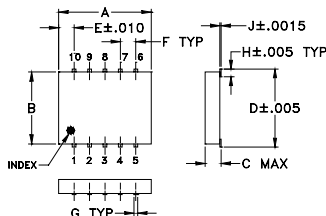
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	0.25A

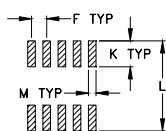
Pin Connections

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

Outline Drawing



PCB Land Pattern

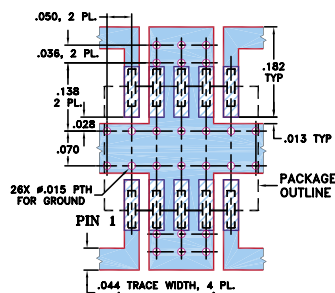


Suggested Layout,
Tolerance to be within ±.002

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)



NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020 ± .0015; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- four-port coupler
- wideband, 800 to 2500 MHz
- excellent VSWR, 1.15:1 typ. all ports
- hermetically sealed
- minimal variation with temperature variation
- low profile. 0.07" 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

- cellular, PCA, PCN, UMTS
- ISM
- GPS

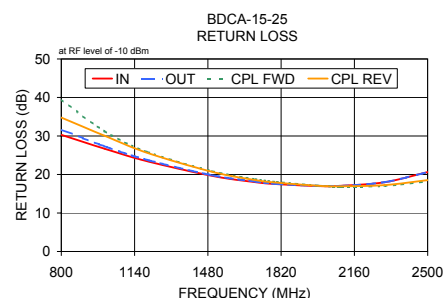
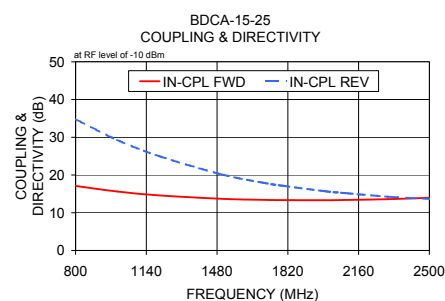
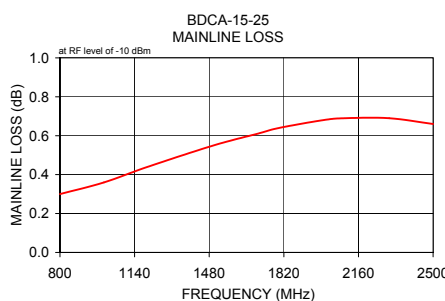
Bi-Directional Coupler Electrical Specifications

FREQUENCY (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT ² (W)
	Nom.	Max. Flatness	Typ.	Max.	Typ.	Min.		
$f_c - f_u$								
800-2500	15±1.7	±2.4	0.5	1.0	27	11	1.20	23
800-1000	16.3±0.8	±1.1	0.35	0.6	27	19	1.15	40
1800-2000	13.5±0.5	±0.3	0.55	1.0	17	12	1.35	28

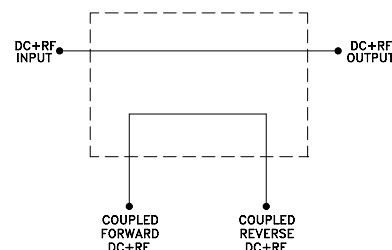
1. Includes theoretical power loss of 0.14 dB at 15 dB coupling.
2. Derate linearly 1/3 at 100°C

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
800.00	0.30	17.09	17.11	35.62	34.78	30.30	31.64	39.42	34.79
1000.00	0.36	15.63	15.63	27.89	29.29	26.70	27.33	31.23	30.07
1200.00	0.44	14.61	14.61	23.87	25.04	23.41	23.75	25.82	25.60
1500.00	0.55	13.70	13.71	19.67	20.19	19.65	19.81	20.85	20.70
1700.00	0.61	13.41	13.41	17.68	17.96	18.00	18.18	18.76	18.55
1800.00	0.64	13.34	13.34	16.92	17.12	17.50	17.57	18.05	17.88
2000.00	0.68	13.33	13.33	15.78	15.69	16.97	17.04	17.05	17.04
2100.00	0.69	13.39	13.37	15.31	15.19	17.07	17.02	16.88	16.93
2300.00	0.69	13.59	13.57	14.62	14.25	17.99	18.01	17.04	17.24
2500.00	0.66	13.96	13.93	14.06	13.64	20.62	20.58	18.22	18.53



electrical schematic



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