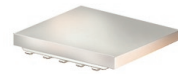


High Power Bi-Directional Coupler

BDCA1-6-22+

50Ω 6dB Coupling DC Pass 950 to 2200 MHz



Maximum Ratings

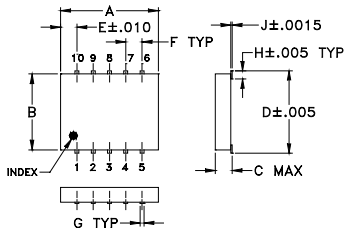
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	0.25A

Permanent damage may occur if any of these limits are exceeded.

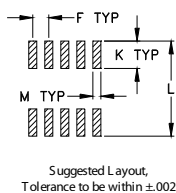
Pin Connections

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

Outline Drawing



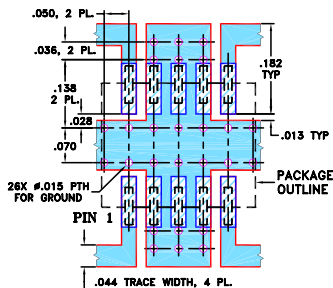
PCB Land Pattern



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

- wideband, 950 to 2200 MHz
- excellent VSWR 1.15:1 typ.
- excellent power handling capability, 44W (1900 MHz)
- hermetically sealed
- low temperature variation
- protected by US Patent 7,049,905
- DC current through input to output 0.25A Max. at 1.0 watt RF input power.

Applications

- DCS, PCS
- mobile satellite

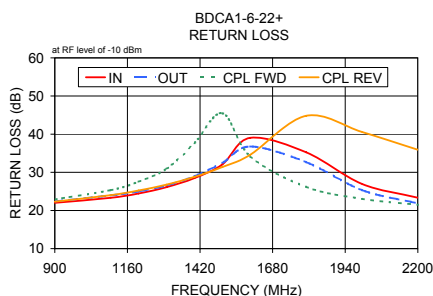
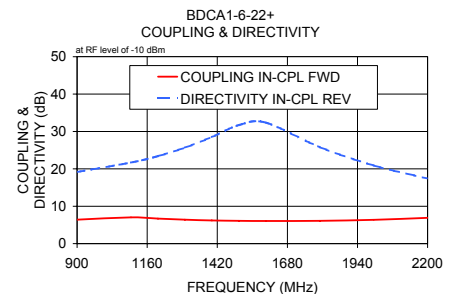
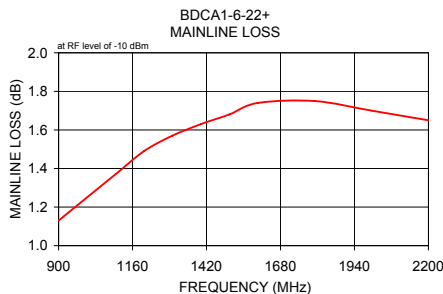
Bi-Directional Coupler Electrical Specifications

FREQUENCY (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT ² (W)
	Nom.	Max. Flatness	Typ.	Max.	Typ.	Min.		
950-2200								
950-1400	6.9±1.0	±1.0	1.4	1.9	23	17	1.20	57
1400-1900	6.0±0.5	±0.3	1.7	2.1	28	20	1.10	44
1900-2200	6.5±0.7	±0.7	1.7	2.1	22	15	1.15	37

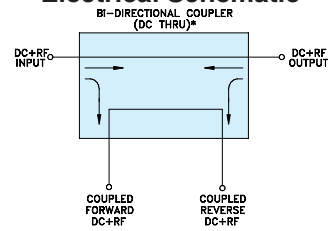
1. Includes theoretical coupled power loss of 1.25 dB at 6 dB coupling.
2. Derate linearly 1/3 at 100°C

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
900.00	1.13	6.41	7.97	18.73	19.16	22.02	22.37	22.89	22.31
1100.00	1.37	7.03	7.01	20.95	21.69	23.33	23.95	25.33	24.01
1200.00	1.49	6.70	6.69	22.51	23.40	24.45	24.99	27.54	25.24
1300.00	1.57	6.41	6.40	24.54	25.66	26.11	26.55	30.92	26.77
1400.00	1.63	6.21	6.19	27.42	28.52	28.50	28.97	37.66	28.82
1500.00	1.68	6.10	6.07	31.79	31.71	32.09	32.46	45.49	31.40
1600.00	1.74	6.05	6.00	41.94	32.37	39.04	36.77	34.19	34.60
1800.00	1.75	6.09	6.04	30.48	25.81	35.26	32.67	26.19	44.83
2000.00	1.70	6.36	6.31	23.05	20.91	26.95	25.34	23.04	40.59
2200.00	1.65	6.90	6.85	18.81	17.40	23.34	21.86	21.49	35.92



Electrical Schematic



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

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