

High Power Bi-Directional Coupler

BDCN-7-25+

50Ω 7dB Coupling 824 to 2525 MHz



Maximum Ratings

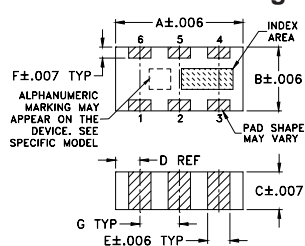
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C

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

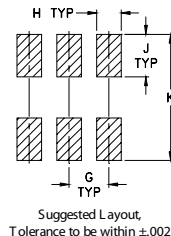
Pin Connections

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

Outline Drawing



PCB Land Pattern

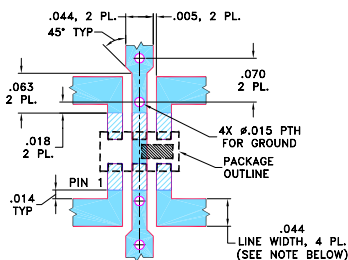


Outline Dimensions (inch/mm)

A	B	C	D	E	F
.126	.063	.035	.024	.022	.011
3.20	1.60	0.89	0.61	0.56	0.28

G	H	J	K	wt
				grams
.039	.024	.042	.123	
0.99	0.61	1.07	3.12	.020

Demo Board MCL P/N: TB-255+ Suggested PCB Layout (PL-131)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; 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.
3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
4. DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- four-port coupler
- wideband, 824 to 2525 MHz
- excellent VSWR, 1.15:1 typ., all ports
- ultra small size, hermetically sealed
- minimal variation with temperature

Applications

- UMTS
- CDMA
- PCS
- ISM
- GPS
- DCS
- TDMA

Bi-Directional Coupler Electrical Specifications

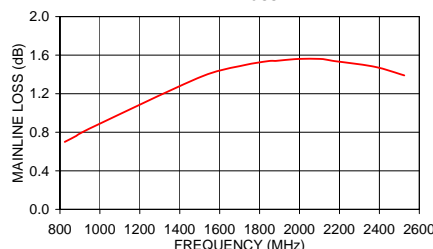
FREQUENCY (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT ² (W)	
	Nom.	Max. Flatness	Typ.	Max.	Typ.	Min.		Typ.	Max.
$f_c - f_u$									
824-2525	8.2±1.9	±2.0	1.3	2.0	20	11	1.15	15	15
824-894	10.0±0.4	±0.3	0.8	1.1	16	11	1.15	15	15
880-960	9.3±0.5	±0.3	0.8	1.2	16	11	1.15	15	15
1710-1880	6.5±0.3	±0.3	1.5	2.0	19	14	1.15	15	15
1850-1990	6.4±0.3	±0.3	1.5	2.0	20	15	1.15	15	15
2110-2170	6.4±0.3	±0.3	1.5	2.0	22	16	1.15	15	15
2375-2525	6.8±0.4	±0.4	1.5	2.0	20	14	1.15	15	15

1. Includes theoretical power loss of 0.7 dB at 8.2 dB coupling.
2. Derate linearly 8W at 100°C

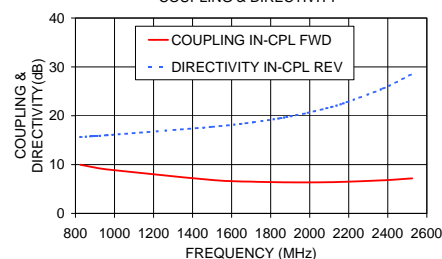
Typical Performance Data

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
824.00	0.70	9.97	9.96	15.42	15.63	27.97	27.68	37.99	38.65
880.00	0.76	9.54	9.54	15.56	15.79	27.50	27.47	37.28	37.67
894.00	0.78	9.44	9.45	15.60	15.82	27.38	27.36	37.12	37.46
960.00	0.85	9.01	9.01	15.76	16.01	26.82	26.74	36.23	36.08
1500.00	1.37	6.84	6.87	17.09	17.72	25.45	25.19	35.88	31.13
1710.00	1.49	6.49	6.52	17.84	18.66	25.62	25.57	37.59	30.76
1850.00	1.54	6.38	6.40	18.54	19.50	25.85	26.01	38.24	30.27
1880.00	1.54	6.37	6.39	18.72	19.72	25.95	26.25	38.47	30.25
1990.00	1.56	6.35	6.37	19.46	20.58	26.13	26.63	38.48	29.80
2110.00	1.56	6.40	6.43	20.50	21.78	26.94	27.90	37.15	29.26
2170.00	1.54	6.46	6.48	21.11	22.48	27.25	28.19	36.84	29.11
2375.00	1.48	6.78	6.80	23.75	25.56	29.26	30.33	34.19	28.53
2525.00	1.39	7.17	7.19	26.28	28.54	31.83	32.84	32.37	28.22

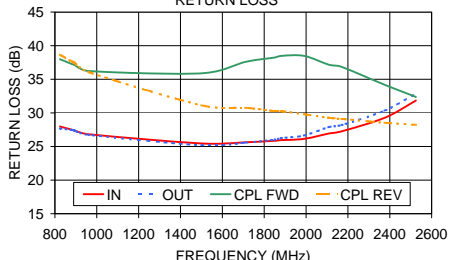
BDCN-7-25+
MAINLINE LOSS



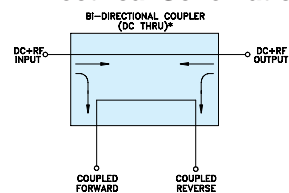
BDCN-7-25+
COUPLING & DIRECTIVITY



BDCN-7-25+
RETURN LOSS



Electrical Schematic



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

For detailed performance specs & shopping online see web site

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