

High Power Bi-Directional Coupler

50Ω 17dB Coupling DC Pass 824 to 2525 MHz

BDCN-17-25+ BDCN-17-25



CASE STYLE: FV1206-1

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	0.5A

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

Features

- four-port coupler
- wideband, 824 to 2525 MHz
- excellent VSWR, 1.2:1 typ., all ports
- ultra small size, hermetically sealed
- minimal variation with temperature variation
- protected by US Patent 7,049,905
- DC current through input to output 0.5A Max. at 1.0 watt RF input power

Applications

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

Bi-Directional Coupler Electrical Specifications

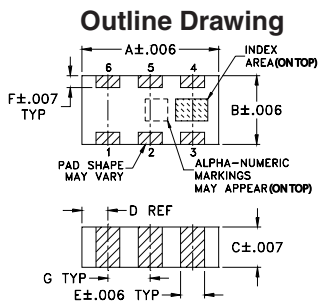
FREQUENCY (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT ² (W)
	Nom.	Max. Flatness	Typ.	Max.	Typ.	Min.		
$f_c - f_u$								
824-2525	16.8±2.0	±3.0	0.6	0.9	13	10	1.2	16
824-894	18.3±0.6	±0.6	0.3	0.8	13	10	1.2	16
880-960	17.6±0.6	±0.6	0.3	0.8	13	10	1.2	16
1710-1880	14.3±0.6	±0.4	0.5	0.9	22	17	1.2	16
1850-1990	14.3±0.6	±0.4	0.5	0.9	22	17	1.2	16
2110-2170	14.3±0.6	±0.5	0.5	0.9	25	20	1.2	16
2375-2525	15.0±0.6	±0.8	0.5	0.9	15	11	1.2	16

1. Includes theoretical power loss of 0.1 dB at 17 dB coupling.

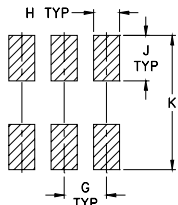
2. Derate linearly 8W at 100°C

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	0.25	18.40	18.40	13.19	13.24	27.22	27.34	26.50	27.52
1000.00	0.30	17.07	17.08	13.85	13.88	25.83	26.07	25.35	26.82
1500.00	0.42	14.87	14.88	17.67	17.63	23.35	23.34	25.52	25.99
1700.00	0.46	14.45	14.46	20.65	20.43	23.72	23.26	26.46	26.58
1800.00	0.48	14.32	14.33	22.72	22.36	23.44	22.72	27.48	26.58
1880.00	0.48	14.25	14.26	24.64	24.13	23.72	22.87	27.72	26.82
2000.00	0.50	14.22	14.23	27.94	27.40	23.63	23.17	29.06	26.72
2100.00	0.50	14.26	14.26	28.30	27.88	24.33	23.91	29.31	27.02
2300.00	0.51	14.54	14.53	21.69	21.71	25.09	24.22	28.13	28.67
2525.00	0.49	15.18	15.16	15.51	15.42	27.33	26.72	27.50	30.60



PCB Land Pattern



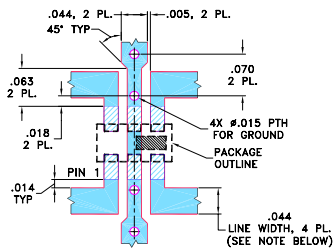
Suggested Layout, Tolerance to be within ±0.02

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
.039	.024	.042	.123	grams
0.99	0.61	1.07	3.12	.020

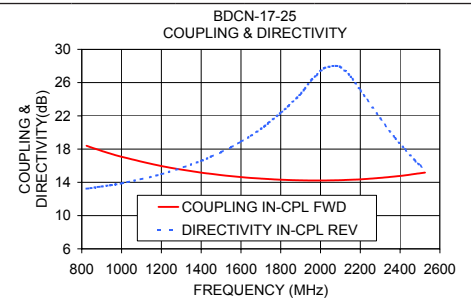
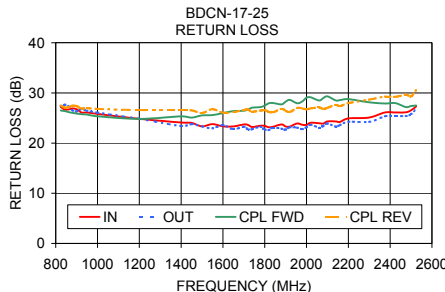
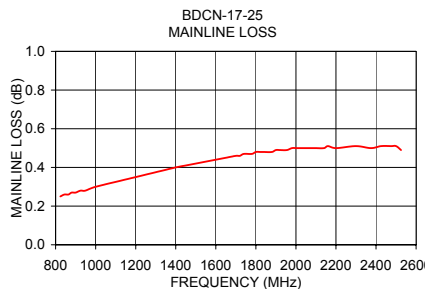
Demo Board MCL P/N: TB-255+ Suggested PCB Layout (PL-131)



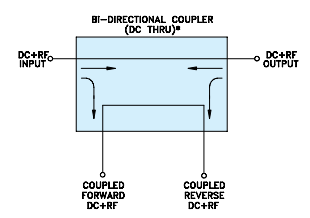
- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
4. DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Notes

- A. 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.
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Electrical Schematic



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



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