

# Surface Mount Bi-Directional Coupler

**NEW!**  
**BDCN-15-25**

High Power, 50Ω

824 to 2525 MHz



**BLUE CELL™**

CASE STYLE: FV1206-1  
PRICE: \$2.99 ea. QTY (10-49)  
\$1.99 ea. QTY (1000)

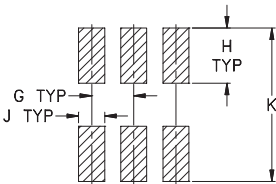
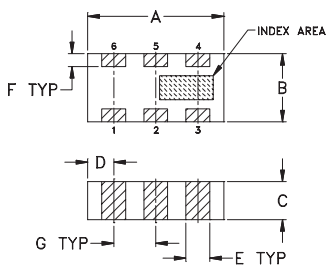
## Maximum Ratings

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

## Pin Connections

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

## Outline Drawing

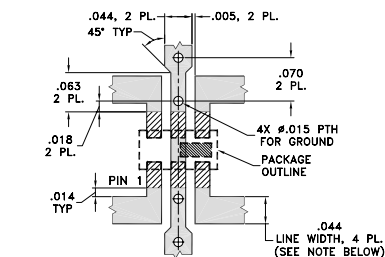


SUGGESTED LAYOUT FOR PCB PATTERN  
PATTERN TO BE WITHIN ±.002

## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.126	.063	.035	.024	.022	.012	.039
3.20	1.60	0.89	0.61	0.56	0.30	0.99
H	J	K	wt.			
.042	.024	.123	grams			
1.07	0.61	3.12	.020			

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



- NOTE:
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
  - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

■ DENOTES PCB COPPER LAYOUT  
■ DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

## Features

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

## Applications

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

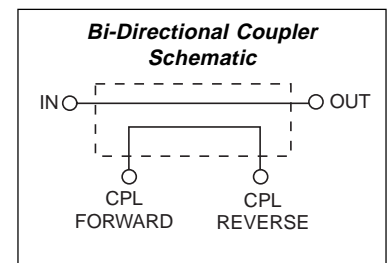
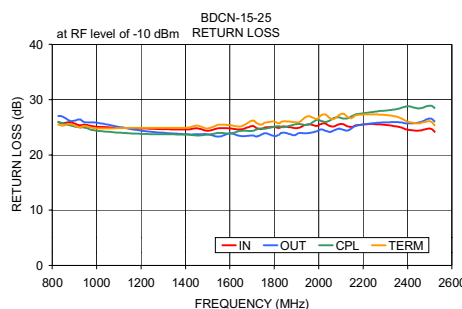
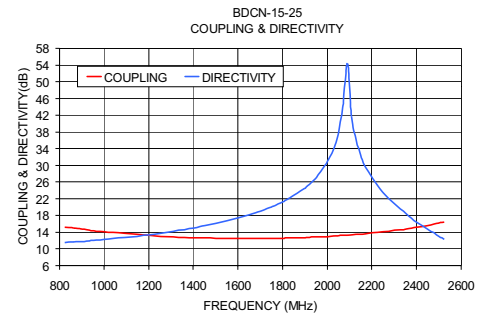
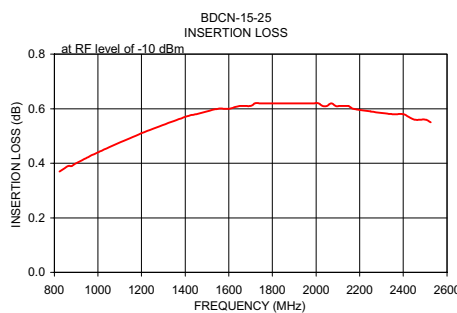
## Bi-Directional Electrical Specifications

MODEL NO.	FREQ. RANGE (MHz)	COUPLING (dB)		MAINLINE LOSS* (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT** (W)
		Nom.	Max. Flatness	Typ.	Max.	Typ.	Min.		
BDCN-15-25	824-2525	14.5±2.0	±3.0	0.6	0.9	13	8	1.2	16
	824-894	15.0±0.6	±0.6	0.4	0.8	12	8	1.2	16
	880-960	14.5±0.6	±0.6	0.5	0.9	13	8	1.2	16
	1710-1880	12.5±0.6	±0.4	0.6	0.9	22	16	1.2	16
	1850-1990	12.6±0.6	±0.4	0.5	0.9	22	16	1.2	16
	2110-2170	13.3±0.6	±0.5	0.6	1.0	22	16	1.2	16
	2375-2525	15.5±0.6	±1.5	0.6	1.0	12	8	1.2	16

\* Includes theoretical coupled power loss of .14 dB at 15 dB coupling.  
\*\* Derate linearly to 8W at 100°C

## Typical Performance Data

Frequency (MHz)	Insertion Loss (dB) In-Out	Coupling (dB)		Directivity (dB)		Return Loss (dB)			
		In-CPL	Out-Term	Out-CPL	In-Term	In	Out	CPL	Term
824.00	0.37	15.28	15.27	11.53	11.52	26.01	27.03	25.99	25.58
1000.00	0.44	14.11	14.11	12.25	12.24	25.11	25.83	24.37	24.79
1500.00	0.59	12.54	12.55	16.08	16.10	24.39	23.75	23.65	24.79
1700.00	0.61	12.47	12.47	19.01	19.05	25.23	23.52	24.34	26.21
1840.00	0.62	12.61	12.61	22.34	22.42	25.17	24.04	25.02	26.08
1990.00	0.62	12.94	12.93	29.95	29.96	25.23	24.26	26.32	26.52
2070.00	0.62	13.21	13.20	45.18	44.15	25.18	24.44	26.72	26.51
2170.00	0.60	13.65	13.63	29.61	29.91	25.36	25.28	27.35	27.20
2350.00	0.58	14.78	14.74	18.39	18.50	25.16	25.93	28.29	26.93
2525.00	0.55	16.45	16.40	12.11	12.23	24.12	25.98	28.45	25.25



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