

# Surface Mount Bi-Directional Coupler

## BDCA-10-25

### High Power, 50Ω

### 800 to 2500 MHz



**BLUE CELL™**

CASE STYLE: SM1L  
PRICE: \$5.95 ea. QTY (10-49)

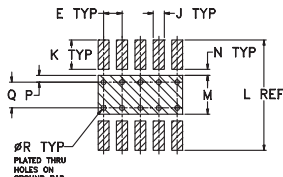
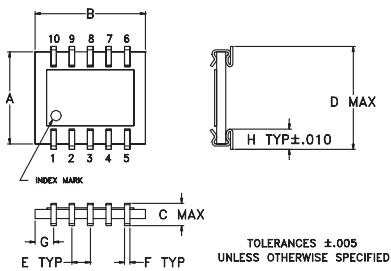
#### Maximum Ratings

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

#### Pin Connections

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

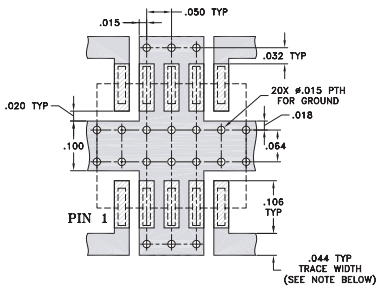
#### Outline Drawing



#### Outline Dimensions (inch)

	A	B	C	D	E	F	G	H	J	
	.250	.300	.070	.320	.050	.015	.050	.075	.030	
	6.35	7.62	1.78	8.12	1.27	.38	1.27	1.91	.76	
		K	L	M	N	P	Q	R		wt.
		.095	.330	.100	.020	.015	.070	.014		grams
		2.41	8.38	2.54	.51	.38	1.78	.36		.3

#### Demo Board MCL P/N: TB-115 Suggested PCB Layout (PL-004)



#### Features

- four-port coupler
- wideband, 800-2500 MHz
- excellent VSWR, 1.15:1 typ., all ports
- good flatness, ±0.6 dB typ.
- excellent power handling capability, 50W (800-1000 MHz)
- hermetically sealed
- minimal variation with temperature
- low profile, 0.07" height

#### Applications

- cellular, PCS, PCN, UMTS
- ISM
- GPS

#### 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.		
BDCA-10-25	800-2500	10.1±2.0	±2.0	1.0	1.5	25	11	1.05	24
	800-1000	11.0±0.8	±1.2	0.6	1.0	32	20	1.05	50
	1700-2000	8.5±0.5	±0.6	1.1	1.5	23	16	1.05	34
	1000-2500	9.4±1.2	±1.5	1.0	1.5	22	11	1.05	24

\* Includes theoretical coupled power loss of 0.46 dB at 10 dB coupling.  
\*\* Derate linearly to 1/3 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
800.00	0.51	11.74	11.94	33.32	37.31	31.70	31.27	36.30	28.13
900.00	0.55	11.01	11.20	35.71	39.79	30.99	29.85	37.54	25.34
1000.00	0.64	10.39	10.56	38.83	37.62	29.41	28.87	38.07	27.99
1100.00	0.72	9.85	10.07	39.71	34.05	27.94	27.76	38.46	32.68
1300.00	0.86	9.06	9.49	34.58	29.81	25.76	26.33	37.29	34.65
1500.00	0.93	8.63	8.86	30.88	25.68	24.58	25.59	36.88	31.32
1700.00	1.02	8.39	8.67	29.45	23.91	24.82	25.69	38.65	34.99
2000.00	1.04	8.47	8.73	30.20	22.76	27.40	26.41	36.15	37.39
2200.00	1.02	8.82	9.02	29.36	22.31	26.92	25.20	27.33	27.99
2500.00	0.98	9.86	9.92	21.31	20.10	20.89	20.70	21.30	21.10

