

# Surface Mount Bi-Directional Coupler

**NEW!**

**BDCA1-10-40**

High Power, 50Ω

1600 to 4000 MHz

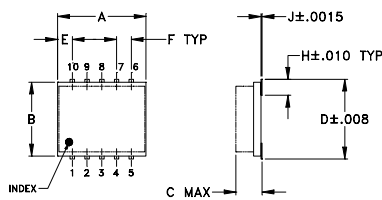
## Maximum Ratings

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

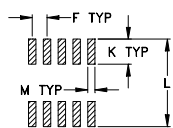
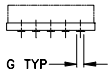
## Pin Connections

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

## Outline Drawing



TOLERANCES  
2 PL DECIMALS ±.01  
3 PL DECIMALS ±.005  
UNLESS OTHERWISE SPECIFIED



SUGGESTED LAYOUT FOR PCB LAND PATTERN

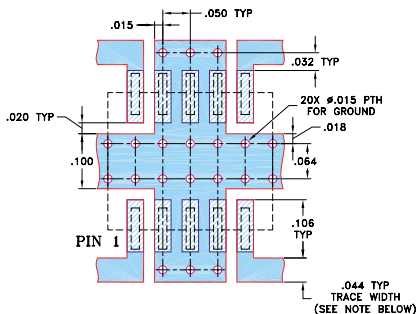
## Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.30	.250	.052	.274	.050	.050	.012
7.62	6.35	1.32	6.96	1.27	1.27	0.30

H	J	K	L	M	wt
.057	.004	.085	.296	.030	grams
1.45	0.10	2.16	7.52	0.76	0.25

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



NOTE: TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS 0.020" ± 0.0015", COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

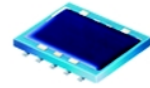
- DENOTES PCB COPPER LAYOUT
- ▨ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

## Features

- four-port
- wideband, 1600-4000 MHz
- excellent VSWR 1.2:1 typ. all ports
- good flatness, ±0.5
- excellent power handling capability
- hermetically sealed
- minimal variation with temperature

## Applications

- mobile satellite
- wireless communication
- ISM, PCS



**BLUE CELL™**

CASE STYLE: DZ944  
PRICE: \$5.95 ea. QTY (10-49)

## Bi-Directional Electrical Specifications

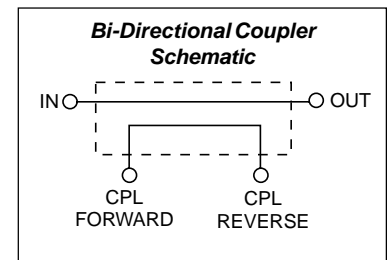
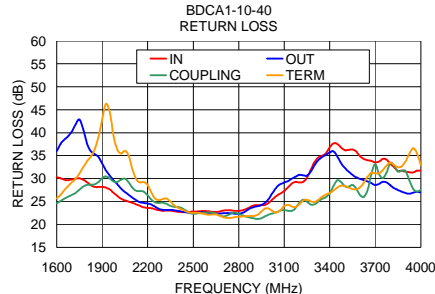
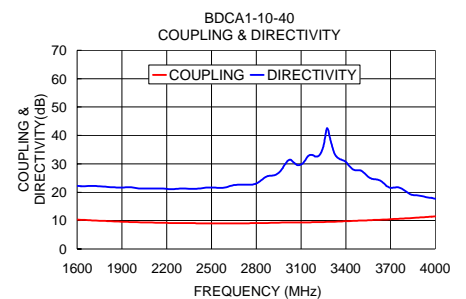
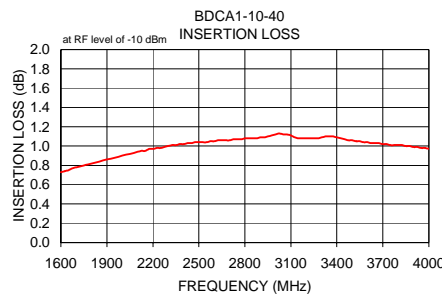
MODEL NO.	FREQ. RANGE (MHz)	COUPLING (dB)		MAINLINE LOSS* (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT** (W)
		Nom.	Max. Flatness	Typ.	Max.	Typ.	Min.		
BDCA1-10-40	<b>1600-4000</b>								
	1600-1800	10.1±0.7	±0.7	0.8	1.1	21	18	1.1	24
	1800-2200	9.5±0.7	±0.8	1.0	1.3	20	17	1.1	20
	2200-2900	9.1±0.5	±0.5	1.05	1.4	20	16	1.2	16
	2900-3500	9.6±0.9	±1.0	1.15	1.4	22	16	1.2	14
	3500-4000	10.8±1.0	±1.5	1.05	1.4	18	11	1.25	12

\* Includes theoretical coupled power loss of 0.46dB 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
1600.00	0.73	10.38	10.35	22.15	22.21	30.29	35.96	24.62	25.69
1800.00	0.82	9.83	9.82	21.29	21.91	29.24	37.69	28.63	33.72
2000.00	0.90	9.45	9.44	20.61	21.43	26.20	28.78	29.26	36.30
2200.00	0.97	9.22	9.21	20.25	21.19	23.61	24.59	26.38	28.57
2500.00	1.04	9.06	9.09	20.09	21.66	22.81	22.48	22.34	22.52
2900.00	1.09	9.23	9.17	21.21	25.85	24.12	23.79	21.32	21.84
3200.00	1.08	9.47	9.53	22.68	33.09	29.13	30.80	24.69	24.37
3500.00	1.06	10.01	10.17	24.81	27.65	36.17	32.26	28.32	28.37
3800.00	1.01	10.82	10.91	22.98	20.42	33.18	28.51	33.41	33.47
4000.00	0.97	11.51	11.60	20.98	17.71	31.77	26.97	27.56	32.91



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REV. OR  
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041112