Surface Mount

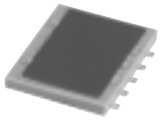
Bi-Directional Coupler

NEW!

BDCA-6-16

High Power, 50Ω

800 to 1600 MHz



BLUE CELL™

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

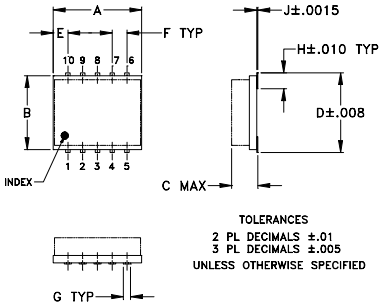
Maximum Ratings

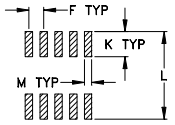
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C

Pin Connections

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

Outline Drawing





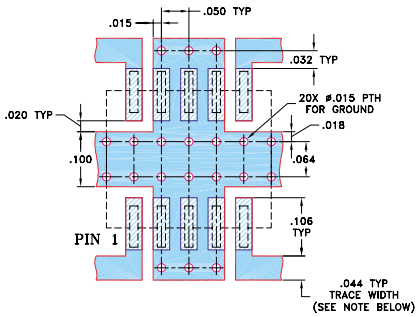
SUGGESTED LAYOUT FOR PCB LAND PATTERN

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 coupler
- wideband, 800-1600 MHz
- excellent VSWR, 1.05:1typ., all ports
- good flatness, ±0.5 dB typ.
- excellent power handling capability, 65W (960 MHz)
- hermetically sealed
- minimal variation with temperature
- low profile, 0.052" height

Applications

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

Bi-Directional Electrical Specifications

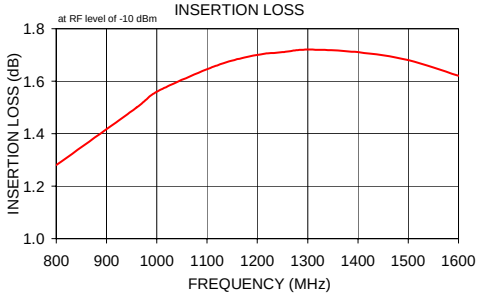
FREQ. RANGE (MHz)	COUPLING (dB)		MAINLINE LOSS* (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT** (W)
f_L-f_U	Nom.	Max. Flatness	Typ.	Max.	Typ.	Min.	Typ.	Max.
800-1600								
800-960	6.7±0.5	±0.6	1.4	1.8	24	20	1.05	65
960-1250	6.3±0.5	±0.4	1.6	2.0	23	19	1.05	55
1250-1600	6.6±0.7	±0.9	1.6	2.0	21	14	1.05	45

* Includes theoretical coupled power loss of 1.0 dB at 7 dB coupling.
** Derate linearly to 1/3 at 100°C

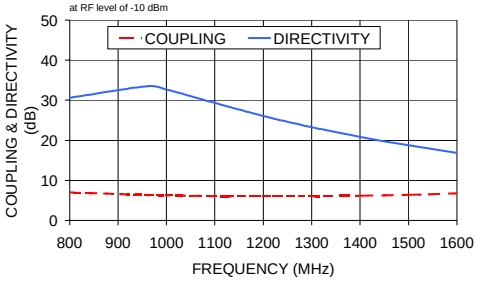
Typical Performance Data

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	1.28	7.04	7.03	30.72	30.63	33.22	37.87	57.85	37.44
960.00	1.50	6.39	6.38	39.47	33.49	33.14	36.74	35.04	34.84
1000.00	1.56	6.28	6.28	40.65	32.68	32.62	34.93	32.90	33.03
1120.00	1.66	6.07	6.06	34.97	28.66	29.84	30.17	28.10	28.80
1200.00	1.70	6.03	6.02	30.21	26.07	27.84	27.53	25.75	26.61
1250.00	1.71	6.02	6.02	28.33	24.64	26.88	26.47	24.58	25.26
1300.00	1.72	6.05	6.04	26.51	23.28	25.78	25.22	23.52	24.19
1400.00	1.71	6.19	6.18	23.45	20.86	23.83	23.30	21.76	22.28
1500.00	1.68	6.43	6.43	21.17	18.79	22.19	21.60	20.28	20.69
1600.00	1.62	6.78	6.78	19.05	16.88	20.90	20.29	18.95	19.36

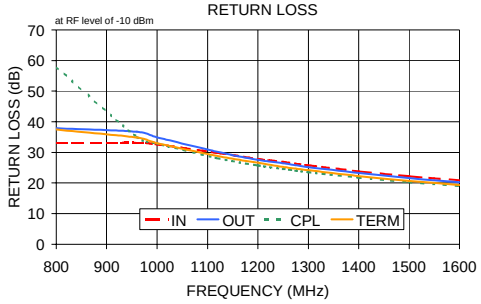
BDCA-6-16
INSERTION LOSS



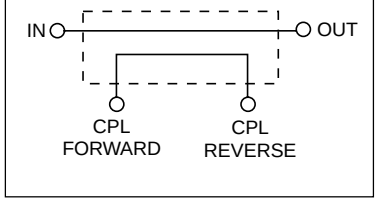
BDCA-6-16
COUPLING & DIRECTIVITY



BDCA-6-16
RETURN LOSS



Bi-Directional Coupler Schematic



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