

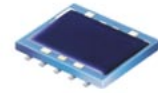
Surface Mount

# Bi-Directional Coupler

High Power, 50Ω

1600 to 3300 MHz

BDCA1-7-33+



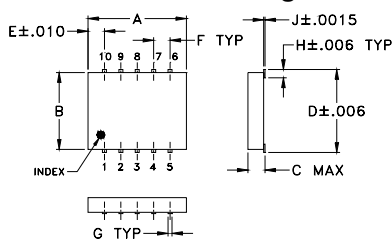
## Maximum Ratings

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

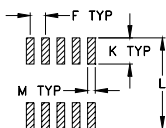
## Pin Connections

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

## Outline Drawing



### PCB Land Pattern

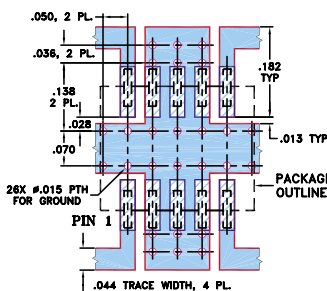


Suggested Layout,  
Tolerance to be within ±.002

## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.30	.250	.052	.262	.050	.050	.012
7.62	6.35	1.32	6.66	1.27	1.27	0.30
H	J	K	L	M		wt
.027	.004	.085	.296	.030		grams
0.69	0.10	2.16	7.52	0.76		0.25

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



- NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020 ± .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.  
■ DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
■ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

## Features

- wideband, 1600 to 3300 MHz
- excellent VSWR 1.1:1 typ.
- excellent power handling capability
- hermetically sealed
- low profile
- protected by US Patent 7,049,905

## Applications

- defense communication
- ISM
- mobile satellite
- wireless communication

CASE STYLE: DZ944

PRICE: \$3.95 ea. QTY (10-49)

**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

## Bi-Directional Coupler Electrical Specifications

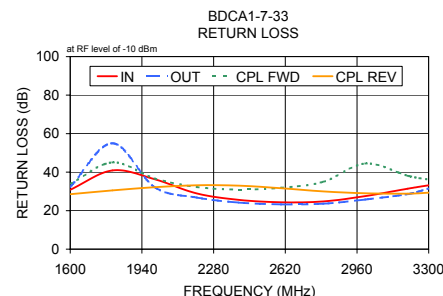
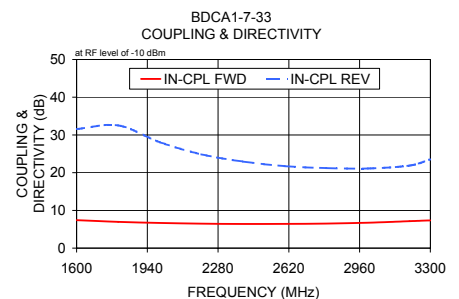
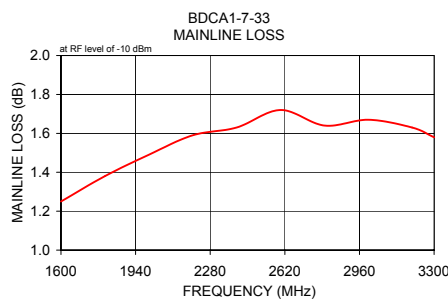
FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS <sup>1</sup> (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT <sup>2</sup> (W)
	Nom.	Max. Flatness	Typ.	Max.	Typ.	Min.		
1600-3300								
1600-2200	7.0±0.6	±1.0	1.6	1.9	27	22	1.10	32
2200-2700	6.5±0.5	±0.3	1.6	1.9	23	18	1.15	32
2700-3300	7.1±0.6	±0.7	1.6	1.9	21	17	1.15	24

1. Includes theoretical coupled power loss of 1.0 dB at 7 dB coupling.

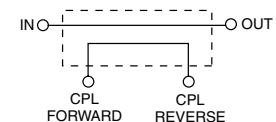
2. Derate linearly 1/3 at 100°C

## 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
1600.00	1.25		7.42	7.42	29.58	31.57	30.85	32.38	33.94	28.53
1800.00	1.38		6.97	6.98	35.58	32.54	40.89	54.99	45.06	30.53
2000.00	1.49		6.67	6.68	32.37	28.09	36.34	32.22	36.75	32.19
2200.00	1.59		6.49	6.51	27.61	24.86	28.93	26.79	32.27	33.17
2400.00	1.63		6.41	6.43	24.83	22.95	25.58	24.18	30.95	32.97
2600.00	1.72		6.43	6.47	23.19	21.73	24.33	23.26	31.89	31.67
2800.00	1.64		6.50	6.57	22.30	21.21	24.79	23.63	34.98	29.98
3000.00	1.67		6.74	6.83	22.07	21.12	27.56	25.80	44.47	29.03
3200.00	1.63		7.15	7.20	22.20	21.87	31.40	28.60	38.15	28.84
3300.00	1.58		7.35	7.52	24.60	23.52	33.20	31.52	36.12	29.36



## electrical schematic



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