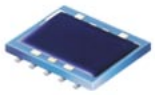
High Power

Bi-Directional Coupler

BDCA-7-25+
BDCA-7-25

50Ω 7dB Coupling DC Pass 1200 to 2500 MHz



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

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

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

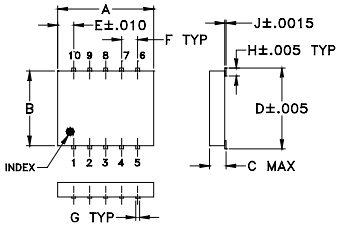
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	0.25A

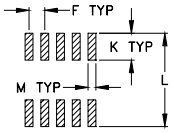
Pin Connections

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

Outline Drawing



PCB Land Pattern



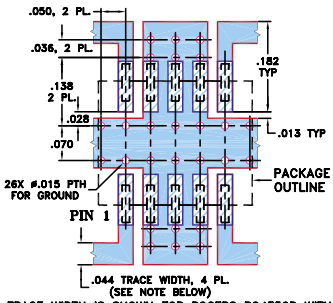
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.30	.250	.052	.266	.050	.050	.012
7.62	6.35	1.32	6.76	1.27	1.27	0.30

H	J	K	L	M	wt
.029	.004	.085	.296	.030	grams
0.74	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

- four-port coupler
- wideband, 1200 to 2500 MHz
- excellent VSWR, 1.05:1 typ. all ports
- good flatness, ±0.3 dB typ.
- excellent power handling capability, 35W (2100 MHz)
- hermetically sealed
- minimal variation with temperature variation
- low profile. 0.052" height
- protected by US Patent 7,049,905
- DC current through input to output 0.25A Max. at 1.0 watt RF input power.

Applications

- PCS, PCN, UMTS
- ISM
- GPS
- defense

Bi-Directional Coupler Electrical Specifications

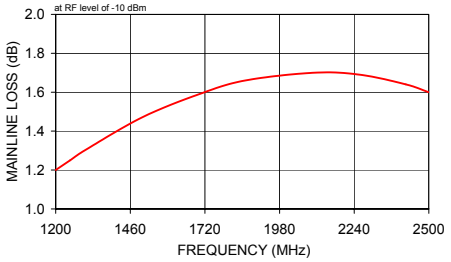
FREQUENCY (MHz)	COUPLING (dB)		MAINLINE LOSS[1] (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT[2] (W)
f_L-f_U	Nom.	Max. Flatness	Typ.	Max.	Typ.	Min.	Typ.	Max.
1200-2500								
1200-1700	7.1±0.8	±0.8	1.5	1.9	22	19	1.08	35
1700-2100	6.5±0.5	±0.3	1.6	2.0	22	14	1.05	35
2100-2500	7.0±0.8	±1.0	1.5	2.0	22	12	1.10	27

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

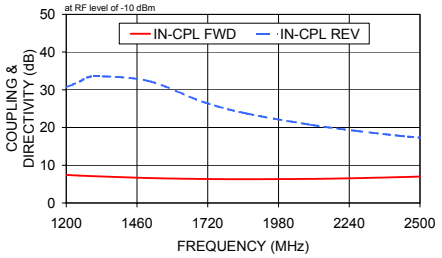
Typical Performance Data

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
1200.00	1.20	7.44	7.44	28.71	30.67	33.76	38.52	34.05	31.62
1250.00	1.25	7.25	7.26	28.83	32.19	34.26	41.86	36.87	33.16
1300.00	1.30	7.10	7.09	28.92	33.55	34.75	58.50	42.17	34.02
1500.00	1.47	6.62	6.62	26.70	32.36	29.75	32.95	35.05	30.66
1700.00	1.59	6.36	6.37	23.78	26.87	25.23	26.63	27.37	25.76
1860.00	1.66	6.30	6.30	21.94	23.76	23.19	23.89	24.17	23.22
2100.00	1.70	6.39	6.38	19.67	20.71	21.34	21.69	21.28	20.95
2260.00	1.69	6.57	6.56	18.53	19.15	20.76	21.18	20.21	20.12
2420.00	1.64	6.84	6.84	17.58	17.85	20.67	21.04	19.83	19.80
2500.00	1.60	7.01	7.00	17.10	17.32	20.88	21.37	19.63	19.70

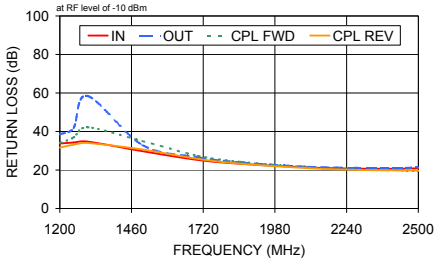
BDCA-7-25
MAINLINE LOSS



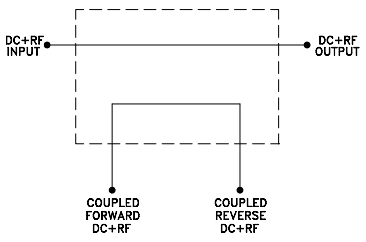
BDCA-7-25
COUPLING & DIRECTIVITY



BDCA-7-25
RETURN LOSS



electrical schematic



REV. D
M107880
ED-10880A/1
BDCA-7-25
LC/TD/CP/AM
070522