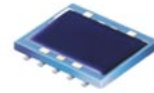


High Power Bi-Directional Coupler

50Ω 16dB Coupling DC Pass 1800 to 4200 MHz

BDCA-16-30+
BDCA-16-30



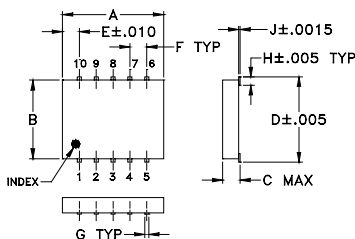
Maximum Ratings

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

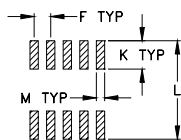
Pin Connections

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

Outline Drawing



PCB Land Pattern

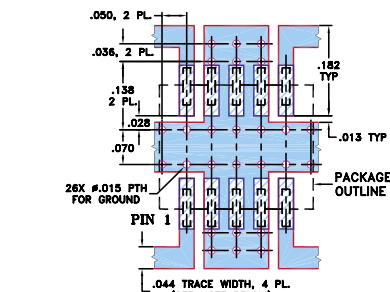


Suggested Layout,
Tolerance to be within ±.002

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, 1800 to 4200 MHz
- low mainline loss, 0.4 dB typ.
- hermetically sealed
- low 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
- ISM
- MDS
- defense

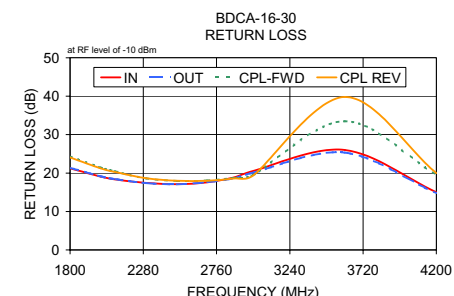
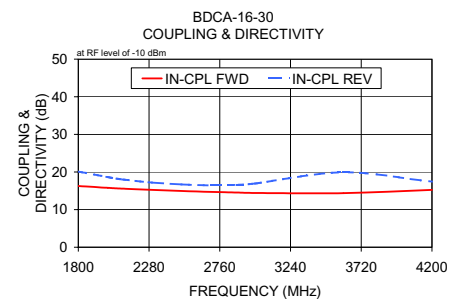
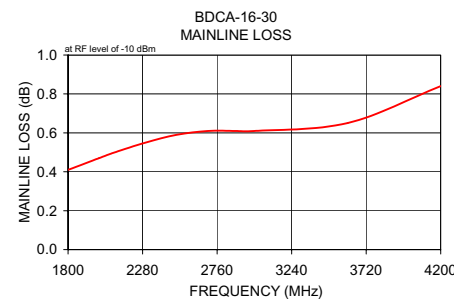
Bi-Directional Coupler Electrical Specifications

FREQUENCY (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT ² (W)
	Nom.	Max. Flatness	Typ.	Max.	Typ.	Min.		
1800-4200								
1800-3000	15.2±1.0	±1.2	0.5	0.9	23	13	1.3	24
1800-2500	15.5±0.7	±1.0	0.4	0.9	22	14	1.3	27
3000-4200	14.8±0.5	±1.0	0.7	1.2	18	13	1.3	18

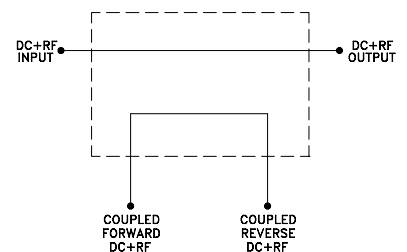
1. Includes theoretical power loss of 0.11 dB at 16 dB coupling.
2. Derate linearly 1/3 at 100°C

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
1800.00	0.41	16.30	16.30	19.42	20.12	21.25	21.37	24.36	24.07
2000.00	0.47	15.80	15.79	18.24	18.65	19.08	19.19	21.44	21.24
2100.00	0.50	15.59	15.58	17.77	18.03	18.32	18.39	20.37	20.22
2300.00	0.55	15.24	15.25	17.27	17.21	17.42	17.40	18.62	18.65
2500.00	0.59	14.96	14.96	16.87	16.71	17.13	17.08	17.98	17.99
2700.00	0.61	14.72	14.72	17.09	16.46	17.58	17.63	18.07	17.99
2880.00	0.61	14.53	14.53	17.34	16.63	18.93	18.70	18.76	18.61
3000.00	0.61	14.42	14.43	17.62	16.96	20.57	20.11	19.50	19.38
3600.00	0.65	14.39	14.37	22.92	19.92	26.02	25.31	33.48	39.80
4200.00	0.84	15.24	15.23	19.29	17.42	15.01	14.78	19.56	20.00



electrical schematic



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