

High Power Bi-Directional Coupler

50Ω 14 dB Coupling DC Pass 1700 to 3400 MHz

BDCN-14-342+



Maximum Ratings

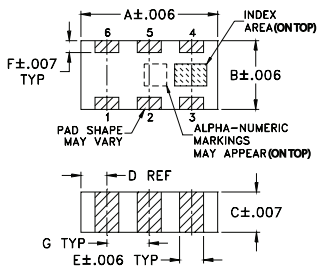
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	0.5A

Permanent damage may occur if any of these limits are exceeded.

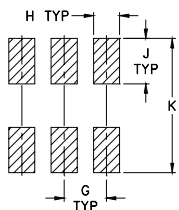
Pin Connections

INPUT	1
OUTPUT	4
COUPLED (forward)	6
COUPLED (reverse)	3
GROUND	2,5

Outline Drawing



PCB Land Pattern

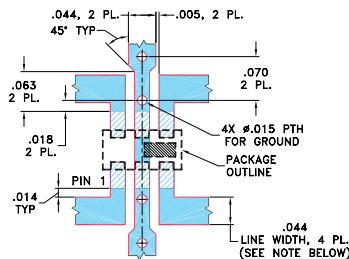


Suggested Layout, Tolerance to be within ±.002

Outline Dimensions (inch/mm)

A	B	C	D	E	F
.126	.063	.035	.024	.022	.011
3.20	1.60	0.89	0.61	0.56	0.28
G	H	J	K	wt	
.039	.024	.042	.123	grams	
0.99	0.61	1.07	3.12	.020	

Demo Board MCL P/N: TB-255+ Suggested PCB Layout (PL-131)



- TES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; 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, 1700 to 3400 MHz
- excellent return loss, all ports
- ultra small size, hermetically sealed
- minimal variation with temperature variation
- protected by US Patent 7,049,905
- DC current through input to output 0.5A Max. at 1.0 watt RF input power

Applications

- UMTS • CDMA
- PCS • ISM
- GPS • DCS
- TDMA

CASE STYLE: FV1206-1
PRICE: \$2.99 ea. QTY (20)
\$2.11 ea. QTY (1000)

+RoHS Compliant

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



Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500, 1000, 3000

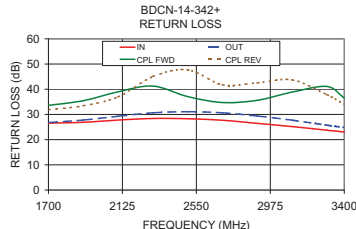
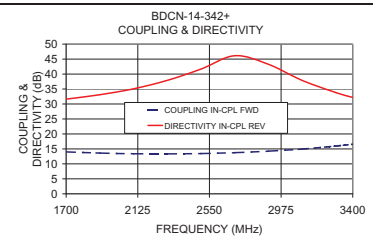
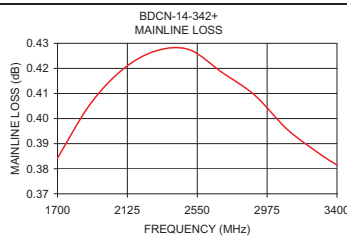
Electrical Specifications at 25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		1700	—	3400	MHz
Mainline Loss	1700-2100	—	0.4	0.55	dB
	2100-2700	—	0.45	0.6	
	2700-3400	—	0.4	0.55	
Nominal Coupling	1700-2100	—	14	—	dB
	2100-2700	—	13	—	
	2700-3400	—	15.5	—	
Coupling Flatness(±)	1700-2100	—	0.4	—	dB
	2100-2700	—	0.4	—	
	2700-3400	—	2.1	—	
Directivity	1700-2100	8	15	—	dB
	2100-2700	8	20	—	
	2700-3400	6	15	—	
Return Loss (Input)	1700-3400	—	20	—	dB
Return Loss (Output)	1700-3400	—	20	—	dB
Return Loss (Coupling)	1700-3400	—	20	—	dB
Input Power ¹	1700-3400	—	—	16	W

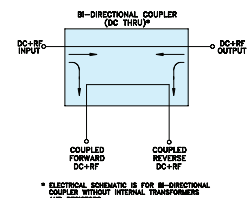
1. Derate linearly 8W at 100°C

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
1700.0	0.38	14.0	14.0	31.7	31.6	26.5	26.8	33.6	31.9
1900.0	0.41	13.6	13.6	33.4	33.1	26.9	27.8	35.4	33.5
2100.0	0.42	13.4	13.4	36.0	35.1	27.8	29.3	39.0	37.0
2300.0	0.43	13.3	13.3	40.2	37.9	28.4	30.6	41.2	45.0
2500.0	0.43	13.4	13.4	48.1	41.7	28.3	31.1	37.1	47.7
2700.0	0.42	13.7	13.7	52.6	46.1	27.7	30.6	34.7	41.8
2900.0	0.41	14.2	14.2	41.1	43.3	26.5	29.4	35.6	42.5
3100.0	0.40	14.9	14.9	36.1	37.9	25.2	27.7	38.9	43.7
3300.0	0.39	15.9	15.9	32.5	33.8	23.7	25.7	41.1	37.9
3400.0	0.38	16.6	16.5	31.1	32.2	23.0	24.8	36.5	34.0



Electrical Schematic



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