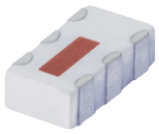
High Power

Bi-Directional Coupler

BDCN-14-22+

50Ω 14dB Coupling DC Pass 1930 to 2170 MHz



Generic photo used for illustration purposes only

CASE STYLE: FV1206-1

+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

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

Product Marking: CF

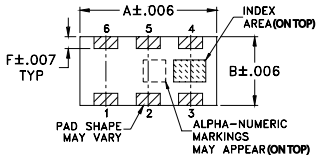
Features

- four-port coupler
- wideband, 1930 to 2170 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

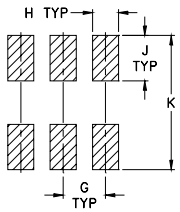
Applications

- UMTS
- PCS

Outline Drawing



PCB Land Pattern



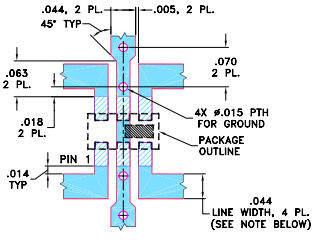
Suggested Layout,
Tolerance to be within ±.002

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)



NOTES: 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

Electrical Specifications

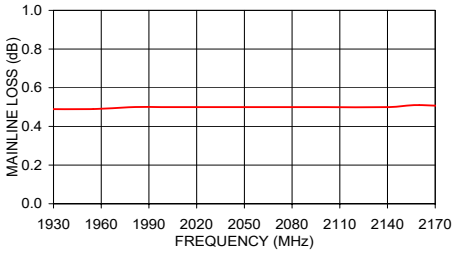
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		1930		2170	MHz
Coupling	1930 - 2170	—	13.8±1.0	—	dB
Coupling Flatness(±)	1930 - 2170	—	0.15	—	dB
Mainline Loss[1]	1930 - 1990	—	0.5	0.9	dB
	2110 - 2170	—	0.5	0.9	
Directivity	1930 - 1990	17	22	—	dB
	2110 - 2170	18	25	—	
Return Loss	1930 - 2170	—	19	—	dB
Input Power[1]	1930 - 2170	—	16	—	W

1. Derate linearly 8W at 100°C

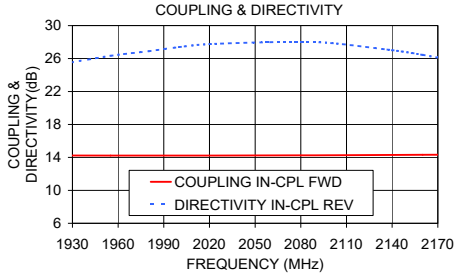
Typical Performance Data

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
1920.00	0.49	14.23	14.24	25.80	25.24	23.29	23.14	28.62	26.21
1955.00	0.49	14.22	14.23	26.88	26.34	23.91	23.07	27.94	27.00
1980.00	0.50	14.22	14.23	27.42	26.89	23.65	22.78	28.32	26.92
2000.00	0.50	14.22	14.23	27.94	27.40	23.63	23.17	29.06	26.72
2020.00	0.50	14.22	14.23	28.29	27.76	24.05	23.66	29.13	26.91
2060.00	0.50	14.24	14.24	28.51	27.99	23.96	23.09	28.50	27.10
2080.00	0.50	14.25	14.25	28.49	28.01	23.90	23.40	28.97	26.80
2100.00	0.50	14.26	14.26	28.30	27.88	24.33	23.91	29.31	27.02
2140.00	0.50	14.30	14.30	27.21	27.01	24.32	23.29	28.51	27.63
2160.00	0.51	14.32	14.32	26.57	26.45	24.23	23.60	28.57	27.36

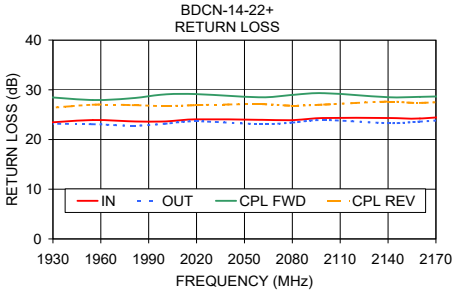
BDCN-14-22+
MAINLINE LOSS



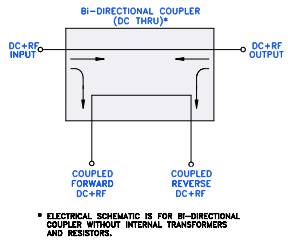
BDCN-14-22+
COUPLING & DIRECTIVITY



BDCN-14-22+
RETURN LOSS



Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITHOUT INTERNAL TRANSFORMERS AND RESISTORS.

Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp