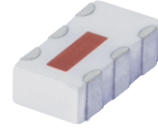


High Power Bi-Directional Coupler

BDCN-15-25+

50Ω 15dB Coupling DC Pass 824 to 2525 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 7" Devices/Reel 20, 50, 100, 200, 500, 1000, 3000

Maximum Ratings

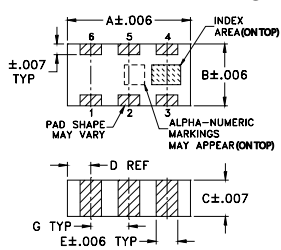
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	0.5A
Permanent damage may occur if any of these limits are exceeded.	

Pin Connections

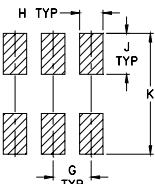
INPUT	1
OUTPUT	4
COUPLED (forward)	6
COUPLED (reverse)	3
GROUND	2,5

Product Marking: CM

Outline Drawing



PCB Land Pattern

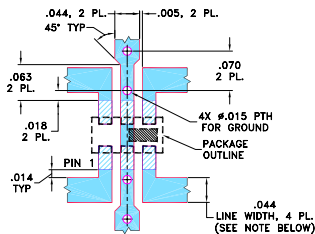


Suggested Layout, Tolerance to be within ±0.02

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 R04350B 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

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-Circuits' 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

Features

- four-port coupler
- wideband, 824 to 2525 MHz
- excellent VSWR, 1.2:1 typ., 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.

Applications

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

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.		Typ.	Max.
$f_c - f_u$									
824-2525	14.5±2.0	±3.0	0.6	1.0	13	8	1.2		16
824-894	15.0±0.6	±0.6	0.4	0.8	12	8	1.2		16
880-960	14.5±0.6	±0.6	0.5	0.9	13	8	1.2		16
1710-1880	12.5±0.6	±0.4	0.6	0.9	22	16	1.2		16
1850-1990	12.6±0.6	±0.4	0.5	0.9	22	16	1.2		16
2110-2170	13.3±0.6	±0.5	0.6	1.0	22	16	1.2		16
2375-2525	15.5±0.6	±1.5	0.6	1.0	12	8	1.2		16

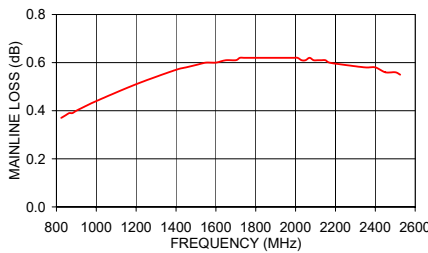
1. Includes theoretical power loss of 0.14 dB at 15 dB coupling.

2. Derate linearly 8W at 100°C

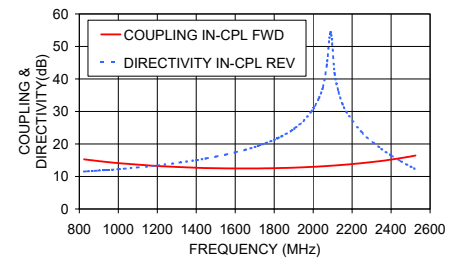
Typical Performance Data

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
824	0.37	15.28	15.27	11.53	11.52	26.01	27.03	25.99	25.58
1000	0.44	14.11	14.11	12.25	12.24	25.11	25.83	24.37	24.79
1500	0.59	12.54	12.55	16.08	16.10	24.39	23.75	23.65	24.79
1700	0.61	12.47	12.47	19.01	19.05	25.23	23.52	24.34	26.21
1840	0.62	12.61	12.61	22.34	22.42	25.17	24.04	25.02	26.08
1990	0.62	12.94	12.93	29.95	29.96	25.23	24.26	26.32	26.52
2070	0.62	13.21	13.20	45.18	45.18	25.18	24.44	26.72	26.51
2170	0.60	13.65	13.63	29.61	29.91	25.36	25.28	27.35	27.20
2350	0.58	14.78	14.74	18.39	18.50	25.16	25.93	28.29	26.93
2525	0.55	16.45	16.40	12.11	12.23	24.12	25.98	28.45	25.25

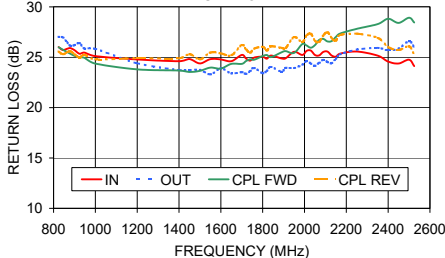
MAINLINE LOSS



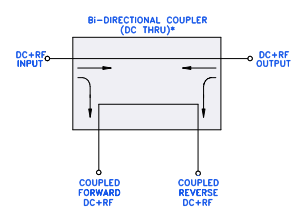
COUPLING & DIRECTIVITY



RETURN LOSS



Electrical Schematic



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

