Surface Mount

Directional Coupler

JDC-20-5+
JDC-20-5

50Ω 50 to 1500 MHz



CASE STYLE: BH292
PRICE: $ 14.95 ea. QTY (25-49)

+ 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	-40°C to 85°C
Storage Temperature	-55°C to 100°C

Pin Connections

INPUT	1
OUTPUT	6
COUPLED	3
GROUND	2,5
50 OHM TERM EXTERNAL	4

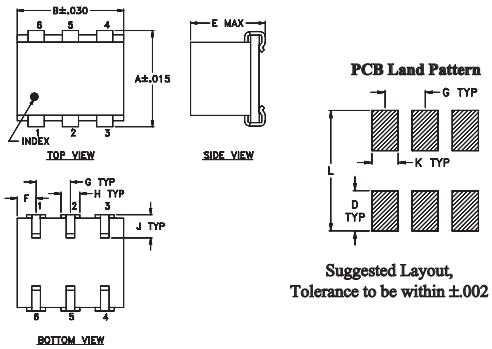
Features

- wideband, 50 to 1500 MHz
- low mainline loss, 0.5 dB typ.
- excellent solderability

Applications

- VHF/UHF
- satellite distribution
- cellular
- ISM/GSM

Outline Drawing

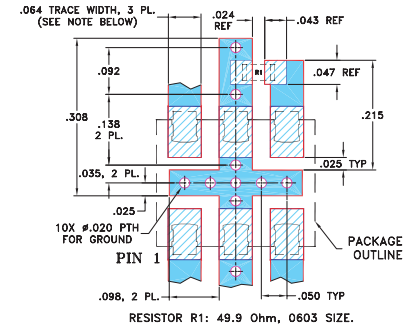


Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.280	.310	--	.100	.225	.055	.100
7.11	7.87	--	2.54	5.72	1.40	2.54

H	J	K	L	wt
.047	.065	.065	.300	grams
1.19	1.65	1.65	7.62	0.45

Demo Board MCL P/N: TB-176
Suggested PCB Layout (PL-041)



RESISTOR R1: 49.9 Ohm, 0603 SIZE.

NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; 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

Directional Coupler Electrical Specifications

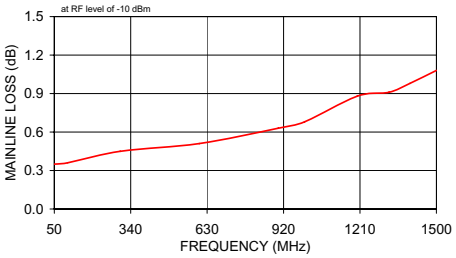
FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS[1] (dB)						DIRECTIVITY (dB)						VSWR (:1)	POWER INPUT, W	
			L		M		U		L		M		U			L	MU
f_L-f_U	Nom.	Flatness	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Max.
50-1500	20.5±0.5	±0.75	0.4	0.8	0.5	0.9	1.0	1.5	25	18	22	16	20	13	1.2	0.5	0.5

L = 50-500 MHz M = 500-750 MHz U = 750-1500 MHz
1. Mainline loss includes theoretical power loss at coupled port.

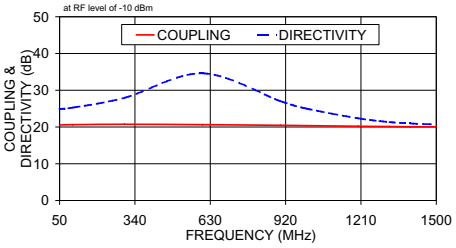
Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB) In	Return Loss (dB) Out	Return Loss (dB) Cpl
50.00	0.35	20.55	24.91	29.45	28.54	26.32
100.00	0.36	20.62	25.28	30.98	30.40	29.94
300.00	0.45	20.74	27.95	29.40	28.96	30.58
600.00	0.51	20.63	34.60	26.50	25.05	27.36
900.00	0.63	20.46	27.05	25.05	22.25	24.18
1000.00	0.68	20.37	25.02	24.77	21.36	22.99
1200.00	0.88	20.20	22.37	24.24	19.64	20.77
1320.00	0.91	20.12	21.35	24.06	18.68	19.46
1400.00	0.98	20.06	20.97	23.74	17.96	18.59
1500.00	1.08	20.07	20.69	23.62	17.22	17.51

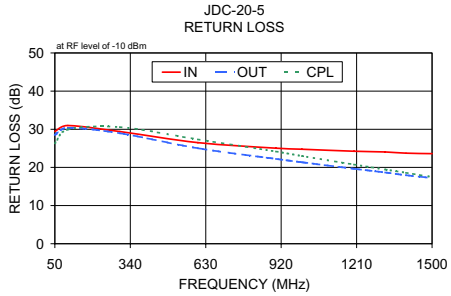
JDC-20-5
MAINLINE LOSS



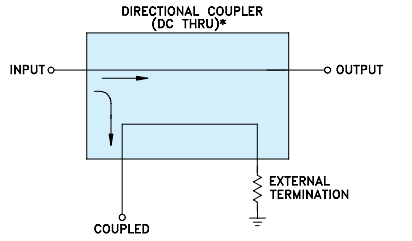
JDC-20-5
COUPLING & DIRECTIVITY



JDC-20-5
RETURN LOSS



Electrical Schematic



* ELECTRICAL SCHEMATIC FOR DIRECTIONAL COUPLERS REQUIRING EXTERNAL TERMINATION THAT IS DESIGNED WITHOUT INTERNAL TRANSFORMERS.