

# Surface Mount Directional Coupler

50Ω 300 to 1100 MHz

## LRDC-20-2J+ LRDC-20-2J



CASE STYLE: QQQ569  
PRICE: \$15.95 ea. QTY (1-9)

+ 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.

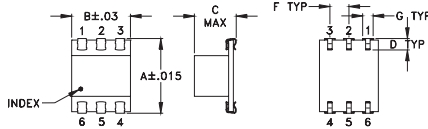
### Maximum Ratings

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

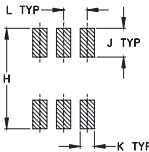
### Pin Connections

INPUT	6
OUTPUT	1
COUPLED	4
GROUND	2,5
ISOLATE (DO NOT USE)	3

### Outline Drawing



### PCB Land Pattern



Suggested Layout,  
Tolerance to be within ±.002

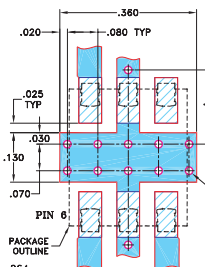
### Outline Dimensions (inch)

A	B	C	D	E	F	G
.390	.31	.225	.060	--	.100	.045
9.91	7.87	5.72	1.52	--	2.54	1.14

H	J	K	L	M	wt
.420	.120	.060	.100	--	grams
10.67	3.05	1.52	2.54	--	0.50

### Demo Board MCL P/N: TB-31 Suggested PCB Layout (PL-087)



- NOTES:
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030" ± 0.002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
  - 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

- low mainline loss, 0.25 dB typ.
- high directivity, 17 dB typ.
- aqueous washable
- J-leads for strain relief and excellent solderability

### Applications

- VHF/UHF
- cellular
- communications
- signal sampling

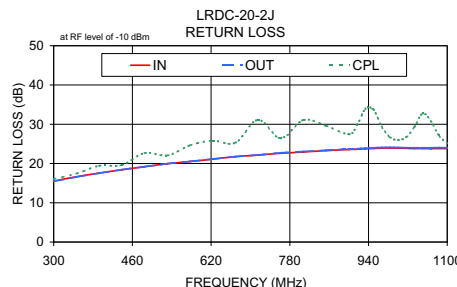
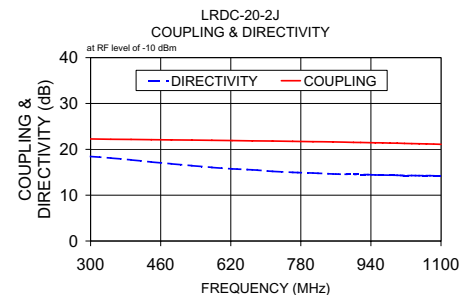
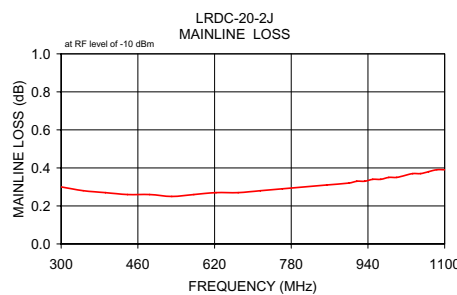
### Directional Coupler Electrical Specifications

FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS <sup>1</sup> (dB)		DIRECTIVITY (dB)		VSWR (:1)	POWER INPUT, W		
	Nom.	Flatness	Typ.	Max.	Typ.	Min.		Typ.	L Max.	MU Max.
$f_L$ - $f_U$										
300-1100	20.5±1.0	±1.3	0.25	0.6	17	10	1.2	2.0	2.0	

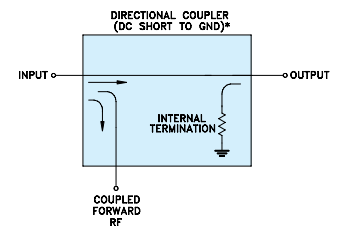
1. Mainline loss includes theoretical power loss at coupled port.

### Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
300.00	0.30	22.27	18.46	15.52	15.46	16.06
438.46	0.26	22.11	17.25	18.41	18.43	19.61
576.92	0.26	21.96	16.06	20.51	20.53	24.62
715.38	0.28	21.80	15.20	22.14	22.18	31.13
807.69	0.30	21.67	14.83	22.93	23.08	31.10
900.00	0.32	21.51	14.54	23.56	23.66	27.46
950.00	0.34	21.43	14.42	23.84	24.00	33.75
1000.00	0.35	21.33	14.34	23.91	24.09	25.94
1050.00	0.37	21.21	14.26	23.80	24.04	32.75
1100.00	0.39	21.10	14.24	23.78	24.01	25.15



### Electrical Schematic



\* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) THAT ROUTES DC FROM RF PORTS TO GROUND.

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IF/RF MICROWAVE COMPONENTS

REV. A  
M119986  
LRDC-20-2J  
WZ/TD/CP/AM  
081120