

# Surface Mount Directional Coupler

75Ω 30 to 1000 MHz

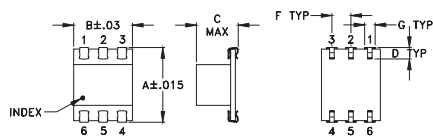
## Maximum Ratings

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

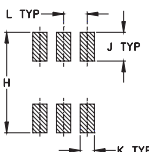
## Pin Connections

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

## Outline Drawing



### PCB Land Pattern

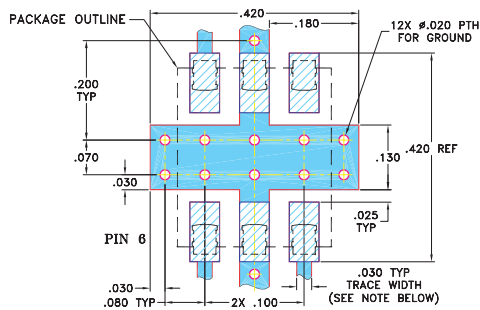


Suggested Layout,  
Tolerance to be within ±.002

## 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-34 Suggested PCB Layout (PL-043)



- NOTES: 1. 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.  
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

- low mainline loss, 1.1 dB typ.
- high directivity, 22 dB typ.
- aqueous washable
- J-leads for strain relief and excellent solderability

## Applications

- VHF/UHF
- cellular
- communications
- cable tv

# LRDC-10-2-75J+ LRDC-10-2-75J



CASE STYLE: QQQ569  
PRICE: \$13.95 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.

## Directional Coupler Electrical Specifications

FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS <sup>1</sup> (dB)						DIRECTIVITY (dB)						VSWR (:1)	POWER INPUT, W		
	Nom.	Flatness	L		M		U		L		M		U			Typ.	L	MU
			Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.				
f <sub>L</sub> -f <sub>U</sub>			1.0	1.5	1.1	1.5	1.3	1.8	21	17	22	17	19	15	1.3	1.0	1.0	
30-1000	10.0±0.5	±0.6																

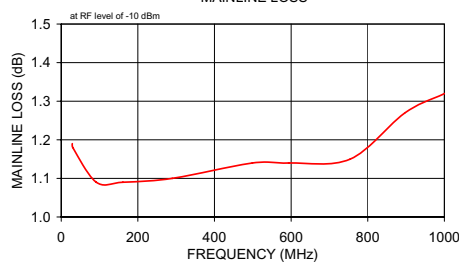
L = low range [f<sub>L</sub> to 10 f<sub>L</sub>] M = mid range [10 f<sub>L</sub> to f<sub>U</sub>/2] U = upper range [f<sub>U</sub>/2 to f<sub>U</sub>]

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

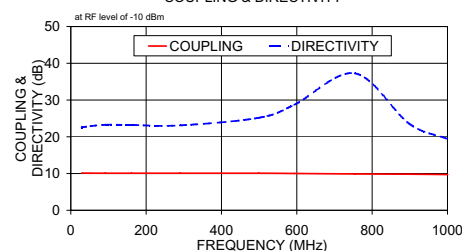
## Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
28.88	1.19	10.13	22.47	17.24	22.09	17.46
30.16	1.18	10.12	22.61	17.35	22.42	17.57
91.46	1.09	10.08	23.28	19.85	35.09	20.23
161.00	1.09	10.08	23.22	20.96	37.04	21.47
289.64	1.10	10.08	23.11	22.21	26.01	23.37
498.87	1.14	10.08	25.17	23.34	21.75	26.81
593.68	1.14	10.03	28.72	24.21	21.99	28.05
754.14	1.15	9.89	37.29	26.06	25.35	28.78
897.47	1.27	9.83	23.63	25.07	32.45	28.13
1000.56	1.32	9.71	19.42	22.80	31.75	28.13

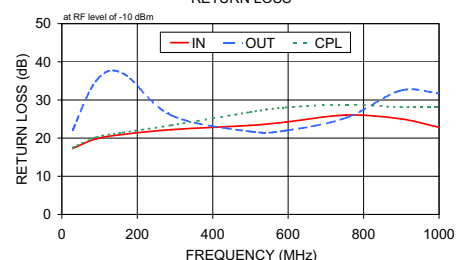
LRDC-10-2-75J  
MAINLINE LOSS



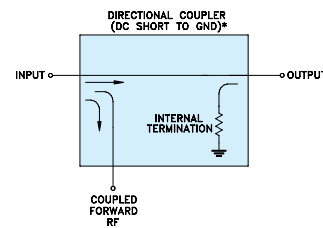
LRDC-10-2-75J  
COUPLING & DIRECTIVITY



LRDC-10-2-75J  
RETURN LOSS



## 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-10-2-75J  
WZ/TD/CP/AM  
081124