

# Surface Mount Directional Coupler

## LRDC-12-1-75

75Ω 5 to 600 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

### Features

- low mainline loss, 0.5 dB typ.
- high directivity, 21 dB typ.

### Applications

- VHF/UHF
- signal sampling
- communications
- cable tv

CASE STYLE: QQQ130

PRICE: \$11.95 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

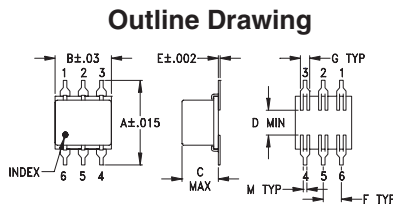
FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS <sup>1</sup> (dB)						DIRECTIVITY (dB)						VSWR (:1)	POWER INPUT, W	
	Nom.	Flatness	L		M		U		L		M		U			L	MU
$f_L$ - $f_U$			Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Max.
5-600	12.2±0.5	±0.6	0.4	0.8	0.5	1.0	0.8	1.5	20	17	21	18	20	12	1.3	1.0	1.0

L = low range [ $f_L$  to  $10 f_L$ ] M = mid range [ $10 f_L$  to  $f_U/2$ ] U = upper range [ $f_U/2$  to  $f_U$ ]

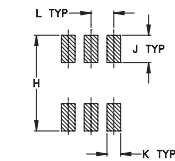
1. Mainline loss includes theoretical power loss at coupled port.

### Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
5.00	0.68	12.25	27.30	24.93	36.02	24.62
6.00	0.67	12.24	27.29	25.25	37.90	24.76
8.00	0.66	12.24	27.30	25.59	41.55	24.92
10.00	0.67	12.24	27.29	25.75	45.26	24.96
100.00	0.69	12.26	25.97	24.35	29.52	24.21
200.00	0.71	12.27	23.92	21.73	23.91	23.15
300.00	0.77	12.28	22.07	19.81	20.80	21.77
400.00	0.79	12.20	20.71	18.62	19.03	20.45
500.00	0.84	12.11	19.85	18.13	18.22	19.44
600.00	0.92	12.05	19.38	18.26	18.28	18.73



### PCB Land Pattern

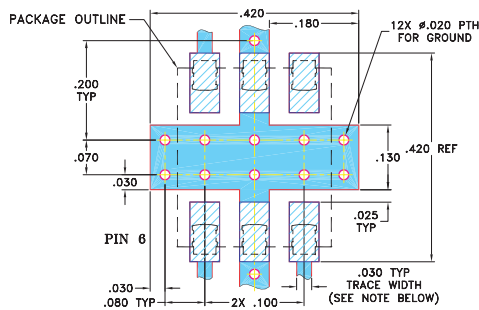


Suggested Layout, Tolerance to be within ±.002

### Outline Dimensions (inch)

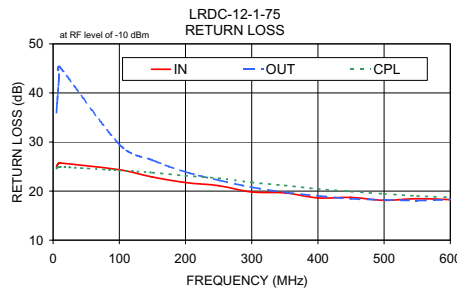
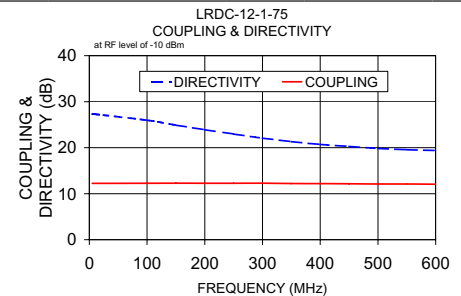
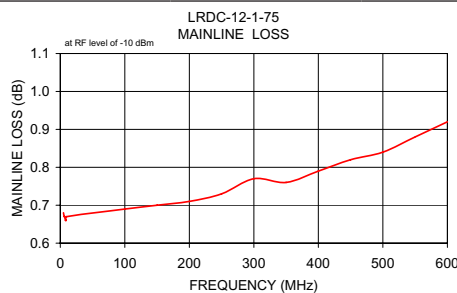
A	B	C	D	E	F	G
.400	.31	.200	.10	.010	.100	.050
10.16	7.87	5.08	2.54	0.25	2.54	1.27
H	J	K	L	M	wt	
.420	.120	.060	.100	.020	grams	
10.67	3.05	1.52	2.54	0.51	grams	0.55

### Demo Board MCL P/N: TB-34 Suggested PCB Layout (PL-043)

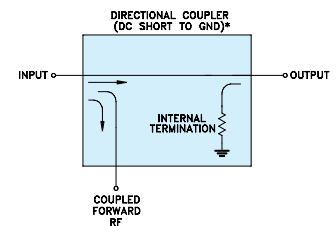


NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS 0.030" ± 0.002"; COPPER: 1/2 OZ., EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.  
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK



### 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

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