

# Surface Mount Attenuator/Switch

## LRAS-2-75

75Ω Bi-Phase 10 to 1000 MHz



CASE STYLE: QQQ130  
PRICE: \$9.95 ea. QTY. (1-9)

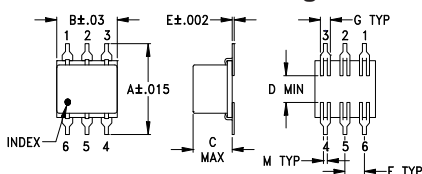
### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Control Current	30mA
Permanent damage may occur if any of these limits are exceeded.	

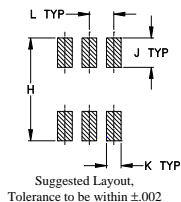
### Pin Connections

INPUT	4
OUTPUT	1
CONTROL	5
GROUND	2,3,6

### Outline Drawing



### PCB Land Pattern



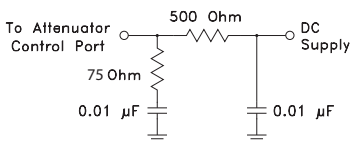
### Outline Dimensions (inch)

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

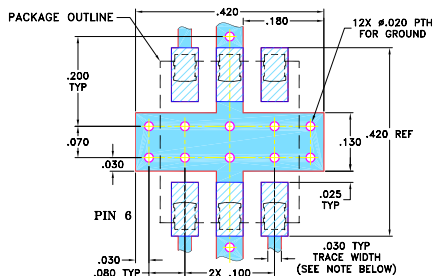
  

H	J	K	L	M	wt
.420	.120	.060	.100	.020	grams
10.67	3.05	1.52	2.54	0.51	0.55

### suggested control port biasing configuration



### 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  
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine

### Features

- wideband, 10 to 1000 MHz
- excellent phase and amplitude unbalance

### Applications

- bi-phase modulator

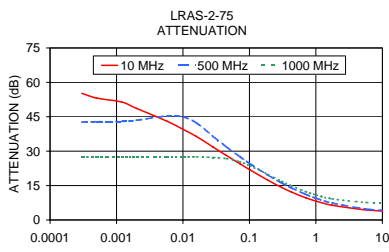
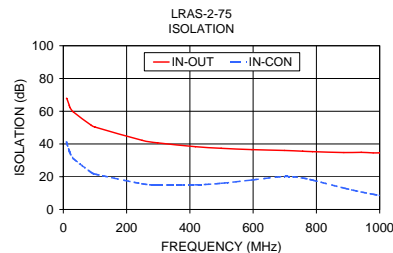
### Attenuator/Switch Electrical Specifications

FREQUENCY (MHz)	INSERTION LOSS (dB) ±20 mA	MAX. INPUT PWR (dBm) ±20 mA	IN-OUT ISOLATION (dB) 0 mA			BI-PHASE X (±20 mA) Typ.						
			L	M	U	Δ AMP (dB)	Phase (deg.) deviation from 180°					
10-1000	DC-0.05	1 dB compr. no damage	Typ. 58	Min. 40	Typ. 42	Min. 28	Typ. 39	Min. 20	0.15	0.3	1.5	3.0

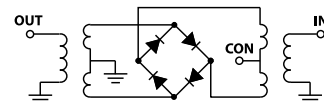
L = low range [ $f_L$  to  $10 f_L$ ] M = mid range [ $10 f_L$  to  $f_U/2$ ] U = upper range [ $f_U/2$  to  $f_U$ ] m = [  $2 f_L$  to  $f_U/2$  ]  
Performance specifications apply for input power up to 10 dB below stated 1 dB compression.

### Typical Performance Data

Freq. (MHz)	I. Loss (dB) at 20mA	±Control ΔAMP (dB)	ΔPhase (deg.)	20mA Isolation (dB) (in-out)	Input R. Loss (dB) (in-con)	Control Current (mA)	Attenuation (dB)			Phase Δ ref at 15mA Ctrl			Input VSWR				
							10 MHz	500 MHz	1000 MHz	10 MHz	500 MHz	1000 MHz	10 MHz	500 MHz	1000 MHz		
10.0	3.85	0.03	0.02	179.9	68	41	10.1	0.0000	72.9	42.4	27.4	77.0	123.7	-103.5	2.1	3.1	3.1
11.1	3.82	0.03	0.02	179.9	68	40	10.2	0.0003	55.2	42.7	27.4	11.3	120.0	-102.9	2.1	3.1	3.1
18.9	3.74	0.03	0.02	179.9	63	36	10.6	0.0005	53.2	42.9	27.5	7.8	118.9	-102.6	2.1	3.1	3.1
20.0	3.74	0.03	0.02	180.0	63	35	10.7	0.0012	51.4	43.0	27.5	3.9	117.5	-102.4	2.1	3.1	3.1
31.6	3.76	0.02	0.02	180.0	60	31	10.7	0.0020	48.6	43.5	27.5	-0.2	112.3	-101.5	2.1	3.1	3.1
88.8	3.89	0.03	0.02	179.9	51	23	10.3	0.0057	43.1	45.3	27.5	1.3	90.0	-98.1	2.1	3.1	3.0
100.0	3.92	0.03	0.02	179.9	50	22	10.2	0.0100	39.5	44.9	27.5	3.7	57.7	-94.3	2.0	3.1	3.0
249.1	4.03	0.04	0.03	179.8	42	16	8.9	0.0159	36.4	42.4	27.5	5.1	30.2	-89.7	2.0	3.1	3.0
297.8	4.07	0.05	0.03	179.8	41	15	8.5	0.0285	31.8	36.4	27.2	6.5	7.1	-79.2	2.0	3.0	2.9
417.3	4.11	0.07	0.05	179.6	38	15	7.9	0.0446	28.2	32.0	26.8	7.2	-1.1	-68.6	1.9	2.9	2.8
498.9	4.00	0.08	0.06	179.2	37	16	7.9	0.0715	24.6	27.7	25.4	7.4	-5.8	-54.2	1.8	2.8	2.7
596.4	3.94	0.09	0.08	178.5	37	18	8.5	0.1020	21.8	24.5	23.6	7.5	-7.7	-43.6	1.7	2.7	2.6
699.0	3.81	0.10	0.11	177.8	36	20	10.0	0.1879	17.4	19.7	20.0	7.0	-9.0	-27.2	1.5	2.5	2.4
756.8	3.86	0.12	0.11	177.5	36	19	11.1	0.3050	14.2	16.2	16.9	6.3	-8.9	-17.7	1.4	2.3	2.2
787.4	3.89	0.14	0.15	177.4	35	18	12.0	0.4255	12.2	14.0	14.9	5.7	-8.5	-12.5	1.2	2.1	2.0
887.0	4.40	0.24	0.24	176.4	35	13	13.7	0.7057	9.7	11.2	12.3	4.5	-7.4	-6.6	1.1	2.0	1.8
941.4	4.82	0.31	0.39	175.6	35	11	15.6	0.9950	8.3	9.6	10.9	3.7	-6.6	-3.4	1.2	1.9	1.6
979.5	5.15	0.36	0.39	175.1	35	9	15.2	1.7446	6.5	7.4	9.2	2.5	-4.9	0.2	1.4	1.8	1.5
999.1	5.30	0.38	0.40	175.0	35	9	14.5	5.6985	4.4	4.8	7.6	0.6	-1.6	1.8	1.8	1.8	1.2
1019.2	5.47	0.41	0.45	175.1	35	8	13.8	15.0090	3.7	3.9	7.3	0.0	0.0	0.1	2.1	1.9	1.1



### electrical schematic



For detailed performance specs & shipping online see web site

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