

Surface Mount Frequency Mixer

ADE-20+ ADE-20

Level 7 (LO Power +7 dBm) 1500 to 2000 MHz



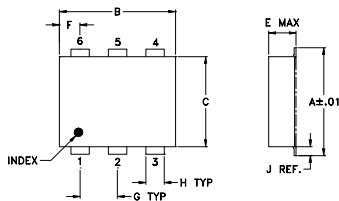
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

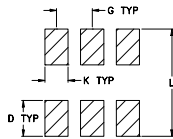
Pin Connections

LO	6
RF	4
IF	3
GROUND	1,2,5

Outline Drawing



PCB Land Pattern



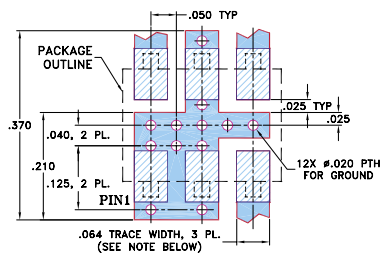
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.112	.055	.100
6.91	7.87	5.59	2.54	2.84	1.40	2.54

H	J	K	L	wt
.030	.026	.065	.300	grams
0.76	0.66	1.65	7.62	0.20

Demo Board MCL P/N: TB-02 Suggested PCB Layout (PL-051)



- NOTES:**
- 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.
 - 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 conversion loss, 5.4 dB typ.
- excellent isolation, 31 dB typ.
- low profile package
- aqueous washable
- protected by U.S. Patent 6,133,525

Applications

- digital cellular
- digital cordless phone
- PCN

Electrical Specifications

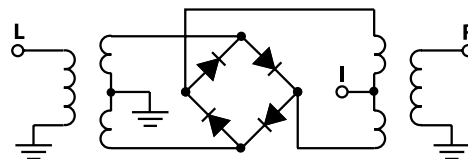
FREQUENCY (MHz)	CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
	LO/RF	IF		Typ.	Min.	Typ.	Min.	
1500-2000	$f_L \cdot f_U$	DC-300	\bar{X} σ Max.	31	22	28	20	14
				5.4	0.10	7.8		

1 dB COMP.: +1 dBm typ.

Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
1500.00	1530.00	5.80	37.30	31.70	1.59	1.21
1535.71	1565.71	5.77	36.90	32.60	1.49	1.31
1571.43	1601.43	5.78	36.50	32.90	1.46	1.41
1600.00	1630.00	5.87	36.30	32.90	1.45	1.49
1607.14	1637.14	5.76	36.20	32.90	1.43	1.52
1642.86	1672.86	5.78	36.00	33.00	1.40	1.57
1650.00	1680.00	5.91	36.00	33.00	1.41	1.60
1678.57	1708.57	5.87	35.70	32.90	1.41	1.66
1700.00	1730.00	5.94	35.40	33.10	1.40	1.68
1714.29	1744.29	5.96	35.30	33.00	1.40	1.69
1750.00	1780.00	5.97	35.10	33.00	1.44	1.71
1785.71	1815.71	5.96	35.20	33.00	1.48	1.70
1800.00	1830.00	6.04	35.20	33.20	1.48	1.69
1821.43	1851.43	5.97	35.40	33.20	1.52	1.68
1857.14	1887.14	5.96	35.70	33.20	1.59	1.67
1892.86	1922.86	6.00	36.10	33.20	1.61	1.61
1900.00	1930.00	5.98	36.20	33.20	1.62	1.60
1928.57	1958.57	5.99	36.30	33.20	1.70	1.57
1964.29	1994.29	5.94	36.60	33.10	1.78	1.50
2000.00	2030.00	5.93	36.60	33.10	1.84	1.46

Electrical Schematic



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RF/IF MICROWAVE COMPONENTS

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Performance Charts

