Surface Mount

Frequency Mixer

ADE-10H

Level 17 (LO Power +17 dBm) 10 to 1000 MHz

Generic photo used for illustration purposes only

CASE STYLE: CD542

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

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

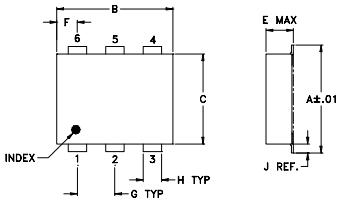
Features

- excellent L-R isolation, 55 dB typ.
- excellent conversion loss flatness, ±0.35 dB typ. over entire band
- low conversion loss, 7.0 dB typ.
- good VSWR, 1.4:1 typ. for LO, 1.6:1typ. for RF, 1.4:1 typ. for IF
- good performance to 1500 MHz
- aqueous washable
- protected by U.S. Patents 6,133,525 and 6,947,717

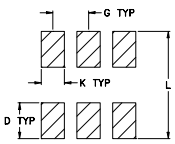
Applications

- cellular
- PCN

Outline Drawing



PCB Land Pattern



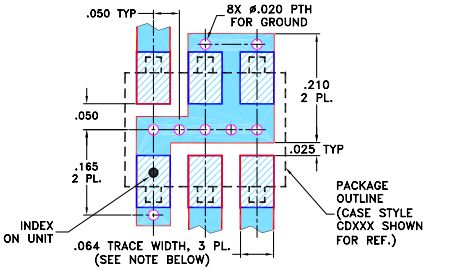
Suggested Layout,
Tolerance to be within ±.002

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-03
Suggested PCB Layout (PL-052)



NOTES: 1. 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.
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 Specifications

FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)						LO-IF ISOLATION (dB)						IP3 at center band (dBm)
		Mid-Band m			Total Range	L		M		U		L		M		U		
LO/RF f_L-f_U	IF	$\overline{X}$	σ	Max.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.
10-1000	DC-800	7.0	0.10	8.5†	9.5†	68	55	55	40	47	31	46	30	32	20	26	13	22

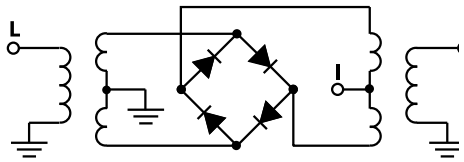
1 dB COMP.: +14 dBm typ.
†Conversion loss increases 0.5 dB when IF is above 150 MHz

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= mid band [2f_L to f_U/2]

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 +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
10.0	40.0	7.3	74.1	50.8	1.6	1.1
22.0	52.0	7.2	71.8	48.3	1.6	1.1
40.0	70.0	7.3	69.3	45.9	1.6	1.1
52.0	82.0	7.3	68.1	44.5	1.6	1.2
70.0	100.0	7.3	66.7	42.7	1.5	1.2
88.0	118.0	7.3	66.0	41.2	1.5	1.2
94.0	124.0	7.2	65.8	40.8	1.5	1.2
100.0	130.0	7.2	65.5	40.4	1.5	1.2
160.0	190.0	7.2	61.7	36.8	1.5	1.3
220.0	250.0	7.0	58.6	34.0	1.5	1.3
280.0	310.0	7.1	56.7	32.8	1.5	1.3
400.0	430.0	7.2	57.3	32.2	1.5	1.3
460.0	490.0	7.2	53.7	31.8	1.5	1.4
520.0	550.0	7.2	50.0	31.5	1.5	1.4
580.0	610.0	7.3	49.1	30.6	1.5	1.4
700.0	730.0	7.7	45.6	29.9	1.6	1.5
760.0	790.0	7.8	44.2	28.5	1.6	1.7
820.0	850.0	7.7	41.9	26.5	1.5	1.7
940.0	970.0	7.5	36.6	23.5	1.4	1.9
1000.0	1030.0	7.4	35.4	22.5	1.3	2.0

Electrical Schematic



Notes
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