Surface Mount

Frequency Mixer

ADE-1MH+
ADE-1MH

Level 13 (LO Power +13 dBm) 2 to 500 MHz

CASE STYLE: CD542
PRICE: $5.95 ea. QTY (10)

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

- good L-R isolation, 50 dB typ.
  L-I isolation, 45 dB typ.
- low profile package
- aqueous washable
- protected by U.S. Patent 6,133,525

+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

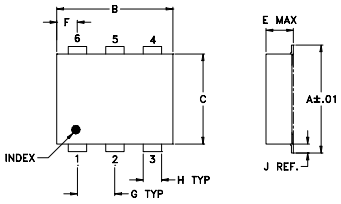
Applications

- cellular
- VHF/UHF receivers

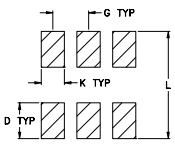
Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	10, 20, 50, 100, 200, 500
13"	500, 1000

Outline Drawing



PCB Land Pattern



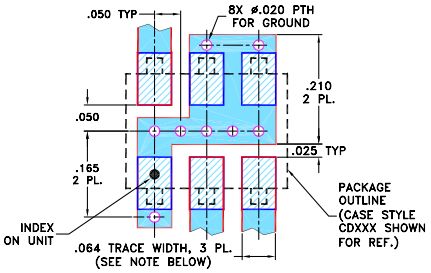
Suggested Layout,
Tolerance to be within ±.002

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.
2-500	DC-500	5.2	0.10	6.5	8.0	60	45	50	35	48	25	55	40	45	30	40	22	17

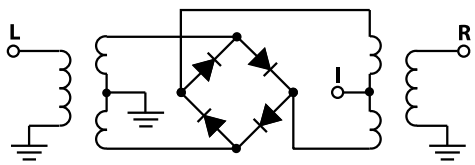
1 dB COMP.: +9 dBm typ.

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 +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm
2.00	32.00	6.40	61.50	52.50	1.48	2.37
5.00	35.00	5.96	60.83	51.00	1.24	2.37
10.00	40.00	5.71	60.00	51.00	1.15	2.46
20.00	50.00	5.63	58.00	49.67	1.10	2.51
35.10	65.10	5.49	55.50	48.00	1.08	2.46
50.00	80.00	5.62	53.83	46.17	1.07	2.41
70.09	100.09	5.57	53.01	44.50	1.06	2.46
105.09	135.09	5.52	50.16	40.67	1.05	2.36
140.08	170.08	5.48	48.66	41.00	1.05	2.41
175.08	205.08	5.74	50.67	40.00	1.09	2.36
210.07	240.07	5.82	48.84	39.50	1.11	2.46
245.07	275.07	5.78	47.00	38.17	1.12	2.51
250.00	280.00	5.79	46.83	38.17	1.12	2.46
280.06	310.06	5.71	47.00	37.17	1.12	2.51
350.05	380.05	5.82	43.50	35.17	1.14	2.51
385.05	415.05	5.92	41.17	33.00	1.19	2.61
420.04	450.04	5.88	39.83	30.67	1.24	2.67
470.00	500.00	5.72	38.50	30.67	1.27	2.67
490.03	520.03	5.86	38.00	30.34	1.26	2.79
500.00	530.00	5.67	37.33	30.33	1.26	2.67

Electrical Schematic



For detailed performance specs & shopping online see web site

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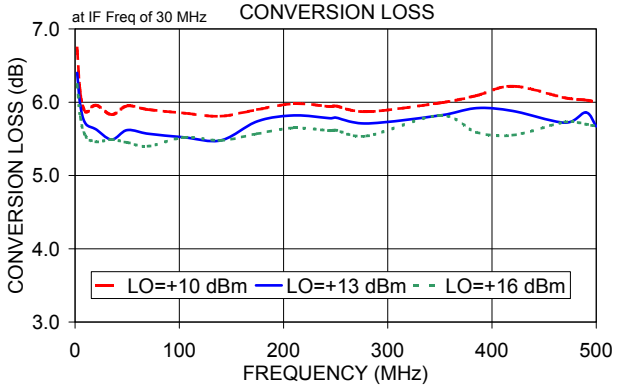
IF/RF MICROWAVE COMPONENTS

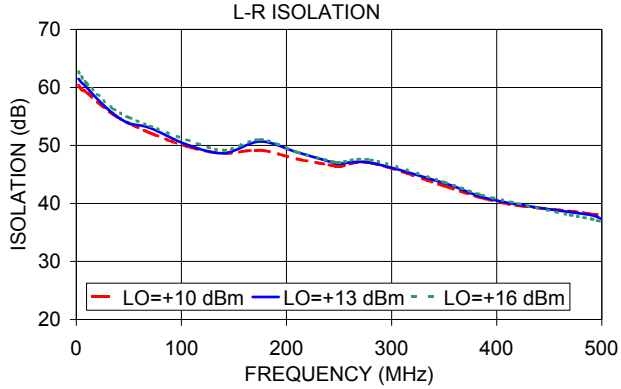
REV. E
M102713
ADE-1MH
ED-7022/1
DJ/TD/CP/AM
120820

Performance Charts

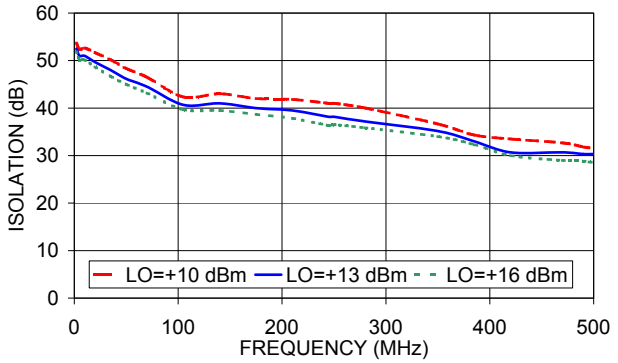
ADE-1MH
CONVERSION LOSS
at IF Freq of 30 MHz



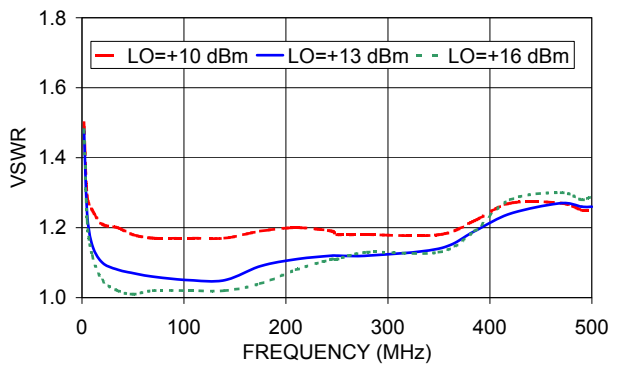
ADE-1MH
L-R ISOLATION



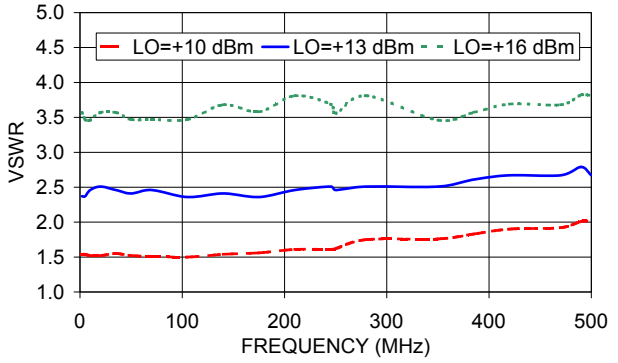
ADE-1MH
L-I ISOLATION



ADE-1MH
RF VSWR



ADE-1MH
LO VSWR



ADE-1MH
IF VSWR