

High Reliability Mixer

ADE-R1MHW+

Level 13 (LO Power +13 dBm) 5 to 600 MHz



CASE STYLE: CD542

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

Available Tape and Reel at no extra cost

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

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

- hermetically sealed ceramic quad
- low conversion loss, 5.2 dB typ.
- excellent L-R isolation, 53 dB typ.
- excellent IP3, 18 dBm typ.
- low profile package
- aqueous washable
- protected by US patent 6,133,525

Applications

- HF/VHF/UHF/ receivers

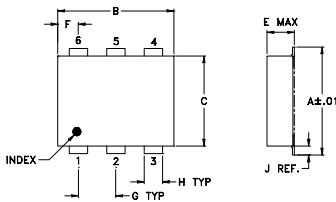
Electrical Specifications

FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3 at center band (dBm)						
LO/RF	IF	Mid-Band		Total Range	L	M	U	L	M	U								
f_L - f_U		\bar{X}	σ	Max.	Max.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ.						
5-600	DC-600	5.2	0.10	6.9	8.0	63	50	53	35	43	27	56	40	44	28	30	20	18

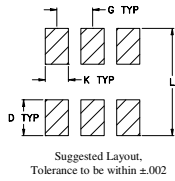
1 dB COMP: +9 dBm typ.

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 $f_U/2$]

Outline Drawing



PCB Land Pattern

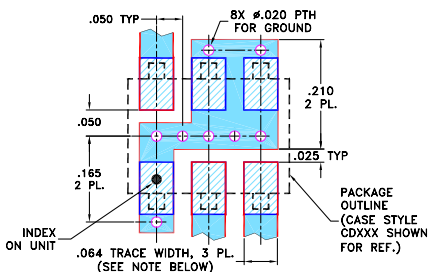


Outline Dimensions (inch/mm)

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

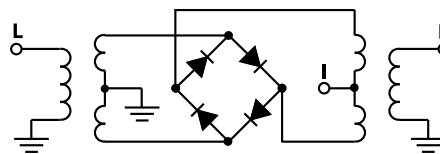
Notes

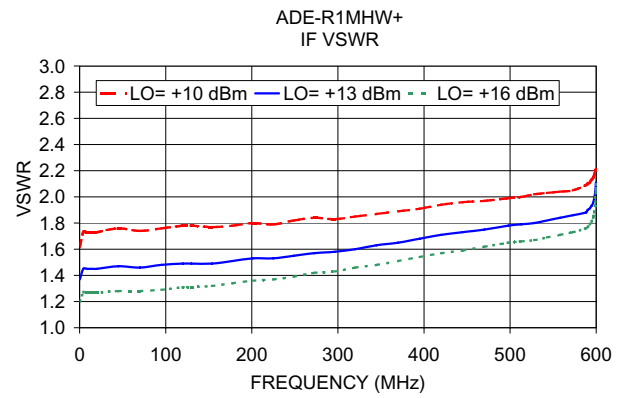
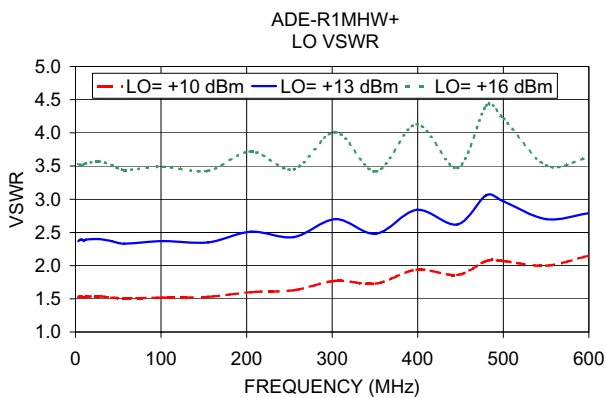
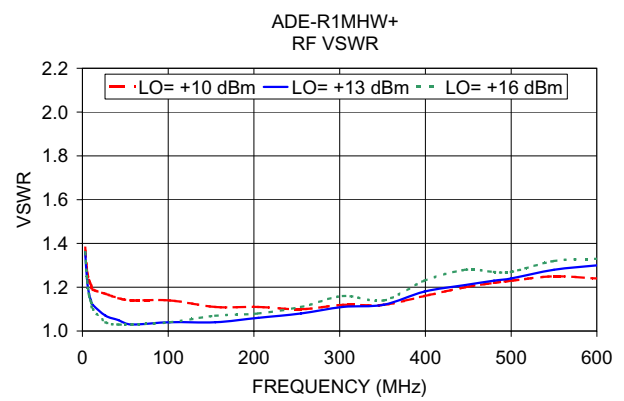
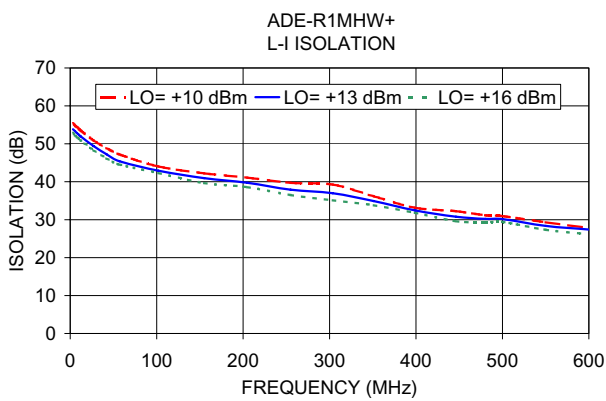
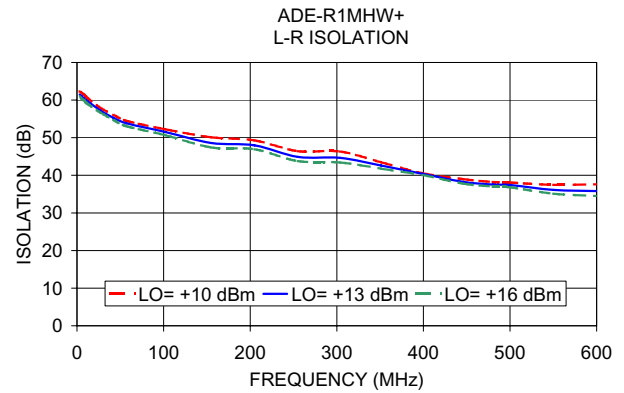
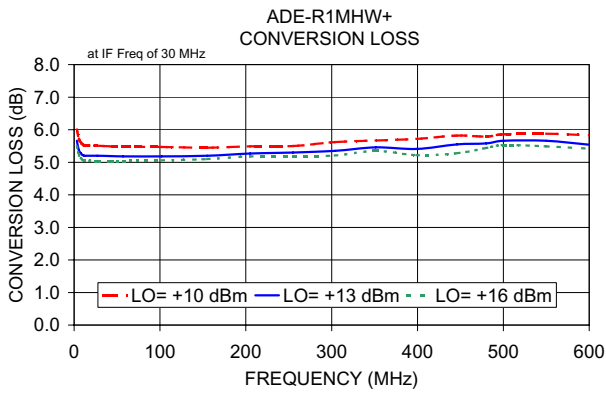
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Typical Performance Data

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
3.25	33.25	5.66	61.47	53.84	1.36	2.37
5.50	35.50	5.38	60.99	53.36	1.23	2.39
7.75	37.75	5.28	60.52	52.86	1.17	2.39
10.00	40.00	5.22	60.02	52.39	1.14	2.37
12.00	42.00	5.20	59.77	51.99	1.12	2.39
27.00	57.00	5.20	57.23	49.41	1.07	2.40
42.00	72.00	5.19	55.28	47.25	1.05	2.37
57.00	87.00	5.18	53.83	45.41	1.03	2.33
102.00	132.00	5.18	51.52	42.92	1.04	2.37
155.00	185.00	5.20	48.58	40.94	1.04	2.35
205.00	235.00	5.27	47.97	39.72	1.06	2.51
255.00	285.00	5.30	44.90	37.91	1.08	2.43
303.75	333.75	5.35	44.64	36.96	1.11	2.70
351.25	381.25	5.46	42.61	34.91	1.12	2.48
398.75	428.75	5.41	40.40	32.47	1.18	2.84
446.25	476.25	5.55	38.26	30.77	1.21	2.62
480.00	510.00	5.58	37.54	30.22	1.23	3.06
500.00	530.00	5.66	37.42	30.16	1.24	2.97
550.00	580.00	5.66	36.13	28.38	1.28	2.70
600.00	630.00	5.54	35.82	27.39	1.30	2.79

Electrical Schematic





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