

# Surface Mount High Reliability Mixer

Level 7 (LO Power +7 dBm) 1 to 500 MHz

## ADE-R1+



CASE STYLE: CD636

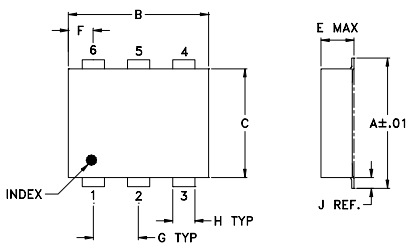
### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA
Permanent damage may occur if any of these limits are exceeded.	

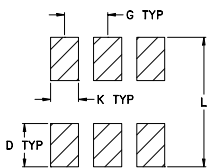
### Pin Connections

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

### Outline Drawing



### PCB Land Pattern

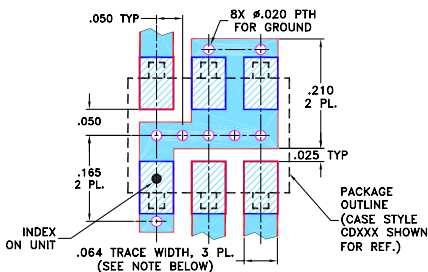


Suggested Layout,  
Tolerance to be within ±.002

### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.162	.055	.100
6.91	7.87	5.59	2.54	4.11	1.40	2.54
H	J	K	L	wt		
.030	.026	.065	.300	grams		
0.76	0.66	1.65	7.62	0.25		

### 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

### Features

- hermetically sealed ceramic quad
- low conversion loss, 5.0 dB typ.
- excellent L-R isolation, 60 dB typ.
- excellent IP3, 15 dBm typ.
- low profile package
- aqueous washable
- protected by US Patent 6,133,525

### Applications

- VHF/UHF

### Electrical Specifications

FREQUENCY (MHz)	CONVERSION LOSS (dB)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3 at center band (dBm)						
		L	M	U	L	M	U							
1-500	DC-500	75	55	60	40	45	33	65	45	45	26	30	18	15

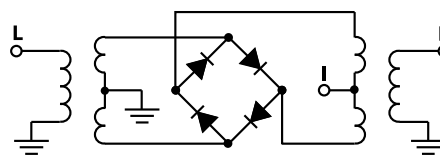
1 dB COMP.: +1 dBm typ.

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)
	LO	+7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
1.00	31.00	5.84	66.73	52.03	1.49	2.70
2.00	32.00	5.25	66.51	51.78	1.30	2.69
4.00	34.00	5.07	66.10	51.33	1.20	2.70
6.00	36.00	4.97	65.72	50.89	1.16	2.69
8.00	38.00	4.91	65.36	50.47	1.14	2.69
10.00	40.00	4.87	65.04	50.08	1.13	2.71
46.00	76.00	4.71	61.38	44.53	1.09	2.67
82.00	112.00	4.85	59.91	41.61	1.08	2.65
100.00	130.00	4.89	59.61	40.67	1.07	2.67
140.00	170.00	4.91	59.80	38.95	1.06	2.72
180.00	210.00	4.99	56.82	37.33	1.03	2.72
200.00	230.00	4.89	56.13	36.89	1.04	2.80
240.00	270.00	4.86	55.32	35.95	1.03	2.76
280.00	310.00	4.97	49.33	34.37	1.02	2.89
300.00	330.00	5.31	47.40	34.01	1.03	2.97
340.00	370.00	5.15	44.44	32.36	1.04	2.81
380.00	410.00	5.16	42.74	29.59	1.08	2.97
400.00	430.00	5.25	42.53	28.70	1.07	3.05
440.00	470.00	5.41	42.66	27.02	1.01	2.94
500.00	530.00	5.94	42.49	26.54	1.18	3.24

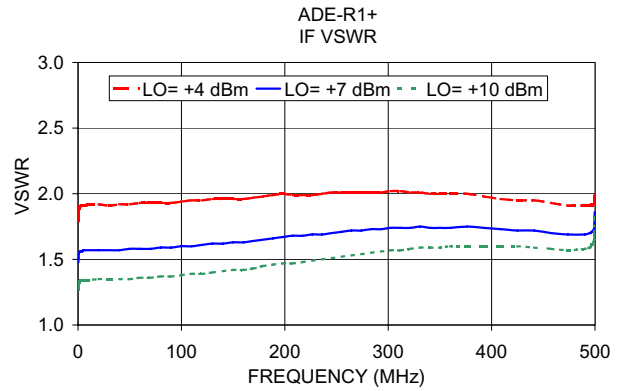
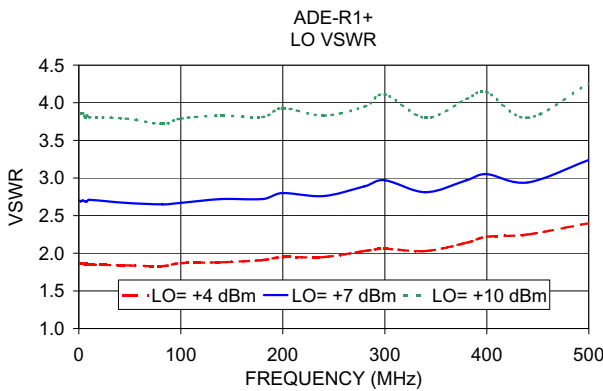
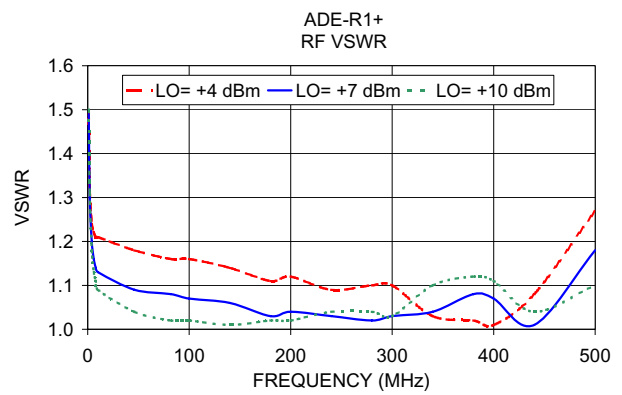
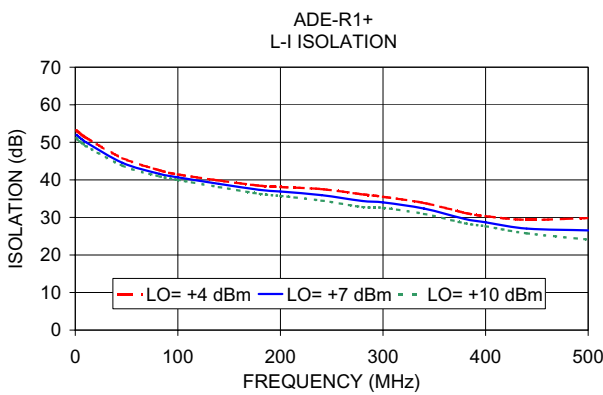
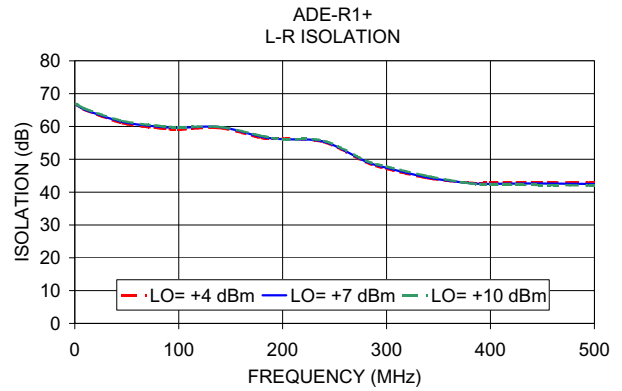
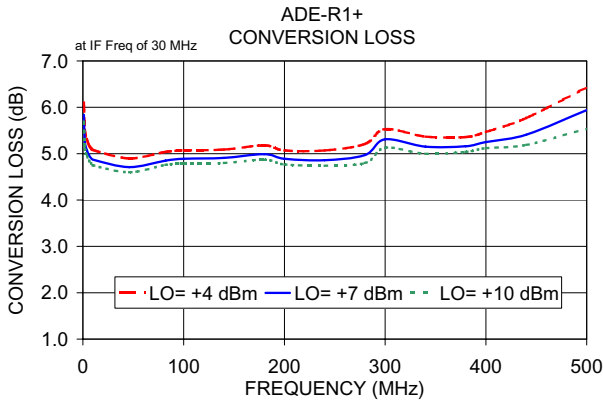
### Electrical Schematic



### Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.  
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