

# Surface Mount Frequency Mixer

## ADE-2

### Level 7 (LO Power +7 dBm) 5 to 1000 MHz



Generic photo used for illustration purposes only

CASE STYLE: CD542

#### Maximum Ratings

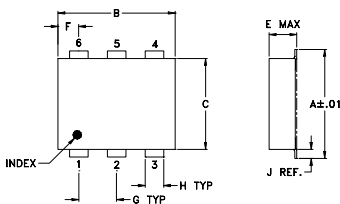
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

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

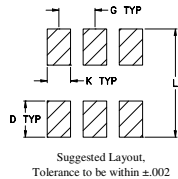
#### Pin Connections

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

#### Outline Drawing



#### PCB Land Pattern



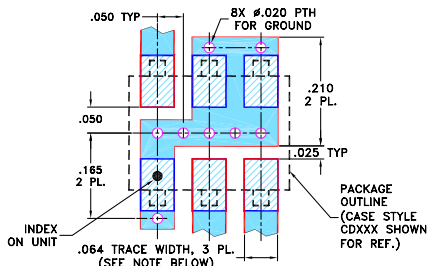
#### Outline Dimensions (inch/mm)

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:**
- 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

#### Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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#### Features

- excellent L-R isolation, 47 dB typ.
- low profile package
- aqueous washable
- protected by U.S. Patent 6,133,525

#### Applications

- cellular
- PCS

#### 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							
5-1000	DC-1000	60	40	47	25	32	22	62	35	45	25	32	20	20

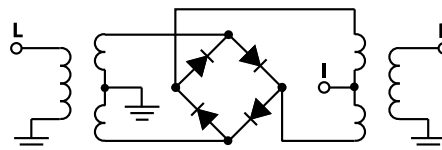
1 dB COMP.: +1 dBm typ.

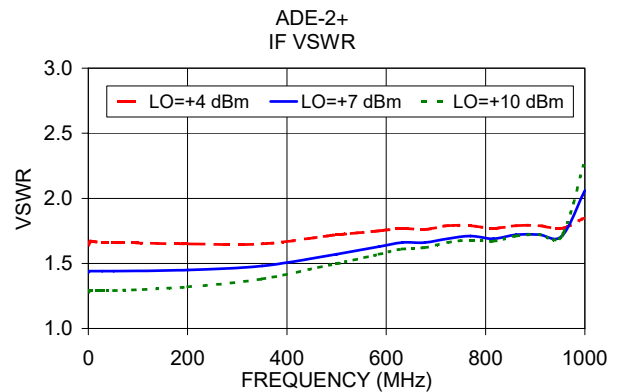
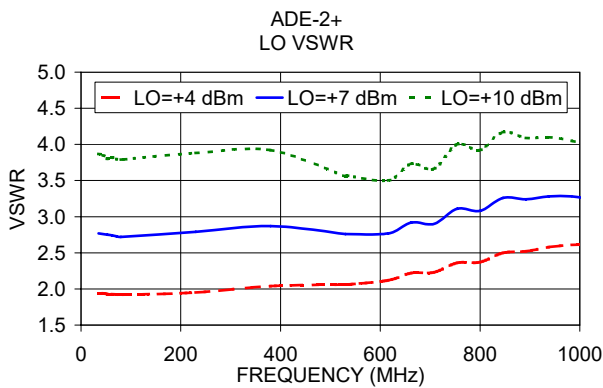
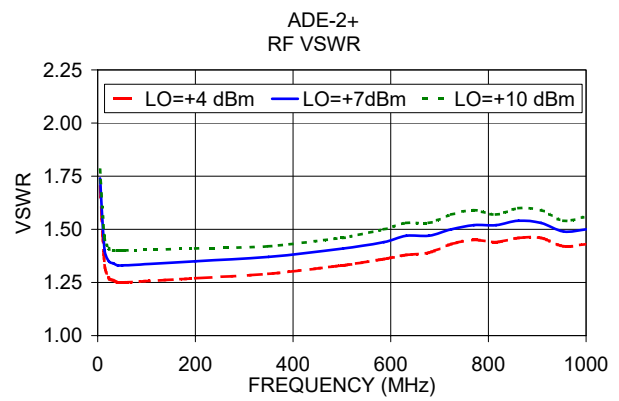
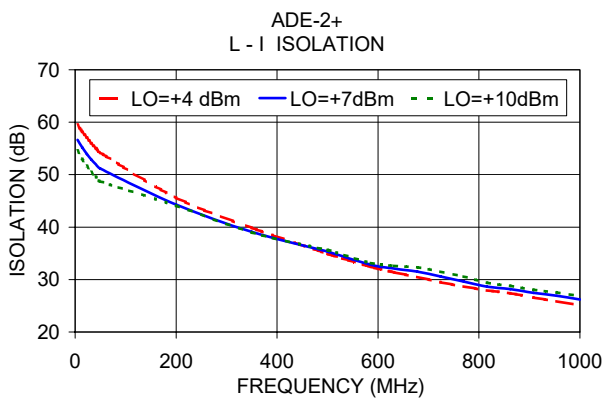
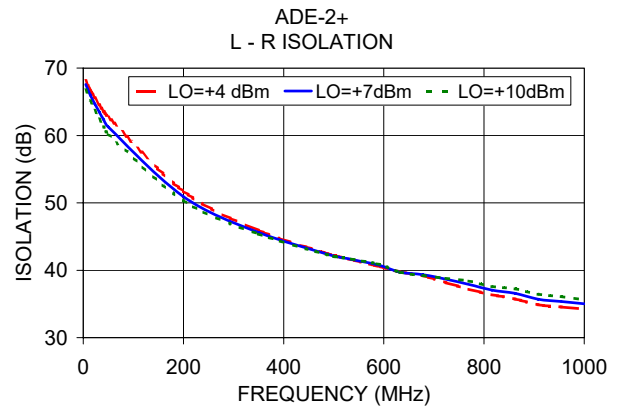
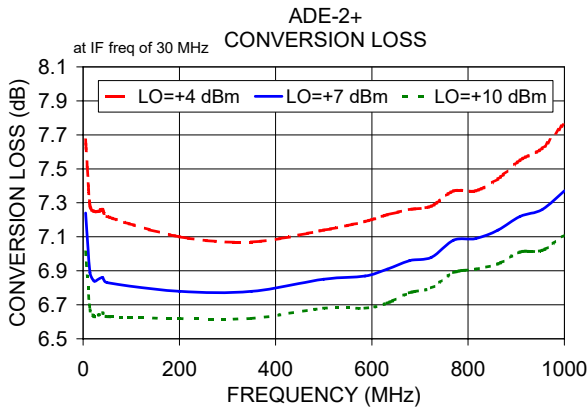
L = low range [ $f_L$  to  $10 f_L$ ] M = mid range [ $10 f_L$  to  $f_U/2$ ] U = upper range [ $f_U/2$  to  $f_U$ ]  
m = mid band [ $2f_L$  to  $f_U/2$ ]

#### Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
5.0	35.0	7.24	67.56	56.62	1.74	2.77
14.0	44.0	6.89	66.00	55.21	1.40	2.76
23.0	53.0	6.84	64.66	53.92	1.35	2.75
32.0	62.0	6.85	63.45	52.89	1.34	2.74
41.0	71.0	6.86	62.35	51.97	1.33	2.73
50.0	80.0	6.83	61.27	51.17	1.33	2.72
200.0	230.0	6.78	50.90	44.28	1.35	2.79
350.0	380.0	6.78	45.63	39.09	1.37	2.87
500.0	530.0	6.85	42.11	35.34	1.40	2.76
502.5	532.5	6.81	42.09	35.27	1.41	2.76
586.0	616.0	6.87	40.83	32.80	1.44	2.77
632.0	662.0	6.91	39.73	32.12	1.47	2.92
678.0	708.0	6.96	39.35	31.50	1.47	2.90
724.0	754.0	6.98	38.67	30.57	1.50	3.11
770.0	800.0	7.08	37.90	29.63	1.52	3.08
816.0	846.0	7.09	37.06	28.64	1.52	3.26
862.0	892.0	7.14	36.56	28.19	1.54	3.24
908.0	938.0	7.22	35.71	27.46	1.53	3.28
954.0	984.0	7.26	35.35	26.91	1.49	3.28
1000.0	1030.0	7.37	35.01	26.18	1.50	3.23

#### Electrical Schematic





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