

# Surface Mount Frequency Mixer

## ADE-3G+ ADE-3G

### Level 7 (LO Power +7 dBm) 2300 to 2700 MHz



CASE STYLE: CD542

**+ RoHS compliant in accordance  
with EU Directive (2002/95/EC)**

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

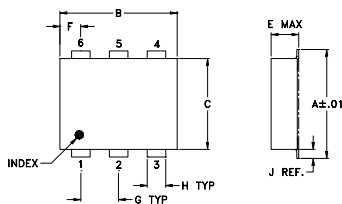
#### Maximum Ratings

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.	

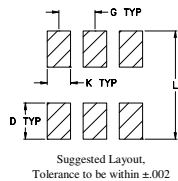
#### Pin Connections

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

#### Outline Drawing



#### PCB Land Pattern

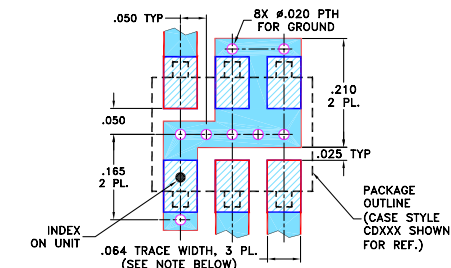


Suggested Layout,  
Tolerance to be within ±.002

#### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.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

#### Features

- low conversion loss, 5.6 dB typ.
- good L-R isolation, 36 dB typ.
- low profile package
- aqueous washable
- low cost
- protected by U.S. Patent 6,133,525

#### Applications

- wireless/VSAT systems
- ISM

#### Electrical Specifications

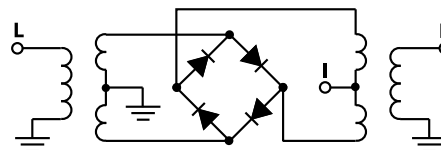
FREQUENCY (MHz)	CONVERSION LOSS (dB)		LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)			
	LO/RF	IF	$\bar{X}$	$\sigma$	Max.	Typ.		Min.		
2300-2700	DC-400		5.8	0.10	7.0	35	25	26	17	13

1 dB COMP: +1 dBm typ.  
Phase detection, positive polarity

#### Typical Performance Data

Frequency		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF MHz	LO MHz	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
2300.00	2330.00	5.75	41.50	25.30	1.28	1.76
2321.05	2351.05	5.85	41.30	25.70	1.27	1.80
2342.11	2372.11	5.88	41.00	26.00	1.23	1.85
2363.16	2393.16	5.89	41.00	26.20	1.24	1.87
2384.21	2414.21	5.91	40.80	26.40	1.25	1.85
2405.26	2435.26	5.82	40.60	26.80	1.24	1.84
2426.32	2456.32	5.79	40.40	27.10	1.25	1.80
2447.37	2477.37	5.69	40.00	27.30	1.25	1.80
2468.42	2498.42	5.65	39.20	27.70	1.27	1.82
2489.47	2519.47	5.59	38.50	27.80	1.28	1.84
2510.53	2540.53	5.65	38.10	28.00	1.29	1.85
2531.58	2561.58	5.63	37.80	28.20	1.31	1.82
2552.63	2582.63	5.64	38.10	28.20	1.34	1.78
2573.68	2603.68	5.54	38.00	28.10	1.38	1.77
2594.74	2624.74	5.61	37.10	28.20	1.39	1.73
2615.79	2645.79	5.63	36.20	28.20	1.40	1.70
2636.84	2666.84	5.63	35.80	28.20	1.43	1.67
2657.90	2687.90	5.59	35.30	28.00	1.48	1.63
2678.95	2708.95	5.54	35.00	27.90	1.50	1.59
2700.00	2730.00	5.53	34.70	27.70	1.53	1.54

#### Electrical Schematic



**Mini-Circuits**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

IF/RF MICROWAVE COMPONENTS

For detailed performance specs & shipping online see web site

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).

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## Performance Charts

