

Surface Mount Frequency Mixer

Level 7 (LO Power +7 dBm) 1 to 1000 MHz

ADE-2ASK+ ADE-2ASK



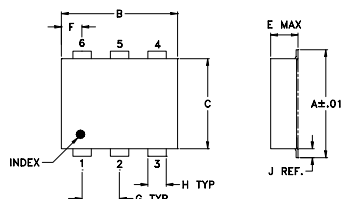
Maximum Ratings

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

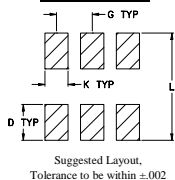
Pin Connections

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

Outline Drawing



PCB Land Pattern

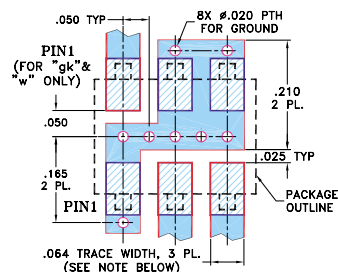


Outline Dimensions (inch)

| 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, 5.4 dB typ.
- excellent L-R isolation, 45 dB typ.
- low profile package
- aqueous washable
- protected by U.S. Patent 6,133,525

Applications

- VSAT systems
- instrumentation
- cellular

CASE STYLE: CD542

PRICE: \$4.25 ea. QTY (10-49)

+ 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.

Electrical Specifications

| FREQUENCY (MHz) | | CONVERSION LOSS (dB) | | | LO-RF ISOLATION (dB) | | | | | | LO-IF ISOLATION (dB) | | | | | | IP3 at center band (dBm) | |
|------------------------|---------|-------------------------|----------|------------------------|-------------------------|------|------|------|------|------|-------------------------|------|------|------|------|------|-----------------------------------|------|
| LO/RF f_L - f_U | IF | Mid-Band m | | Total Range Max. | L | | M | | U | | L | | M | | U | | | |
| | | \overline{X} | σ | | Max. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | | Min. |
| 1-1000 | DC-1000 | 5.4 | 0.10 | 6.8 | 9.5 | 55 | 45 | 45 | 30 | 36 | 20 | 50 | 40 | 32 | 22 | 22 | 12 | 12 |

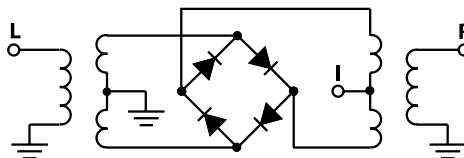
1 dB COMP.: +1 dBm typ.
Phase detection, positive polarity

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

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 |
| 1.00 | 31.00 | 6.13 | 67.70 | 64.10 | 2.58 | 1.38 |
| 2.00 | 32.00 | 5.68 | 67.90 | 64.20 | 2.55 | 1.22 |
| 2.18 | 32.18 | 5.68 | 67.90 | 64.00 | 2.52 | 1.21 |
| 4.73 | 34.73 | 5.45 | 66.90 | 64.10 | 2.55 | 1.12 |
| 10.29 | 40.29 | 5.40 | 66.00 | 63.10 | 2.52 | 1.09 |
| 22.37 | 52.37 | 5.49 | 63.30 | 61.10 | 2.52 | 1.07 |
| 48.66 | 78.66 | 5.44 | 59.70 | 57.50 | 2.52 | 1.04 |
| 105.82 | 135.82 | 5.42 | 54.50 | 52.40 | 2.52 | 1.00 |
| 230.13 | 260.13 | 5.49 | 48.90 | 47.20 | 2.61 | 1.05 |
| 500.50 | 530.50 | 5.96 | 46.80 | 38.20 | 2.88 | 1.25 |
| 556.00 | 586.00 | 6.18 | 47.40 | 36.40 | 2.92 | 1.20 |
| 600.00 | 630.00 | 6.29 | 45.90 | 35.20 | 2.96 | 1.21 |
| 611.50 | 641.50 | 6.31 | 45.10 | 35.00 | 2.88 | 1.21 |
| 667.00 | 697.00 | 6.43 | 42.60 | 31.90 | 3.21 | 1.26 |
| 722.50 | 752.50 | 6.81 | 41.00 | 30.90 | 3.01 | 1.38 |
| 778.00 | 808.00 | 6.93 | 38.60 | 29.20 | 3.21 | 1.58 |
| 833.50 | 863.50 | 7.22 | 36.80 | 28.10 | 3.38 | 1.78 |
| 889.00 | 919.00 | 7.46 | 35.20 | 28.60 | 3.16 | 1.99 |
| 944.50 | 974.50 | 7.58 | 33.10 | 26.60 | 3.64 | 2.25 |
| 1000.00 | 1030.00 | 7.83 | 30.70 | 24.00 | 3.64 | 2.49 |

Electrical Schematic



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Page 1 of 2

Performance Charts

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