

Surface Mount High Reliability Mixer

ADE-R6LH+

Level 10 (LO Power +10 dBm) 0.2 to 250 MHz



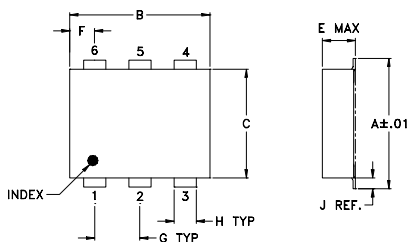
Maximum Ratings

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

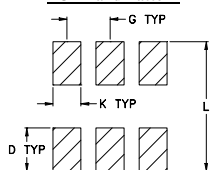
Pin Connections

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

Outline Drawing



PCB Land Pattern

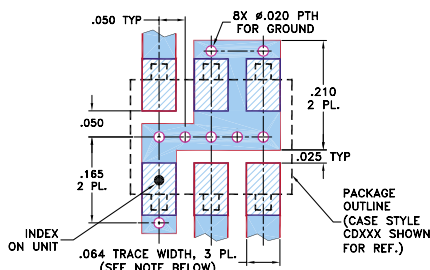


Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G |
|------|------|------|------|-------|------|------|
| .272 | .310 | .220 | .100 | .206 | .055 | .100 |
| 6.91 | 7.87 | 5.59 | 2.54 | 5.23 | 1.40 | 2.54 |
| H | J | K | L | wt | | |
| .030 | .026 | .065 | .300 | grams | | |
| 0.76 | 0.66 | 1.65 | 7.62 | 0.40 | | |

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, 4.9 dB typ.
- excellent L-R isolation, 50 dB typ.
- low profile package
- aqueous washable
- protected by US Patent 6,133,525

Applications

- cellular

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 | | | | | | | | | | | |
| LO/RF f_L - f_U | Mid-Band m \bar{X} σ Max. | Total Range Max. | | | Typ. Min. | Typ. Min. | Typ. Min. | Typ. Min. | Typ. Min. | Typ. Min. | Typ. Min. | | | | | | | |
| 0.2-250 | DC-200 | 4.9 | 0.05 | 7.0 | 8.4 | 70 | 54 | 50 | 37 | 40 | 28 | 65 | 45 | 45 | 31 | 33 | 20 | 16 |

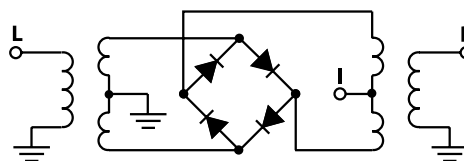
1 dB COMP.: +5 dBm typ.

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 [$2 f_L$ 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 +10dBm |
| 0.20 | 30.20 | 4.97 | 67.49 | 61.77 | 1.28 | 2.18 |
| 0.25 | 30.25 | 4.95 | 62.09 | 55.17 | 1.27 | 2.15 |
| 1.00 | 31.00 | 4.85 | 60.50 | 52.85 | 1.26 | 2.15 |
| 5.00 | 35.00 | 4.69 | 58.51 | 50.92 | 1.28 | 2.13 |
| 11.00 | 41.00 | 4.69 | 59.26 | 48.97 | 1.28 | 2.12 |
| 32.00 | 62.00 | 4.73 | 56.10 | 47.87 | 1.26 | 2.14 |
| 43.00 | 73.00 | 4.79 | 52.69 | 46.84 | 1.25 | 2.14 |
| 65.00 | 95.00 | 4.84 | 54.99 | 44.91 | 1.21 | 2.16 |
| 87.00 | 117.00 | 4.84 | 58.06 | 43.53 | 1.16 | 2.20 |
| 98.00 | 128.00 | 4.85 | 54.34 | 44.03 | 1.13 | 2.20 |
| 109.00 | 139.00 | 4.89 | 48.39 | 43.91 | 1.17 | 2.21 |
| 120.00 | 150.00 | 4.99 | 45.43 | 41.05 | 1.18 | 2.25 |
| 140.00 | 170.00 | 4.99 | 41.52 | 37.78 | 1.11 | 2.24 |
| 160.00 | 190.00 | 5.02 | 39.86 | 36.11 | 1.10 | 2.32 |
| 180.00 | 210.00 | 5.11 | 41.06 | 36.87 | 1.03 | 2.44 |
| 190.00 | 220.00 | 5.32 | 40.52 | 38.41 | 1.07 | 2.51 |
| 200.00 | 230.00 | 5.47 | 40.00 | 37.98 | 1.18 | 2.59 |
| 210.00 | 240.00 | 5.46 | 39.31 | 36.15 | 1.24 | 2.57 |
| 220.00 | 250.00 | 5.55 | 38.20 | 34.51 | 1.30 | 2.54 |
| 250.00 | 280.00 | 5.82 | 36.14 | 31.62 | 1.44 | 2.58 |

Electrical Schematic



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