

High IP3

Frequency Mixer WIDE BAND

MCA-35H+

Level 17 (LO Power+17 dBm) 500 to 3500 MHz



CASE STYLE: DZ883
PRICE: \$8.95 ea. QTY.(10-49)

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

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Maximum Ratings

| | |
|---|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature | -55°C to 100°C |
| RF Power | 200 mW |
| IF Current | 40 mA |
| Permanent damage may occur if any of these limits are exceeded. | |

Pin Connections

| | |
|--------|---------------|
| LO | 10 |
| RF | 5 |
| IF | 3 |
| GROUND | 1,2,4,6,7,8,9 |

Features

- wide bandwidth, 500 to 3500 MHz
- excellent isolation, 30 dB typ. (1800-2500 MHz)
- good matching 2:1 VSWR typ. (over 1800-2800 MHz)
- small size 0.25"x0.3"x0.2"
- aqueous washable
- triple balanced mixer
- protected by US Patent 6,917,796

Applications

- cellular
- PCN
- PDC
- DECT
- PHS
- WiMAX

Electrical Specifications (T_{AMB}=-55°C to 100°C)

| FREQUENCY (MHz) | CONVERSION LOSS (dB) | LO-RF ISOLATION (dB) | | LO-IF ISOLATION (dB) | | IP3 at center band (dBm) |
|--------------------------------------|----------------------|----------------------|----------|----------------------|------|--------------------------|
| | | Typ. | Min. | Typ. | Min. | |
| LO/RF f _c -f _u | IF | \bar{X} | σ | Max. | | |
| 500-3500 | 10-1500 | 6.9 | 0.1 | 8.9 | | |
| 500-800 | 10-300 | 6.3 | 0.1 | 7.7 | 18 | 11 |
| 800-1000 | 10-200 | 6.4 | 0.1 | 7.6 | 24 | 17 |
| 1000-1800 | 10-800 | 6.6 | 0.1 | 8.6 | 29 | 20 |
| 1800-2000 | 10-200 | 6.0 | 0.1 | 7.6 | 30 | 22 |
| 1800-2500 | 10-700 | 5.8 | 0.1 | 7.6 | 30 | 22 |
| 2000-3500 | 10-1500 | 6.5 | 0.1 | 8.6 | 29 | 17 |

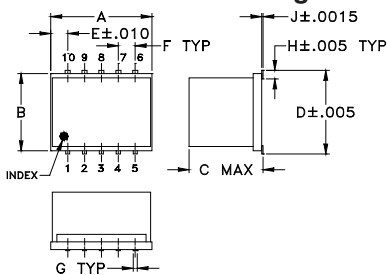
1 dB COMPR. +14 dBm typ.

• see individual band specs

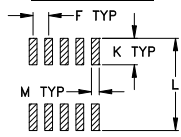
Typical Performance Data

| Frequency (MHz) | Conversion Loss (dB) | | Isolation (dB) | | VSWR RF Port (:1) | | VSWR LO Port (:1) | |
|-----------------|----------------------|------|----------------|-----------|-------------------|-----------|-------------------|-----------|
| | RF | LO | L-R (dB) | L-I (dB) | LO | LO | LO | LO |
| | | | LO +17dBm | LO +17dBm | LO +17dBm | LO +17dBm | LO +17dBm | LO +17dBm |
| 501.00 | 531.00 | 6.02 | 16.19 | 33.30 | 1.67 | 1.57 | | |
| 601.00 | 631.00 | 5.93 | 17.94 | 31.90 | 1.93 | 1.39 | | |
| 701.00 | 731.00 | 5.87 | 20.08 | 31.13 | 2.33 | 1.24 | | |
| 801.00 | 831.00 | 6.50 | 22.69 | 29.81 | 3.04 | 1.25 | | |
| 901.00 | 931.00 | 6.28 | 26.16 | 29.31 | 3.47 | 1.26 | | |
| 1101.00 | 1131.00 | 6.48 | 32.24 | 27.89 | 4.32 | 1.39 | | |
| 1301.00 | 1331.00 | 6.62 | 30.73 | 26.48 | 2.63 | 1.45 | | |
| 1501.00 | 1531.00 | 7.32 | 27.40 | 26.27 | 1.85 | 1.50 | | |
| 1701.00 | 1731.00 | 6.32 | 27.63 | 29.18 | 1.95 | 1.44 | | |
| 1901.00 | 1931.00 | 6.07 | 30.06 | 30.97 | 1.84 | 1.58 | | |
| 2101.00 | 2131.00 | 5.88 | 31.94 | 29.21 | 1.44 | 1.63 | | |
| 2301.00 | 2331.00 | 5.99 | 30.11 | 27.83 | 1.61 | 1.82 | | |
| 2501.00 | 2531.00 | 6.00 | 29.06 | 26.52 | 2.15 | 1.80 | | |
| 2701.00 | 2731.00 | 6.73 | 30.39 | 25.95 | 2.70 | 1.64 | | |
| 2901.00 | 2931.00 | 6.88 | 30.46 | 24.83 | 3.11 | 1.79 | | |
| 3100.00 | 3130.00 | 6.88 | 31.18 | 25.70 | 4.03 | 2.13 | | |
| 3200.00 | 3230.00 | 6.61 | 30.89 | 25.41 | 3.89 | 2.09 | | |
| 3300.00 | 3330.00 | 6.50 | 31.82 | 27.53 | 3.47 | 1.95 | | |
| 3400.00 | 3430.00 | 6.27 | 31.14 | 26.35 | 3.13 | 1.78 | | |
| 3500.00 | 3530.00 | 6.05 | 28.30 | 27.50 | 2.70 | 1.75 | | |

Outline Drawing



PCB Land Pattern

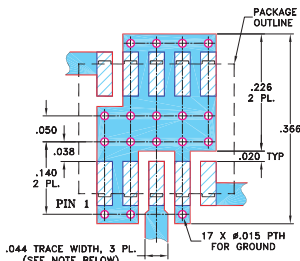


Suggested Layout, Tolerance to be within ±0.02

Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G |
|------|------|------|------|------|-------|------|
| .30 | .250 | .190 | .266 | .050 | .050 | .012 |
| 7.62 | 6.35 | 4.83 | 6.76 | 1.27 | 1.27 | 0.30 |
| H | J | K | L | M | wt | |
| .029 | .004 | .085 | .296 | .030 | grams | |
| 0.74 | 0.10 | 2.16 | 7.52 | 0.76 | 0.5 | |

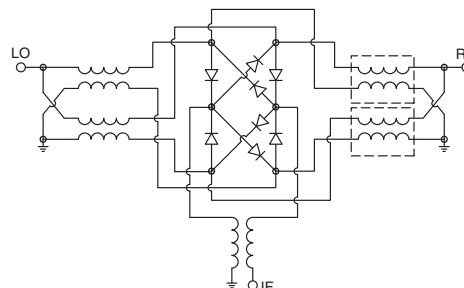
Demo Board MCL P/N: TB-144 Suggested PCB Layout (PL-045)



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; 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

Electrical Schematic



Mini-Circuits
ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs & shopping online see web site

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IF/RF MICROWAVE COMPONENTS

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