

Ceramic

# Frequency Mixer WIDE BAND

New!  
MCA-35MH

Level 13 (LO Power +13 dBm) 500 to 3500 MHz

## Features

- wide bandwidth, 500 to 3500 MHz
- excellent isolation, 30 dB typ. (1800-2500 MHz)
- good matching 2:1 VSWR (over 1800-2800 MHz)
- small size 0.25"x0.3"x0.2"
- triple balanced mixer

## Applications

- cellular
- PCN
- PDC
- DECT
- PHS



**BLUE CELL™**

CASE STYLE: DZ883  
PRICE: \$7.95 ea. QTY (10-49)  
(Patent pending)

## Mixer Electrical Specifications (T<sub>AMB</sub> = -55°C to 100°C)

| MODEL NO. | FREQUENCY (MHz)                      |         | CONVERSION LOSS (dB) |          |      | LO-RF ISOLATION (dB) |      | LO-IF ISOLATION (dB) |      | IP3@ center band Typ. (dBm) | E FACTOR |
|-----------|--------------------------------------|---------|----------------------|----------|------|----------------------|------|----------------------|------|-----------------------------|----------|
|           | LO/RF f <sub>L</sub> -f <sub>U</sub> | IF      | $\bar{x}$            | $\sigma$ | Max. | Typ.                 | Min. | Typ.                 | Min. |                             |          |
| MCA-35MH  | 500-3500                             | 10-1500 | 6.9                  | 0.1      | 8.7  |                      |      |                      |      |                             |          |
|           | 500-800                              | 10-300  | 6.3                  | 0.1      | 7.7  | 18                   | 11   | 29                   | 23   | 19                          | 0.6      |
|           | 800-1000                             | 10-200  | 6.5                  | 0.1      | 7.7  | 24                   | 17   | 28                   | 20   | 22                          | 0.9      |
|           | 1000-1800                            | 10-800  | 6.6                  | 0.1      | 8.7  | 29                   | 20   | 28                   | 20   | 20                          | 0.7      |
|           | 1800-2000                            | 10-200  | 6.3                  | 0.1      | 7.7  | 32                   | 25   | 29                   | 23   | 19                          | 0.6      |
|           | 1800-2500                            | 10-700  | 5.8                  | 0.1      | 7.9  | 32                   | 22   | 27                   | 20   | 19                          | 0.6      |
|           | 2000-3500                            | 10-1500 | 6.5                  | 0.1      | 8.7  | 29                   | 17   | 23                   | 15   | 19                          | 0.6      |

1dB Compr.: +9 dBm typ.  
E = [IP3(dBm)-LO Power(dBm)]/10

\* see individual band specs.

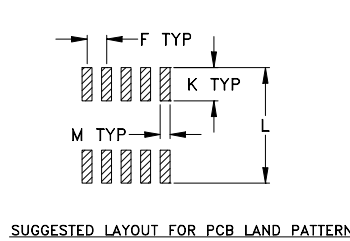
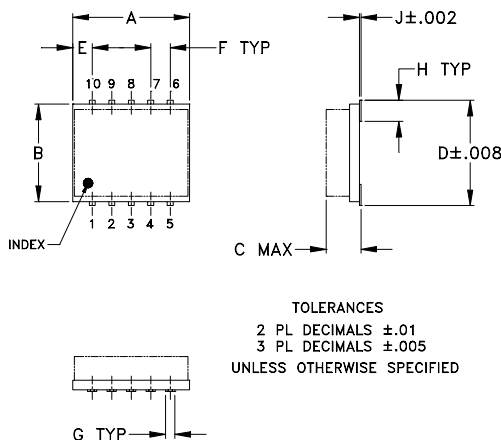
## Pin Connections

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

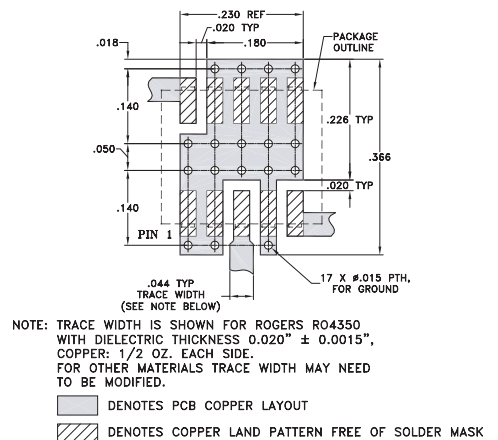
## Maximum Ratings

|                       |                |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature   | -55°C to 100°C |
| RF Power              | 200mW          |
| IF Current            | 40mA           |

## Outline Drawing



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



## Outline Dimensions (inch/mm)

| A    | B    | C    | D    | E    | F    | G    | H    | J    | K    | L    | M    | wt.   |
|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| .30  | .250 | .180 | .274 | .050 | .050 | .024 | .05  | .004 | .085 | .296 | .030 | grams |
| 7.62 | 6.35 | 4.57 | 6.96 | 1.27 | 1.27 | 0.61 | 1.27 | 0.10 | 2.16 | 7.52 | 0.76 | 0.5   |

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REV. D  
M85169  
ED-9595B/1  
MCA-35MH  
DJ/TD/CP  
030206  
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## Typical Performance Data at 25°C

| Frequency |         | Conversion Loss (dB) | Isolation L-R (dB) | Isolation L-I (dB) | VSWR LO port (:1) | VSWR RF port (:1) |
|-----------|---------|----------------------|--------------------|--------------------|-------------------|-------------------|
| RF MHz    | LO MHz  | LO +13 dBm           | LO +13 dBm         | LO +13 dBm         | LO +13 dBm        | LO +13 dBm        |
| 460.00    | 490.00  | 6.07                 | 14.89              | 31.56              | 1.44              | 1.65              |
| 820.00    | 850.00  | 6.55                 | 22.74              | 28.78              | 1.11              | 2.86              |
| 1000.00   | 1030.00 | 6.52                 | 27.75              | 27.75              | 1.27              | 3.40              |
| 1400.00   | 1430.00 | 6.99                 | 32.26              | 26.14              | 1.75              | 2.21              |
| 1800.00   | 1830.00 | 6.07                 | 32.12              | 30.09              | 1.57              | 1.92              |
| 1992.00   | 2022.00 | 5.92                 | 33.68              | 28.32              | 1.54              | 1.70              |
| 2097.00   | 2127.00 | 5.70                 | 32.52              | 28.29              | 1.38              | 1.55              |
| 2202.00   | 2232.00 | 5.82                 | 31.97              | 28.76              | 1.34              | 1.54              |
| 2395.00   | 2425.00 | 6.15                 | 30.82              | 26.29              | 1.35              | 1.67              |
| 2500.00   | 2530.00 | 5.95                 | 30.44              | 26.01              | 1.37              | 1.87              |
| 2600.00   | 2630.00 | 6.13                 | 31.78              | 26.48              | 1.30              | 2.20              |
| 2700.00   | 2730.00 | 6.47                 | 30.50              | 26.37              | 1.28              | 2.54              |
| 2800.00   | 2830.00 | 6.75                 | 30.68              | 25.93              | 1.34              | 2.82              |
| 2900.00   | 2930.00 | 6.94                 | 30.99              | 25.14              | 1.49              | 3.05              |
| 3000.00   | 3030.00 | 6.74                 | 28.34              | 24.21              | 1.62              | 3.53              |
| 3100.00   | 3130.00 | 6.80                 | 29.07              | 23.03              | 1.83              | 3.88              |
| 3200.00   | 3230.00 | 6.80                 | 28.43              | 21.62              | 2.01              | 3.85              |
| 3300.00   | 3330.00 | 6.81                 | 27.62              | 22.07              | 2.12              | 3.63              |
| 3400.00   | 3430.00 | 6.53                 | 27.00              | 21.28              | 2.19              | 3.23              |
| 3500.00   | 3530.00 | 6.35                 | 24.71              | 20.83              | 2.20              | 2.77              |

## Performance Charts

