

## Low Cost High IP3 Mixer for PCS/WLL Applications

Rev. V3

### Features

- LO & RF 10 TO 2800 MHz
- IF 10 TO 2000 MHz
- LO DRIVE +13 dBm (NOMINAL)
- SURFACE MOUNT
- HIGH INTERCEPT +22 dBm (TYP.)
- +260°C REFLOW COMPATIBLE

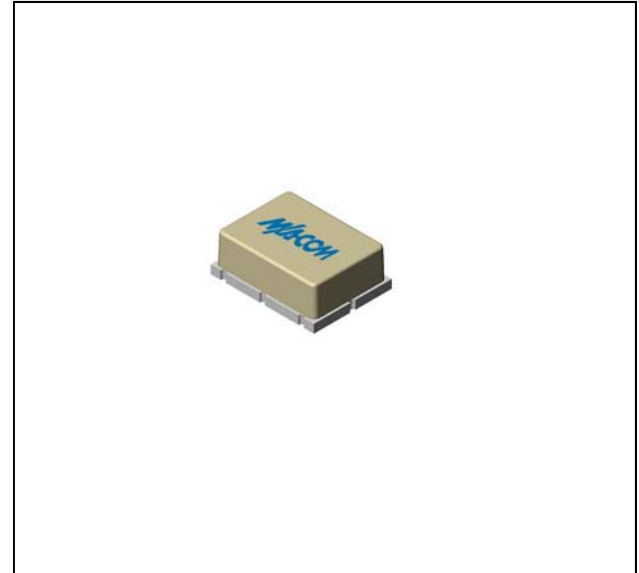
### Description

The CSM2-13 is a double balanced mixer, designed for use in the high volume wireless applications. The design utilizes Schottky ring quad diodes and broadband baluns to attain excellent performance.

### Ordering Information

| Part Number | Package       |
|-------------|---------------|
| CSM2-13     | Surface Mount |

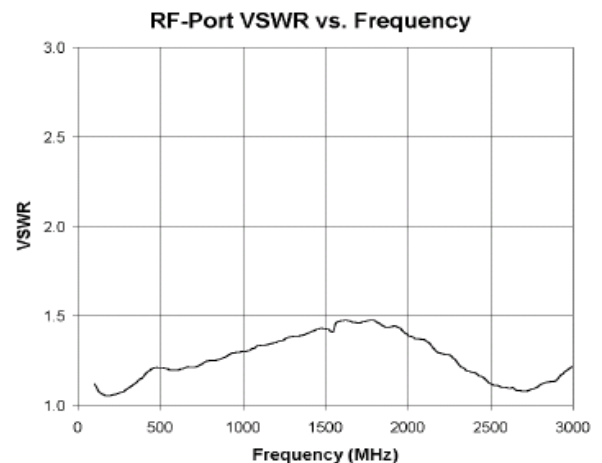
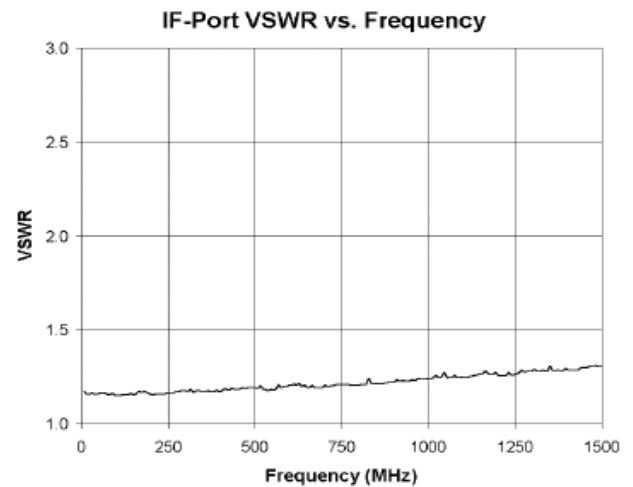
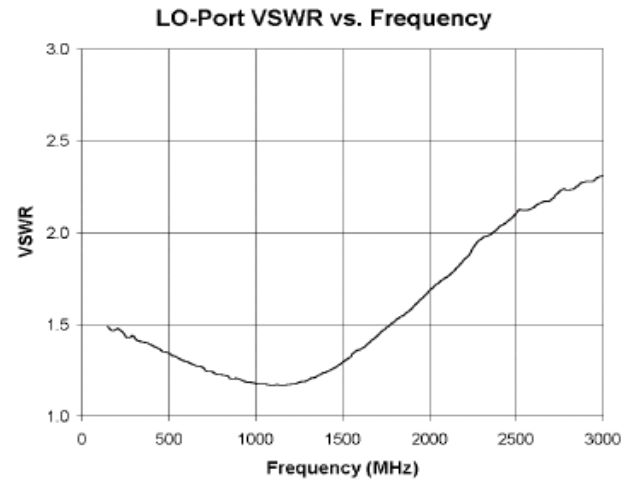
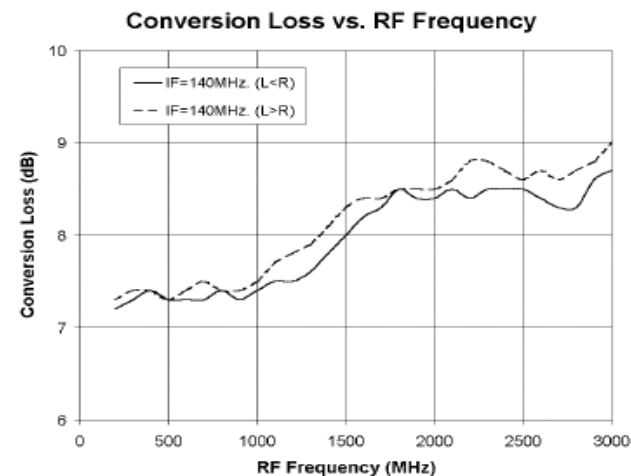
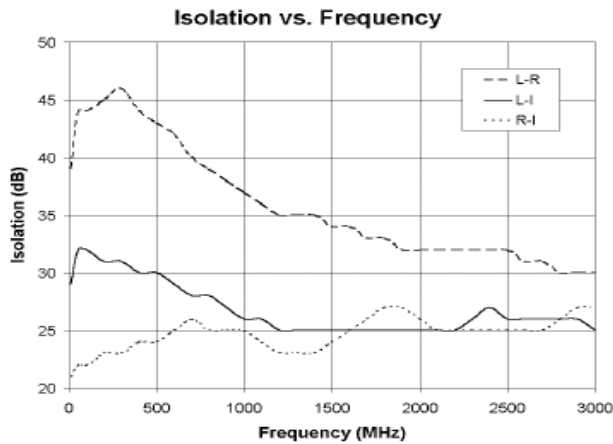
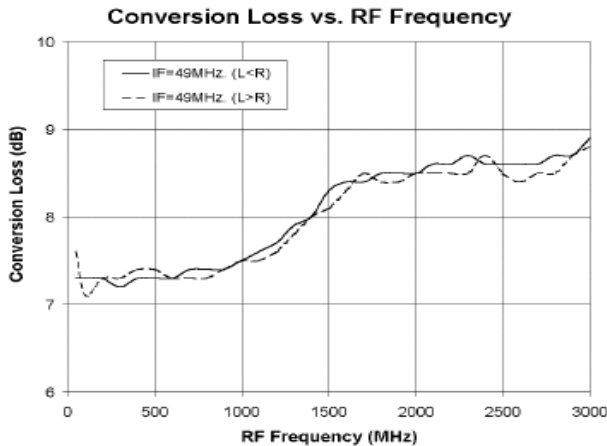
### Product Image



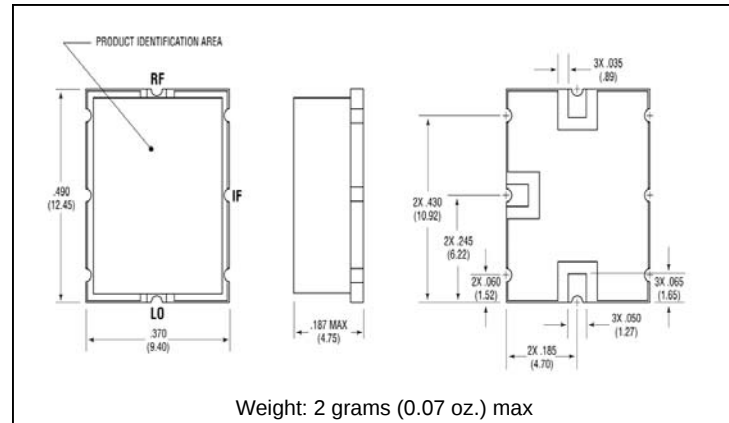
### Electrical Specifications: $Z_0 = 50\Omega$ $Lo = +13$ dBm (Downconverter application only)

| Parameter                | Test Conditions                                                                                                                                      | Units | Typical                        | Guaranteed |               |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------|------------|---------------|
|                          |                                                                                                                                                      |       |                                | +25°C      | -40° to +85°C |
| SSB Conversion Loss(max) | $f_R = 10$ to 1200 MHz, $f_L = 10$ to 1200 MHz, $f_I = 10$ to 1000 MHz<br>$f_R = 1200$ to 2800 MHz, $f_L = 1200$ to 2800 MHz, $f_I = 10$ to 2000 MHz | dB    | 7.5                            | 8.0        | 8.5           |
|                          |                                                                                                                                                      | dB    | 9.0                            | 10.0       | 10.5          |
| SSB Noise Figure         |                                                                                                                                                      | dB    | Within 1 dB of conversion loss |            |               |
| L - R Isolation (min)    | $f_L = 10$ to 1200 MHz<br>$f_L = 1200$ to 2800 MHz                                                                                                   | dB    | 35                             | 32         | 30            |
|                          |                                                                                                                                                      | dB    | 30                             | 28         | 26            |
| L - I Isolation (min)    | $f_L = 10$ to 2800 MHz                                                                                                                               | dB    | 25                             | 23         | 21            |
| R - I Isolation (min)    | $f_R = 10$ to 2800 MHz                                                                                                                               | dB    | 21                             |            |               |
| 1 dB Conversion Comp.    | $f_L = +13$ dBm                                                                                                                                      | dBm   | +10                            |            |               |
| Input IP3                | $f_L = 10$ to 2000 MHz, $f_I = 10$ to 1000 MHz, $f_R = 10$ to 2000 MHz<br>$f_L = 2000$ to 2800 MHz, $f_I = 10$ to 2000 MHz, $f_R = 2000$ to 2800 MHz | dBm   | +22                            |            |               |
|                          |                                                                                                                                                      | dBm   | +20                            |            |               |
| R-Port VSWR              | $f_R = 10$ to 2800 MHz                                                                                                                               |       | 1.7:1                          |            |               |
| L-Port VSWR              | $f_L = 10$ to 2000 MHz<br>$f_L = 2000$ to 2800 MHz                                                                                                   |       | 2.0:1<br>2.5:1                 |            |               |
| I-Port VSWR              | $f_I = 10$ to 2000 MHz                                                                                                                               |       | 1.8:1                          |            |               |

## Typical Performance Curves



### Outline Drawing: Surface Mount \*



\* Dimensions are inches (millimeters)  $\pm 0.015$  (0.38) unless otherwise specified.

### Absolute Maximum Ratings

| Parameter             | Absolute Maximum                           |
|-----------------------|--------------------------------------------|
| Operating Temperature | -54°C to +85°C                             |
| Storage Temperature   | -65°C to +100°C                            |
| Peak Input Power      | +20 dBm max @ -25°C<br>+17 dBm max @ +85°C |
| Peak Input Current    | 50 mA DC                                   |