

## Low Cost High IP3 Mixer for Cellular Applications

Rev. V3

### Features

- LO & RF 10 TO 1500 MHz
- IF 1 TO 500 MHz
- LO DRIVE +10 dBm (NOMINAL)
- SURFACE MOUNT
- HIGH INTERCEPT +19dBm (TYP.)
- +260°C REFLOW COMPATIBLE

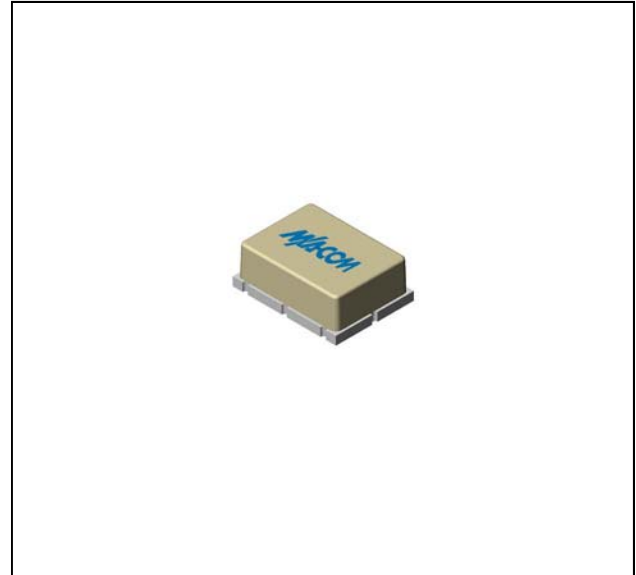
### Description

The CSM1-10 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       |
|-------------|---------------|
| CSM1-10     | Surface Mount |

### Product Image



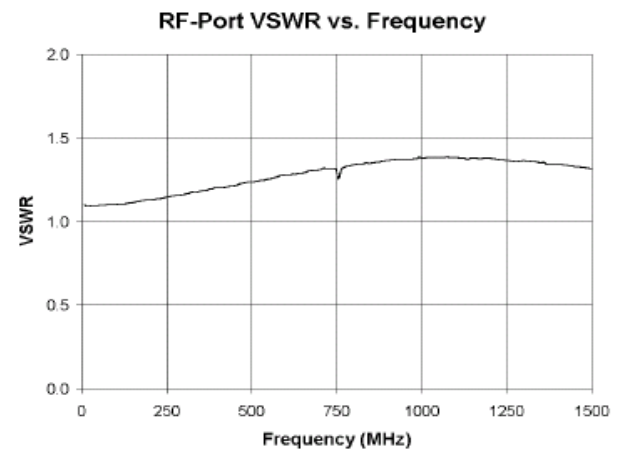
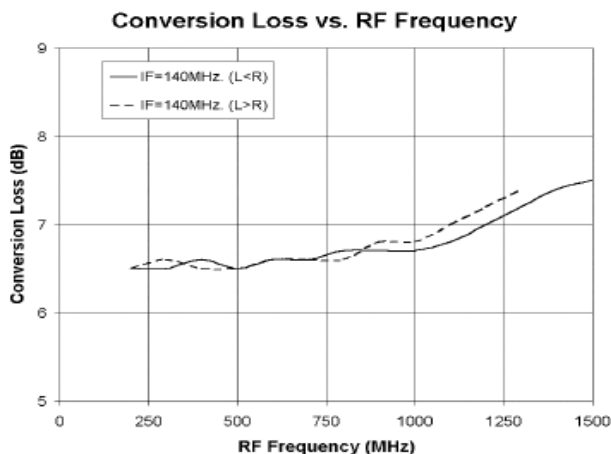
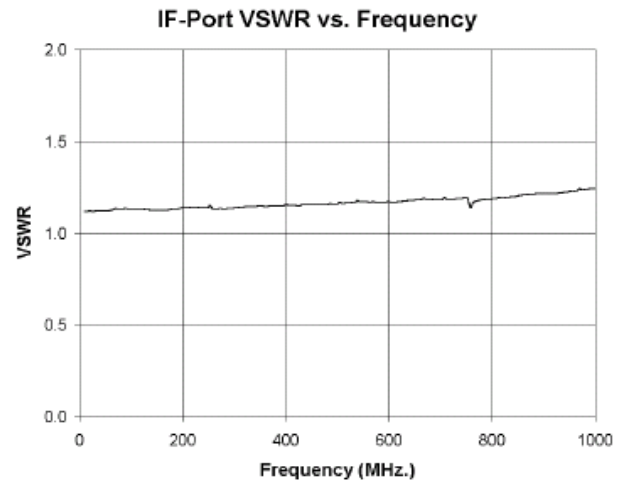
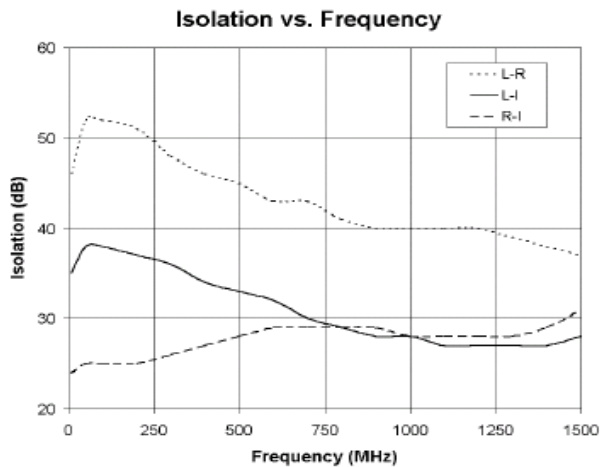
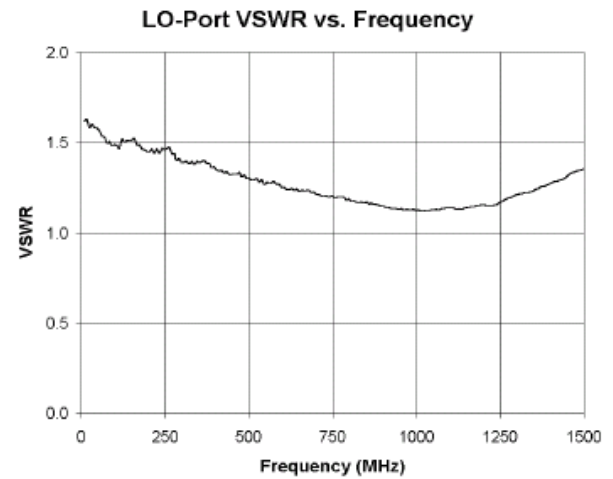
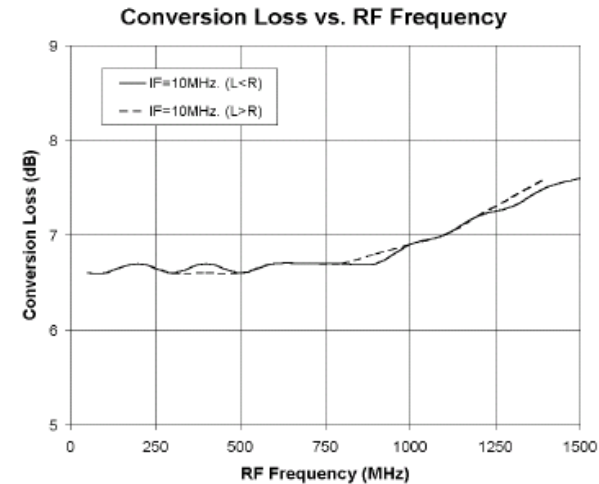
### Electrical Specifications: $Z_0 = 50\Omega$ $Lo = +10$ dBm (Downconverter application only)

| Parameter                | Test Conditions                                                                                                                | Units    | Typical                        | Guaranteed |               |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------|------------|---------------|
|                          |                                                                                                                                |          |                                | +25°C      | -40° to +85°C |
| SSB Conversion Loss(max) | fR = 10 to 1000 MHz, fL = 10 to 1000 MHz, fI = 1 to 500 MHz<br>fR = 1000 to 1500 MHz, fL = 1000 to 1500 MHz, fI = 1 to 500 MHz | dB<br>dB | 6.5<br>7.5                     | 7.0<br>8.0 | 7.5<br>8.5    |
| SSB Noise Figure         |                                                                                                                                | dB       | Within 1 dB of conversion loss |            |               |
| L - R Isolation (min)    | fL = 10 to 1500 MHz                                                                                                            | dB       | 40                             | 35         | 33            |
| L - I Isolation (min)    | fL = 10 to 1500 MHz                                                                                                            | dB       | 30                             | 25         | 23            |
| R - I Isolation (min)    | fR = 10 to 1500 MHz                                                                                                            | dB       | 27                             |            |               |
| 1 dB Conversion Comp     | fL = +10 dBm                                                                                                                   | dBm      | +6                             |            |               |
| Input IP3                | fL = 10 to 1500 MHz, fI = 1 to 500 MHz, fR = 10 to 1500 MHz                                                                    | dBm      | +19                            |            |               |
| R-Port VSWR              | fR = 10 to 1500 MHz                                                                                                            |          | 1.50:1                         |            |               |
| L-Port VSWR              | fL = 10 to 1500 MHz                                                                                                            |          | 1.75:1                         |            |               |
| I-Port VSWR              | fI = 10 to 500 MHz                                                                                                             |          | 1.50:1                         |            |               |

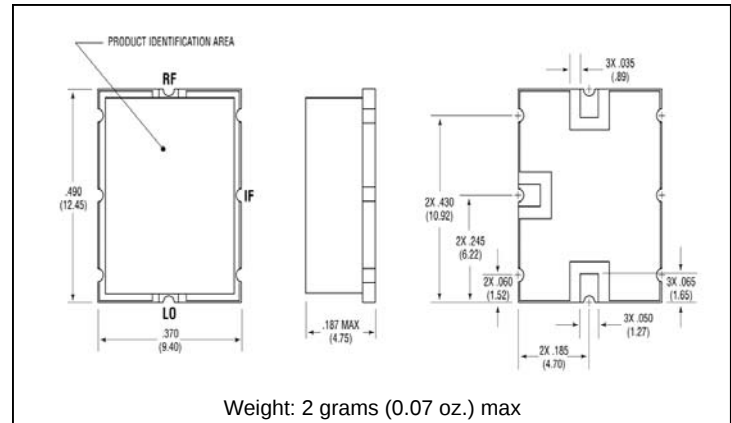
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### Typical Performance Curves



### 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                                   |