

Low Cost High IP3 Mixer for Cellular Applications

Rev. V3

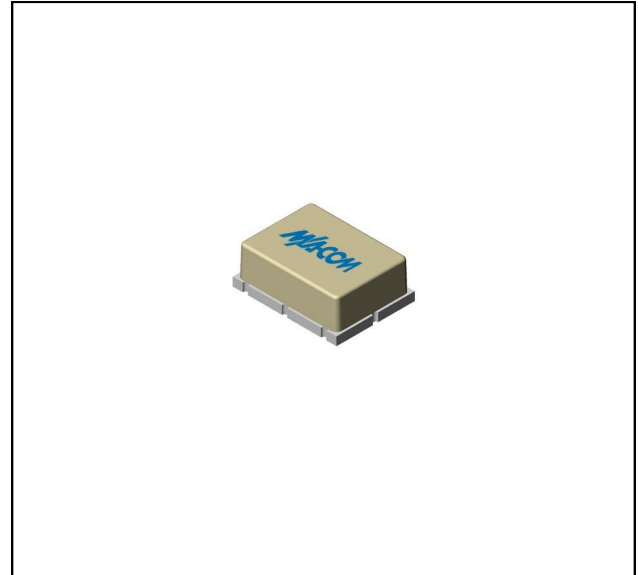
Features

- LO & RF 10 TO 1500 MHz
- IF 1 TO 500 MHz
- LO DRIVE +17 dBm (NOMINAL)
- SURFACE MOUNT
- HIGH INTERCEPT +27 dBm (TYP.)
- +260°C REFLOW COMPATIBLE

Description

The CSM1-17 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.

Product Image



Ordering Information

| Part Number | Package |
|-------------|---------------|
| CSM1-17 | Surface Mount |

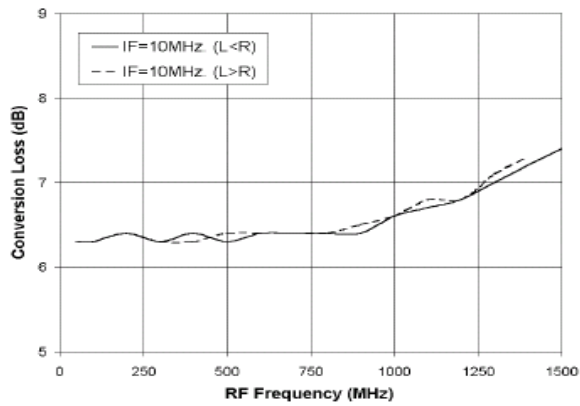
Electrical Specifications: $Z_0 = 50\Omega$ $L_o = +17$ dBm (Downconverter application only)

| 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 fR = 1000 to 1500 MHz, fL = 1000 to 1500 MHz, fI = 1 to 500 MHz | dB | 6.5 | 7.0 | 7.5 |
| | | | 7.5 | 8.0 | 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 = +17 dBm | dBm | +14 | | |
| Input IP3 | fL = 10 to 1500 MHz, fI = 1 to 500 MHz, fR = 10 to 1500 MHz | dBm | +27 | | |
| R-Port VSWR | fR = 10 to 1500 MHz | | 1.50:1 | | |
| L-Port VSWR | fL = 10 to 1500 MHz | | 2.00:1 | | |
| I-Port VSWR | fI = 10 to 500 MHz | | 1.50:1 | | |

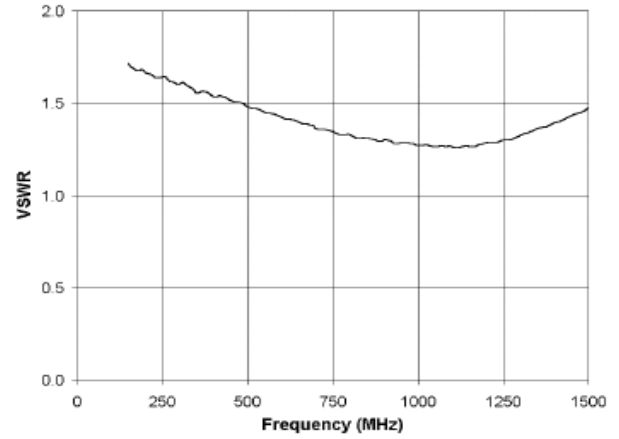
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Typical Performance Curves

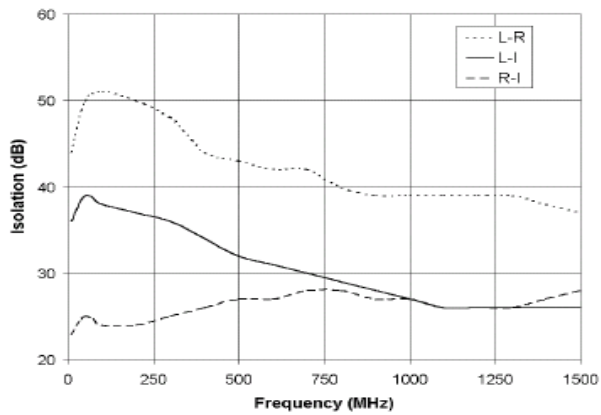
Conversion Loss vs. RF Frequency



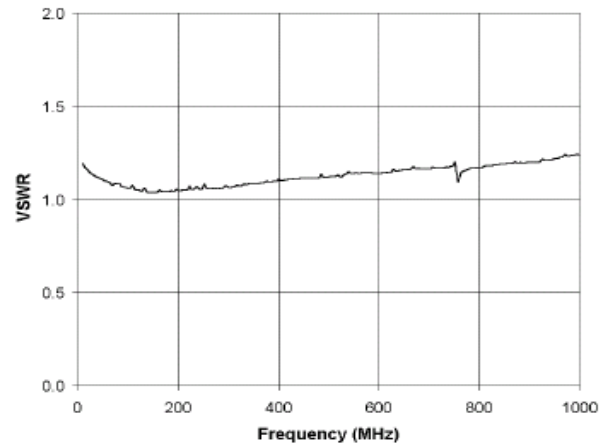
LO-Port VSWR vs. Frequency



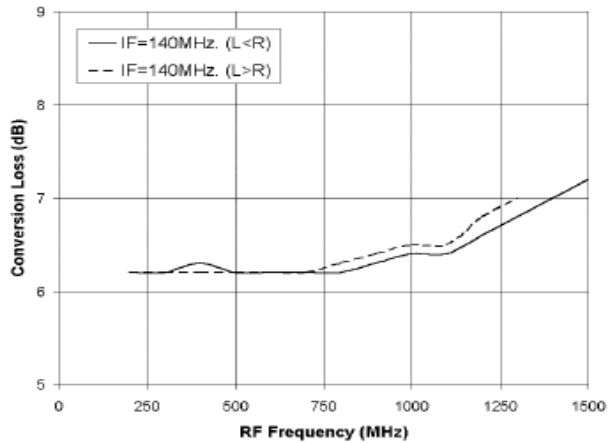
Isolation vs. Frequency



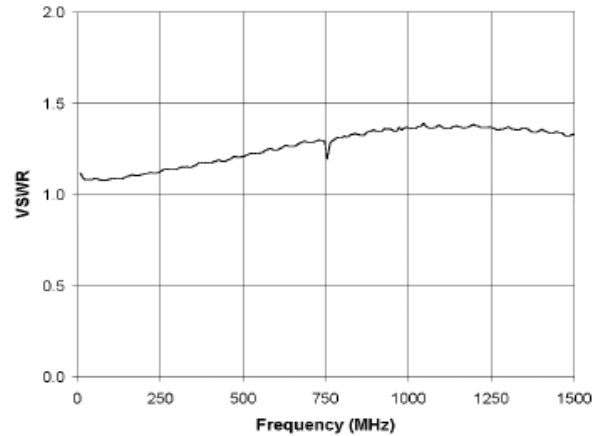
IF-Port VSWR vs. Frequency



Conversion Loss vs. RF Frequency



RF-Port VSWR vs. Frequency

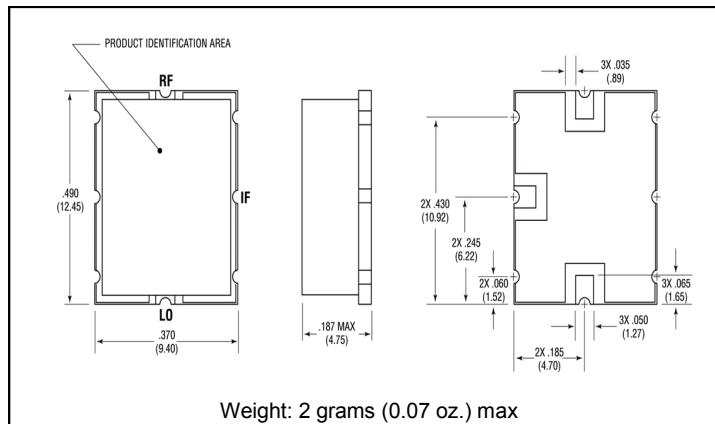


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Outline Drawing: Surface Mount *



* Dimensions are inches (millimeters) ± 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 +17 dBm max @ +85°C |
| Peak Input Current | 50 mA DC |

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