

## Low Cost High IP3 Mixer for Cellular Applications

Rev. V3

### Features

- LO & RF 10 TO 1500 MHz
- IF 1 TO 500 MHz
- LO DRIVE +13 dBm (NOMINAL)
- SURFACE MOUNT
- HIGH INTERCEPT +22 dBm (TYP.)
- +260°C REFLOW COMPATIBLE

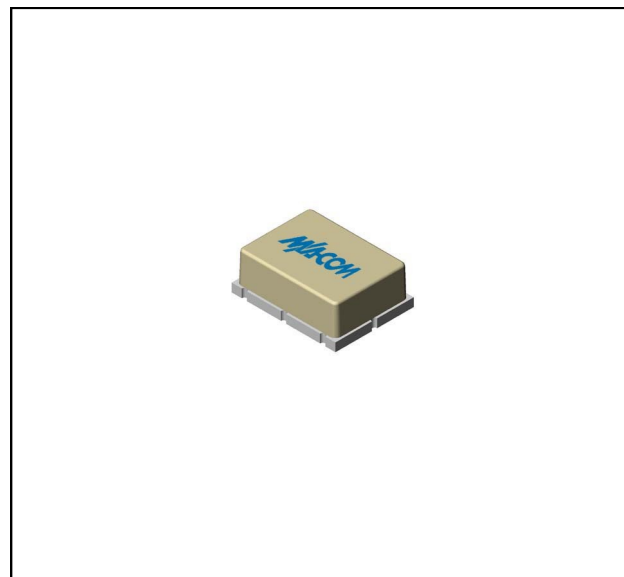
### Description

The CSM1-13 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
CSM1-13	Surface Mount

### Product Image

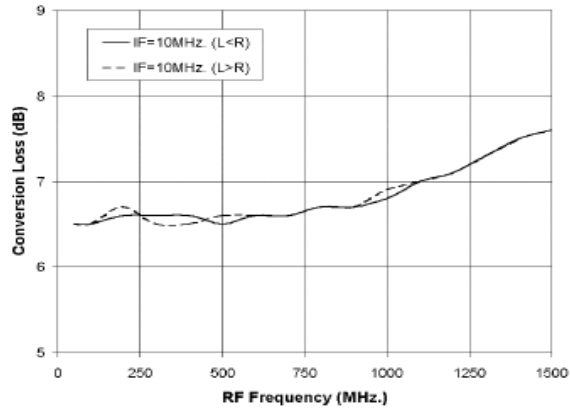


### Electrical Specifications: $Z_0 = 50\Omega$ $Lo = +13$ dBm (Downconverter application only)

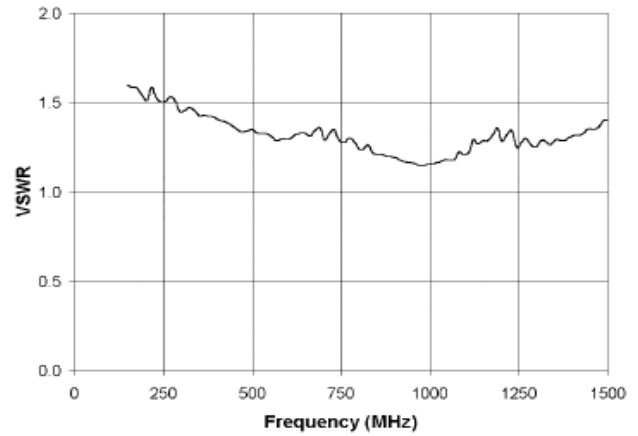
Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25°C	-40° to +85°C
SSB Conversion Loss (max)	fR = 10 to 1000 MHz, fL = 10 to 1000 MHz, fI = 1 to 500 MHz fR = 1000 to 1500 MHz, fL = 1000 to 1500 MHz, fI = 1 to 500 MHz	dB	6.5	7.0	7.5
			7.5	8.0	8.5
SSB Noise Figure		dB	Within 1 dB of conversion 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 = +13 dBm	dBm	+9		
Input IP3	fL = 10 to 1500 MHz, fI = 1 to 500 MHz, fR = 10 to 1500 MHz	dBm	+22		
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		

### Typical Performance Curves

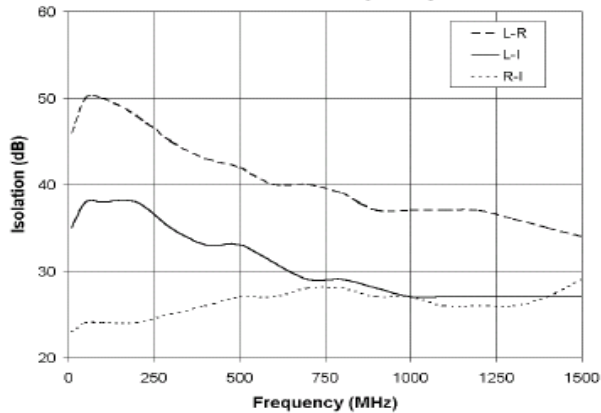
Conversion Loss vs. RF Frequency



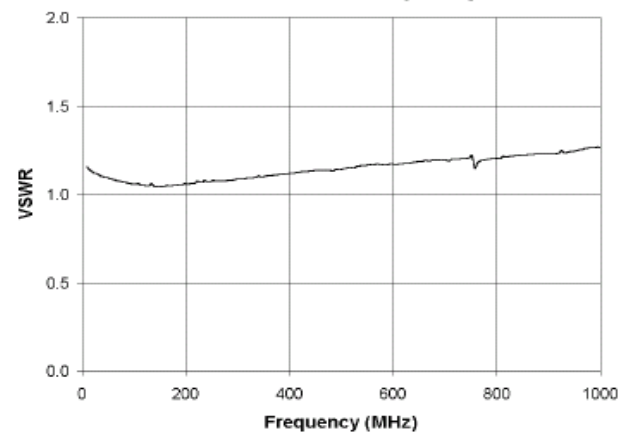
LO-Port VSWR vs. Frequency



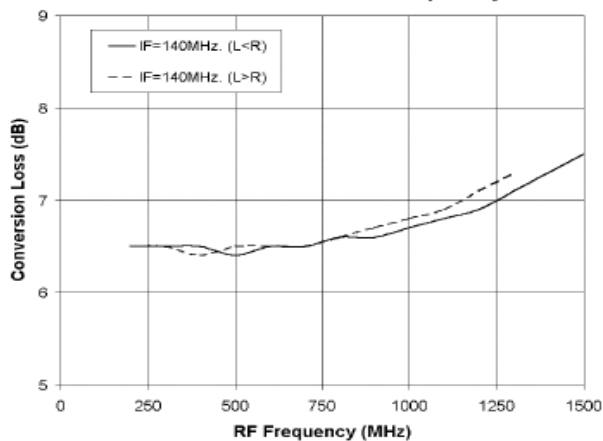
Isolation vs. Frequency



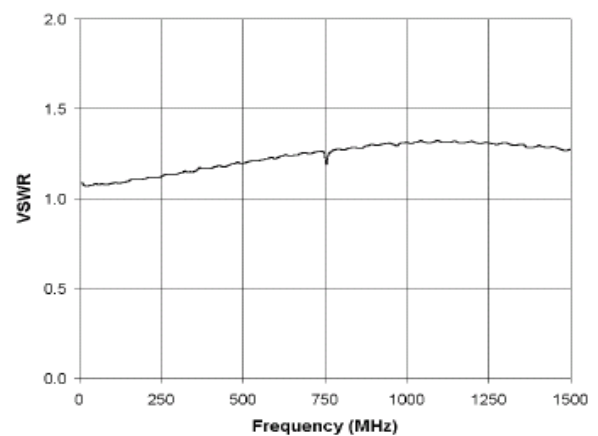
IF-Port VSWR vs. Frequency



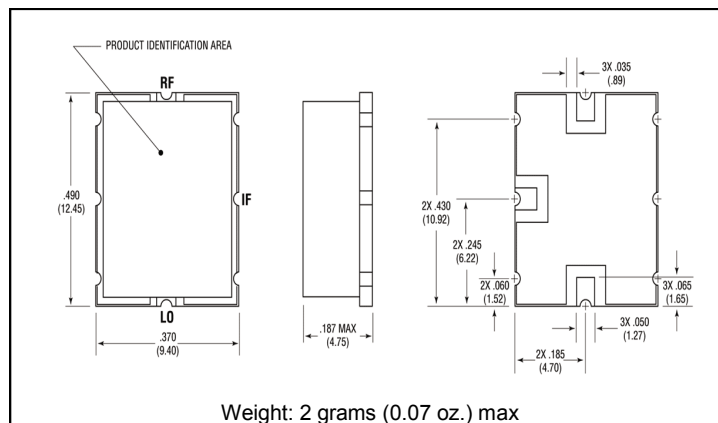
Conversion Loss vs. RF Frequency



RF-Port VSWR vs. Frequency



### 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 +17 dBm max @ +85°C
Peak Input Current	50 mA DC

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