

## Low Cost High IP3 Mixer for Cellular Applications

**CSM11-13**  
V2

### Features

- LO & RF 800 to 1000 MHz
- IF 1 to 150 MHz
- LO Drive +13 dBm (nominal)
- Surface Mount
- High Intercept +22 dBm (typ)

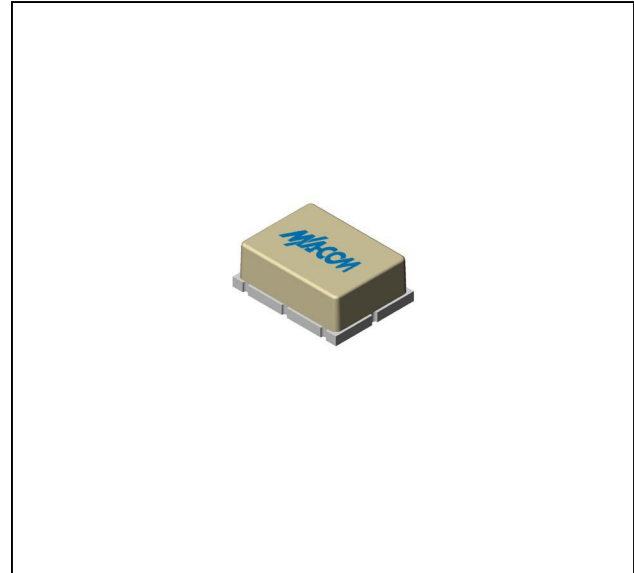
### Description

The CSM11-13 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. The use of high temperature solder assembly processes used internally makes it ideal for use in semi-automated and automated assembly.

### Ordering Information

Part Number	Package
CSM11-13	Surface Mount

### Product Image



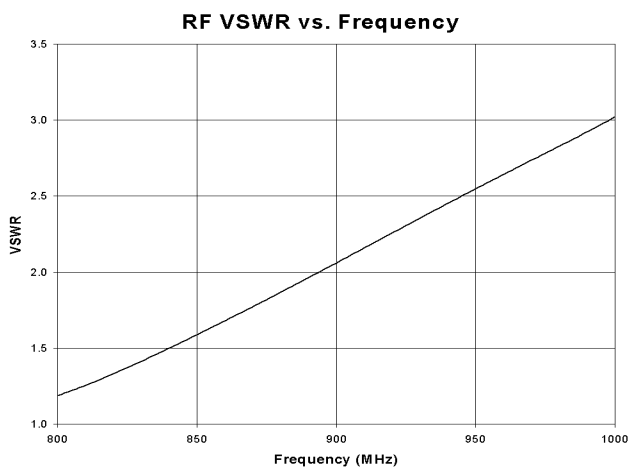
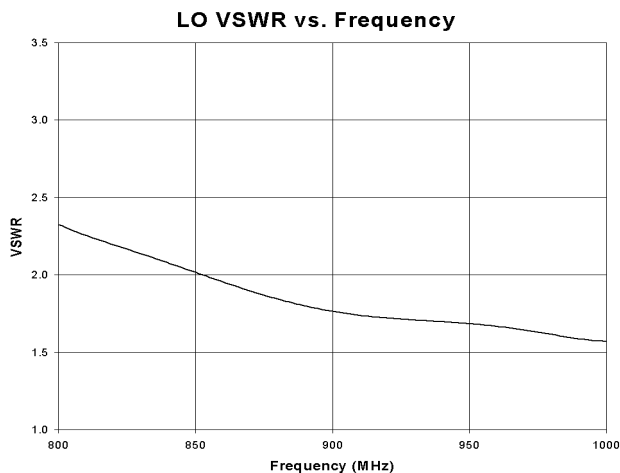
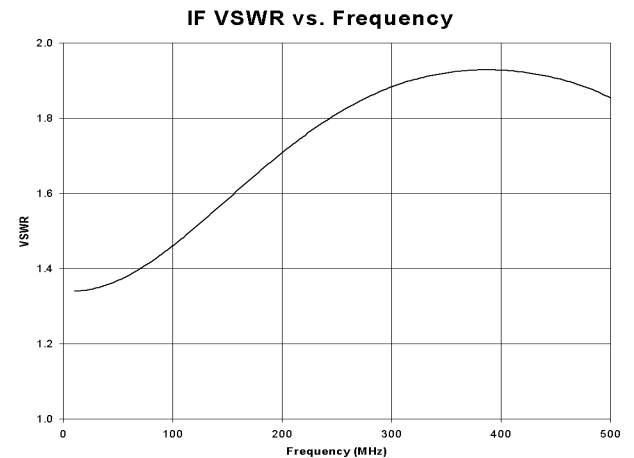
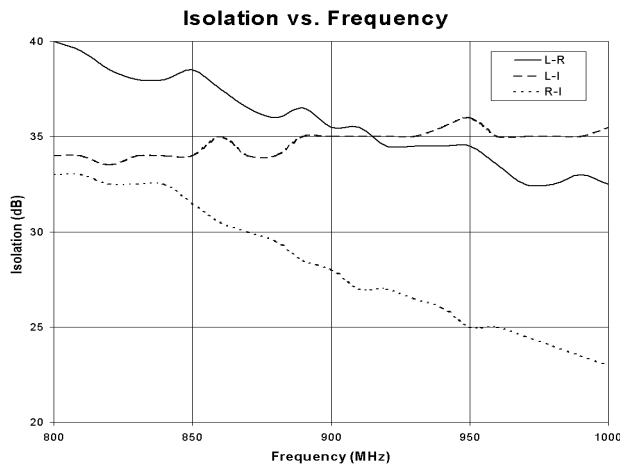
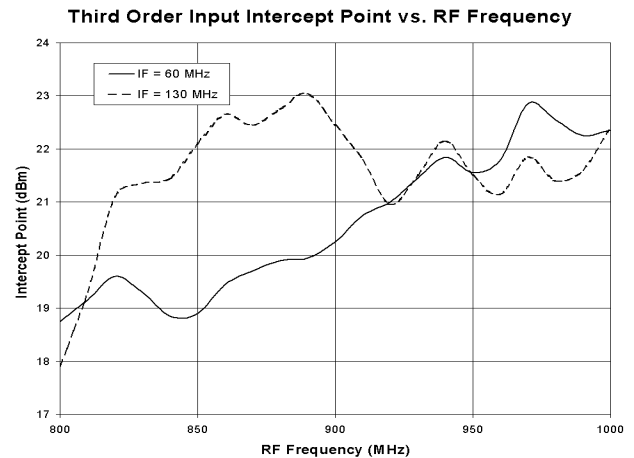
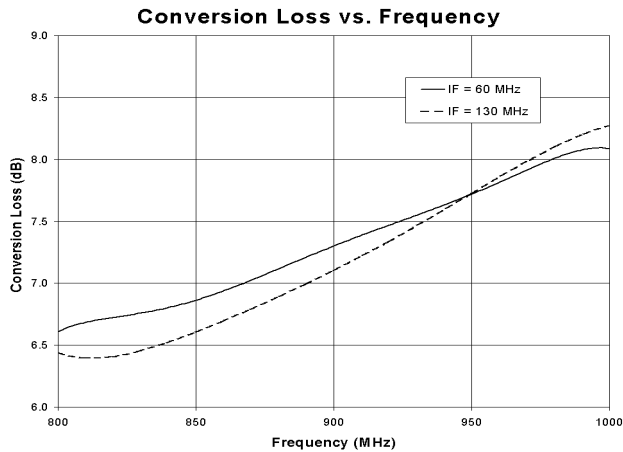
### Electrical Specifications: $Z_0 = 50\Omega$ $L_o = +13$ dBm (Downconverter application only)

Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25°C	-40° to +85°C
SSB Conversion Loss (max)	$f_R = 800$ to 1000 MHz, $f_L = 800$ to 1000 MHz, $f_I = 1$ to 150 MHz	dB	7.5 dB	8.5	9.0
SSB Noise Figure (max)	Within 1 dB of conversion loss	dB	—	—	—
L - R Isolation (min)	$f_L = 800$ to 1000 MHz	dB	35	30	28
L - I Isolation (min)	$f_L = 800$ to 1000 MHz	dB	35	30	28
R - I Isolation (min)	$f_R = 800$ to 1000 MHz	dB	25		
1 dB Conversion Comp	$f_L = +13$ dBm	dBm	+10		
Input IP3	$f_{R1} = 800$ to 1000 MHz, $f_{R2} = 800$ to 1000 MHz, $f_L = 1$ to 150 MHz	dBm	+22		
R-Port VSWR	$f_R = 800$ to 1000 MHz		2.5:1		
L-Port VSWR	$f_L = 800$ to 1000 MHz		2.0:1		
I-Port VSWR	$f_I = 10$ to 150 MHz		1.75:1		

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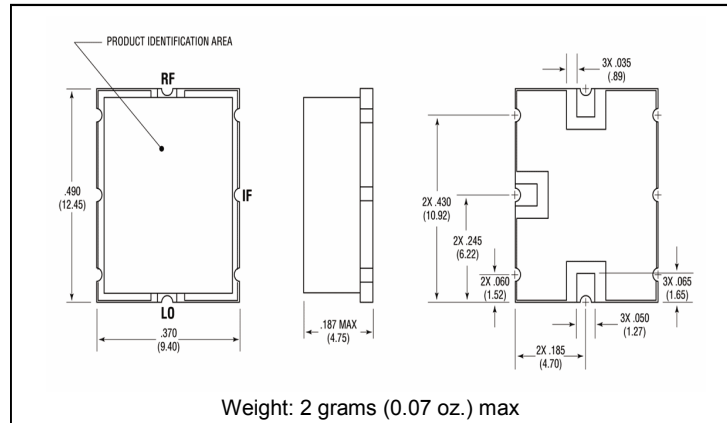
**Typical Performance Curves**



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**Outline Drawing: Surface Mount \***



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

**Absolute Maximum Ratings**

Parameter	Absolute Maximum
Operating Temperature	-40°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