

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

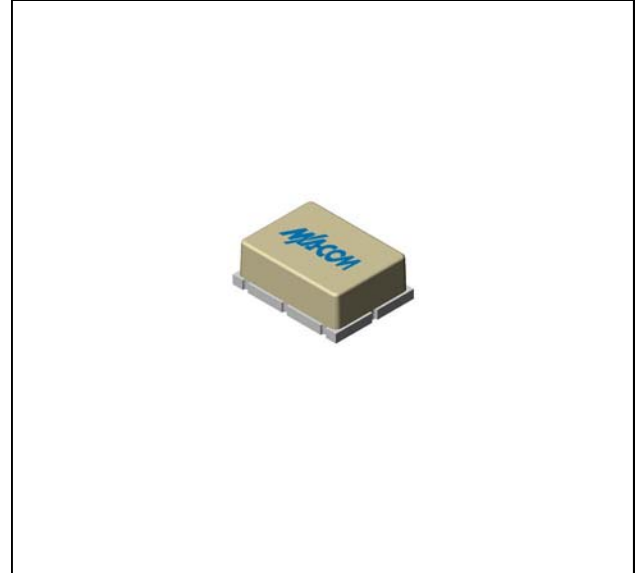
Description

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

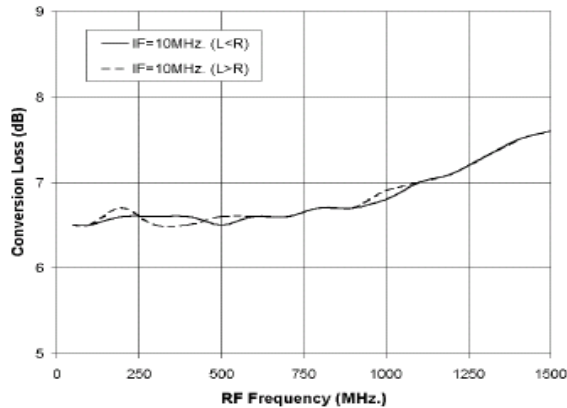


Electrical Specifications: $Z_0 = 50\Omega$ $Lo = +13$ dBm (Downconverter application only)

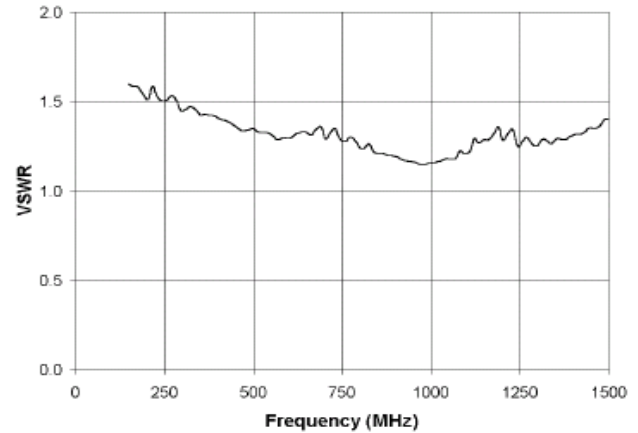
Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25°C	-40° to +85°C
SSB Conversion Loss (max)	fR = 10 to 1000 MHz, fL = 10 to 1000 MHz, fI = 1 to 500 MHz fR = 1000 to 1500 MHz, fL = 1000 to 1500 MHz, fI = 1 to 500 MHz	dB	6.5	7.0	7.5
			7.5	8.0	8.5
SSB Noise Figure		dB	Within 1 dB of conversion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

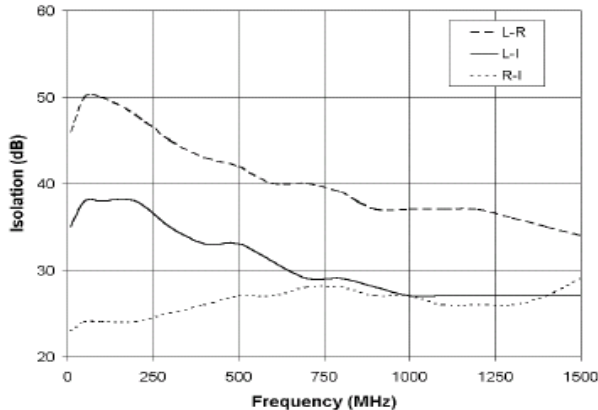
Conversion Loss vs. RF Frequency



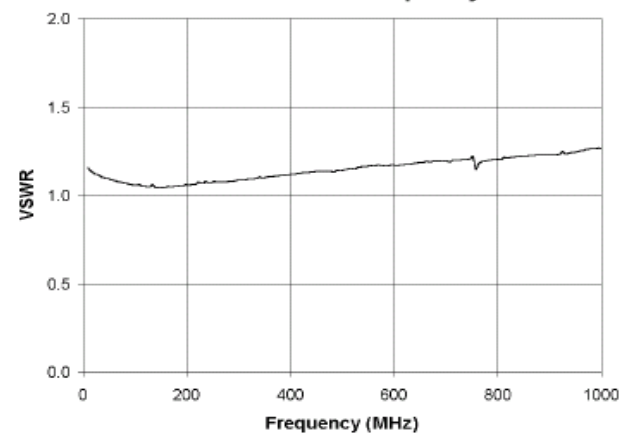
LO-Port VSWR vs. Frequency



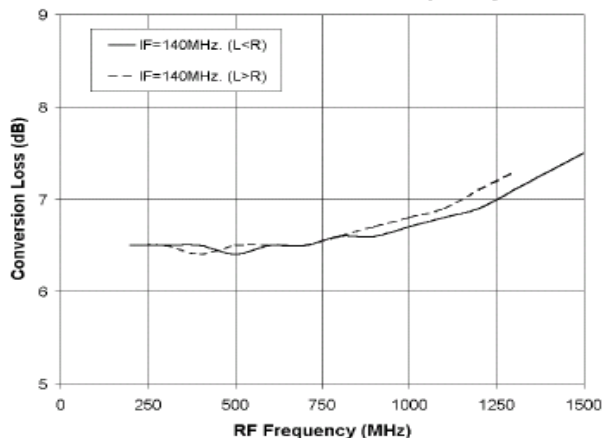
Isolation vs. Frequency



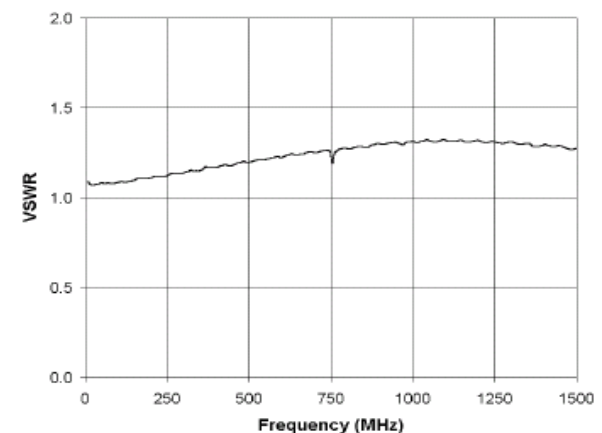
IF-Port VSWR vs. Frequency



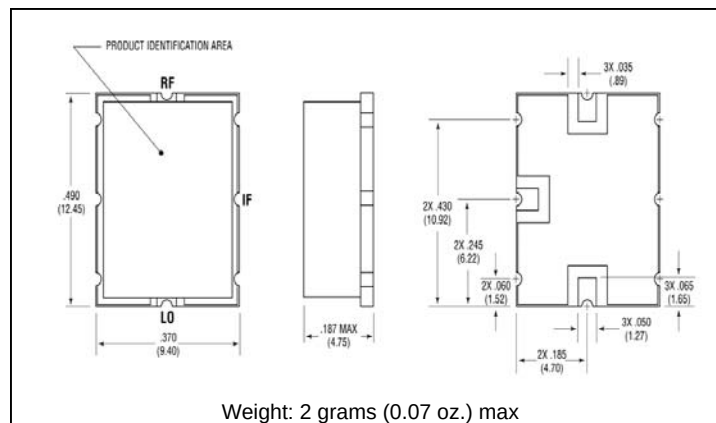
Conversion Loss vs. RF Frequency



RF-Port VSWR vs. Frequency



Outline Drawing: Surface Mount *



* Dimensions are inches (millimeters) ± 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