Low Cost High IP3 Mixer for Cellular Applications



Rev. V3

Features

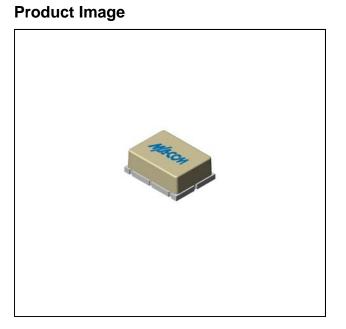
- LO & RF 10 TO 1500 MHz
- IF 1 TO 500 MHz
- LO DRIVE +13 dBm (NOMINAL)
- SURFACE MOUNT
- HIGH INTERCEPT +22 dBm (TYP.)
- +260°C REFLOW COMPATIBLE

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



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

Desconder	Test Osnalitions	Units	Typical	Typical Guaranteed	
Parameter	Test Conditions			+25⁰C	-40º to +85ºC
SSB Conversion Loss (max)	fR = 10 to 1000 MHz, fL = 10 to 1000 MHz, fl = 1 to 500 MHz fR = 1000 to 1500 MHz, fL = 1000 to 1500 MHz, fl = 1 to 500 MHz	dB dB	6.5 7.5	7.0 8.0	7.5 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	fl = 10 to 500 MHz		1.50:1		

1

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Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples indorect outer may be available Commitment to produce in volume is not guaranteed.

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CSM1-13

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Typical Performance Curves

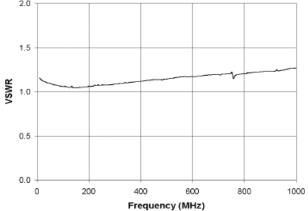


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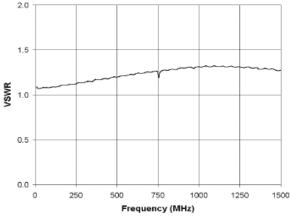
2.0 Conversion Loss vs. RF Frequency 9 1.5 - IF=10MHz. (L<R) - IF=10MHz. (L>R) 8 **UNS**/ Conversion Loss (dB) 0.5 6 0.0 0 250 5 0 250 500 750 1000 1250 1500 RF Frequency (MHz.) Isolation vs. Frequency 2.0 60 -- L-R ------ L-I R-I 1.5 50 Isolation (dB) VSWR 1.0 40 0.5 30 0.0 20 0 250 1000 1250 1500 0 500 750 Frequency (MHz) Conversion Loss vs. RF Frequency 9 2.0 - IF=140MHz. (L<R) -- IF=140MHz. (L>R) 8 1.5 Conversion Loss (dB) VSWR 1.0 6 0.5

LO-Port VSWR vs. Frequency 750 1000 1250 1500 500 Frequency (MHz)

IF-Port VSWR vs. Frequency



RF-Port VSWR vs. Frequency



2

5

0

250

Commitment to produce in volume is not gu

500

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750

RF Frequency (MHz)

1000

1250

1500

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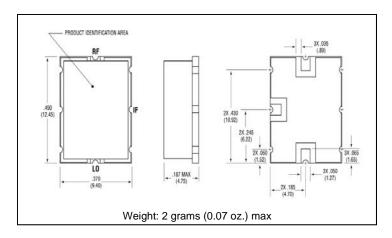
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Outline Drawing: Surface Mount



* 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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