Low Cost High IP3 Mixer for **PCS/WLL** Applications



Rev. V3

Features

- LO & RF 10 TO 2800 MHz •
- IF 10 TO 2000 MHz
- LO DRIVE +10 dBm (NOMINAL) •
- SURFACE MOUNT
- HIGH INTERCEPT +20 dBm (TYP.)
- +260℃ REFLOW COMPATIBLE

Description

The CSM2-10 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
CSM2-10	Surface Mount



Electrical Specifications: $Z_0 = 50\Omega$ Lo = +10 dBm (Downconverter application only)

Parameter	Test Conditions	Units	Typical	pical Guaranteed	
Parameter	Test conditions			+25⁰C	-40º to +85ºC
SSB Conversion Loss(max)	fR = 10 to 1200 MHz, fL = 10 to 1200 MHz, fI = 10 to 1000 MHz fR = 1200 to 2800 MHz, fL = 1200 to 2800 MHz, fI = 10 to 2000 MHz	dB dB	8.0 9.0	8.5 10.0	9.0 10.5
SSB Noise Figure	dB Within 1 dB of conversion loss		sion loss		
L - R Isolation (min)	fL = 10 to 1200 MHz fL = 1200 to 2800 MHz	dB dB	35 30	32 28	30 26
L - I Isolation (min)	fL = 10 to 2800 MHz	dB	27	23	21
R - I Isolation (min)	fR = 10 to 2800 MHz	dB	27		
1 dB Conversion Comp.	fL = +10 dBm	dBm	+7		
Input IP3	$\label{eq:hardward} \begin{array}{l} fL = 10 \mbox{ to } 2800 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2800 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2800 \mbox{ MHz}, \mbox{ fl} = 2000 \mbox{ to } 2800 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 2000 \mbox{ to } 2800 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 2000 \mbox{ to } 2800 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 2000 \mbox{ to } 2800 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 2000 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 10 \mbox{ to } 2000 \mbox{ MHz}, \mbox{ fl} = 2000 \mbox{ to } 2000 \mbox{ mHz}, \mbox{ fl} = 2000 \mbox{ to } 2000 \mbox{ mHz}, \mbox{ fl} = 2000 \mbox{ to } 2000 \mbox{ mHz}, \mbox{ fl} = 2000 \mbox{ to } 2000 \mbox{ mHz}, \mbox{ fl} = 2000 \mbox{ to } 2000 \mbox{ mHz}, \mbox{ fl} = 2000 \mbox{ to } 2000 \mbox{ mHz}, \mbox{ fl} = 2000 \mbox{ to } 2000 \mbox{ mHz}, \mbox{ fl} = 2000 \mbox{ to } 2000 \mbox{ mHz}, \mbox{ fl} = 2000 \mbox{ to } 2000 \mbox{ mHz}, \mbox{ fl} = 2000 \mbox{ to } 2000 \mbox{ mHz}, \mbox{ fl} = 2000 \mbox{ to } 2000 \mbox{ mHz}, \mbox{ fl} = 2000 \mbox{ to } 2000 \mbox{ mHz}, \mbox{ fl} = 2000 \mbox{ to } 2000 \mbox{ mHz}, mHz$	dBm dBm	+20 +17		
R-Port VSWR	fR = 10 to 2800 MHz		1.80:1		
L-Port VSWR	fL =10 to 2000 MHz fL = 2000 to 2800 MHz		1.90:1 2.50:1		
I-Port VSWR	fl = 10 to 2200 MHz		1.80:1		

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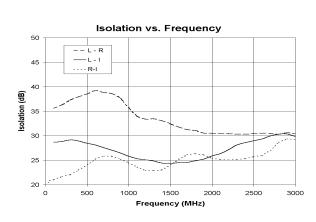
CSM2-10



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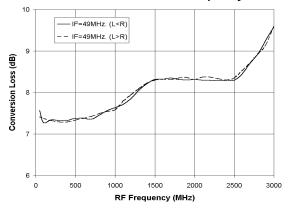
Rev. V3

Typical Performance Curves

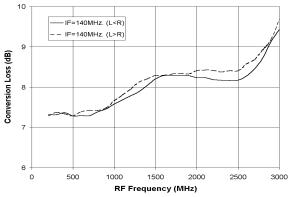


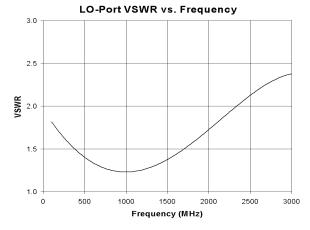
IF-Port VSWR vs. Frequency

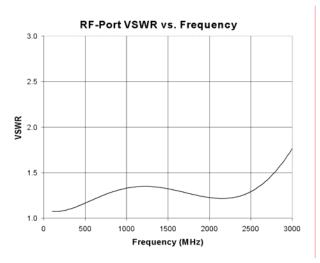
Conversion Loss vs. RF Frequency



Conversion Loss vs. RF Frequency







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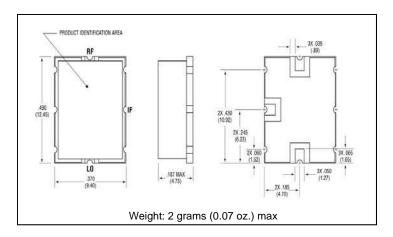
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Outline Drawing: Surface Mount



* 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	-65ºC to +100ºC		
Peak Input Power	+20 dBm max @ -25°C +17 dBm max @ +85°C		
Peak Input Current	50 mA DC		

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