## 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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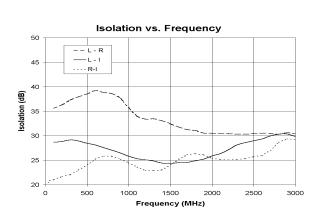
# CSM2-10



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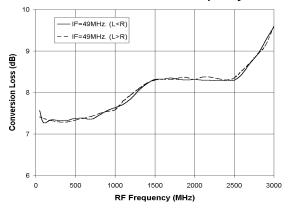
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#### **Typical Performance Curves**

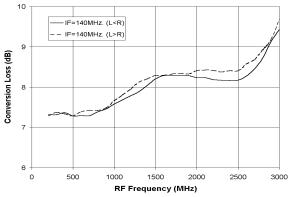


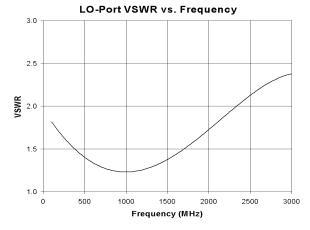
IF-Port VSWR vs. Frequency

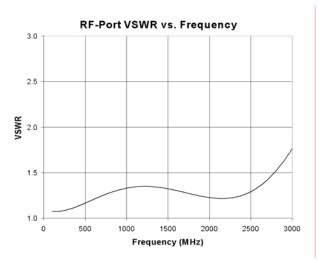
Conversion Loss vs. RF Frequency



Conversion Loss vs. RF Frequency







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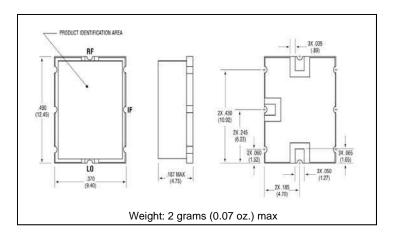
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## Outline Drawing: Surface Mount



\* 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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