Termination Insensitive Mixer



Rev. V5

Features

- LO 1 to 3400 MHz
- RF 1 to 3400 MHz
- IF 1 to 2000 MHz .
- LO Drive +17 dBm (nominal)
- High Intercept +25 dBm (typ)
- +260° Reflow Compatible

Description

The CSM4T17 is a termination insensitive mixer, designed for use in military, wireless, and test equipment applications. The design utilizes Schottky bridge quad diodes, broadband ferrite baluns and internal loads to provide excellent performance without degradation due to external VSWR mismatches.

Ordering Information

Part Number	Package	
CSM4T17	Surface Mount	

Electrical Specifications: $Z_0 = 50\Omega$ Lo = +17 dBm (Downconverter application only)

Parameter	Test Conditions	Units	Typical	Guaranteed	
Parameter	Test Conditions			+25⁰C	-40º to +85ºC
SSB Conversion Loss(max)	$\label{eq:response} \begin{array}{l} fR = 1 \ to \ 2400 \ \text{MHz}, \ fL = 1 \ to \ 2400 \ \text{MHz}, \ fI = 1 \ to \ 2000 \ \text{MHz} \\ fR = 1 \ to \ 3400 \ \text{MHz} \ , \ fL = 1 \ to \ 3400 \ \text{MHz} \ , \ fI = 1 \ to \ 2000 \ \text{MHz} \end{array}$	dB	8.0 dB 9.0 dB	9.0 10.0	10.5 11.5
SSB Noise Figure		dB	Within 1 dB of conversion loss		
L - R Isolation (min)	fL = 1 to 2400 MHz fL = 2400 to 3400 MHz	dB	35 25	25 20	23 18
L - I Isolation (min)	fL = 1 to 2400 MHz fL = 2400 to 3400 MHz	dB	35 25	25 20	23 18
R - I Isolation (min)	fR = 1 to 3400 MHz	dB	30		
1 dB Conversion Comp.	fL= +17 dBm	dBm	+14		
Input IP3	fR1 = 100 to 3400 MHz, fR2 = 100 to 3400 MHz, fL = 50 to 2000 MHz	dBm	+25		
R-Port VSWR	fR = 1 to 3400 MHz		2.0:1		
L-Port VSWR	fL = 1 to 3400 MHz		2.0:1		
I-Port VSWR	fl = 1 to 2000 MHz		2.0:1		

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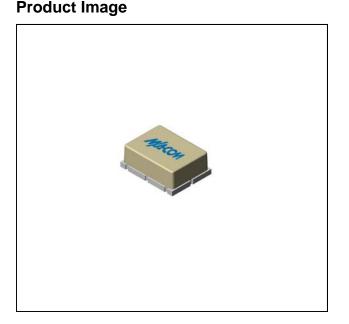
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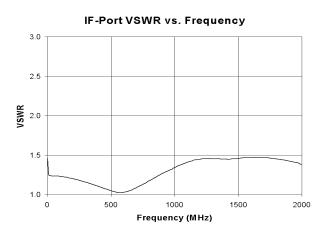


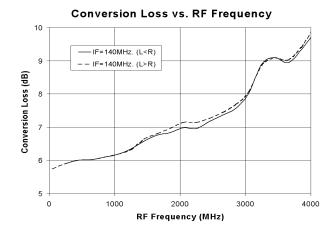
CSM4T17

Termination Insensitive Mixer

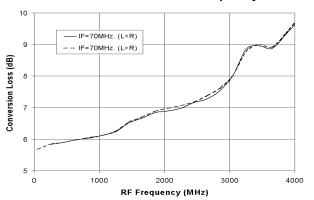


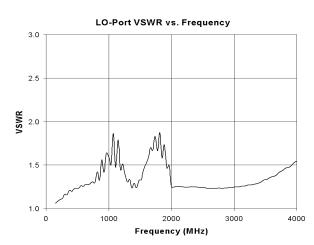
Typical Performance Curves



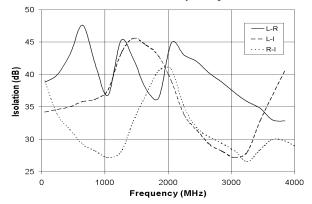


Conversion Loss vs. RF Frequency





Isolation vs. Frequency



RF-Port VSWR vs. Frequency

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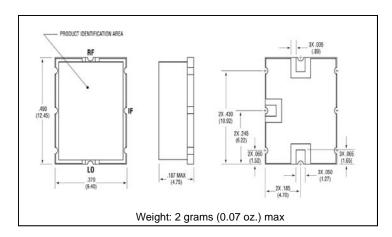
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Outline Drawing: Surface Mount



* Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified.

Absolute Maximum Ratings

Parameter	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	

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