

Load Insensitive Mixer

Rev. V4

Features

- LO 1 TO 3400 MHz
- RF 1 TO 3400 MHz
- IF 1 TO 2000 MHz
- LO DRIVE: +23 dBm (NOMINAL)
- INSENSITIVE TO SYSTEM MISMATCH
- HIGH INTERCEPT: +29 dBm (TYP.)
- AVAILABLE IN SURFACE MOUNT
- +260°C REFLOW COMPATIBLE

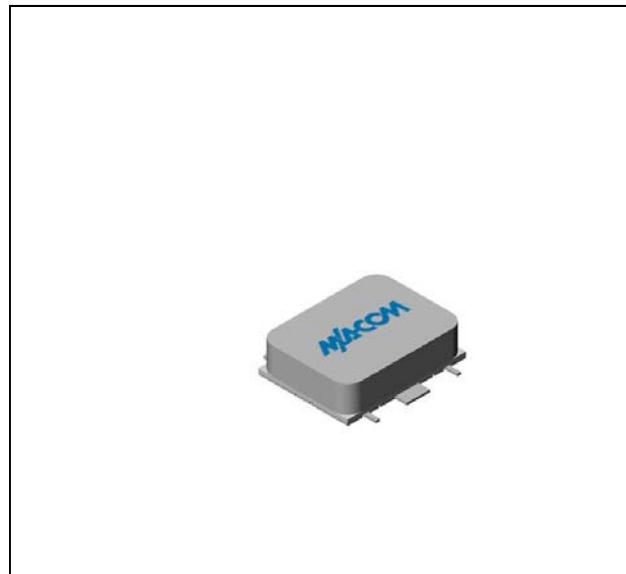
Description

The SM4TH is a termination insensitive mixer, designed for use in military, commercial 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. Environmental screening available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.

Ordering Information

Part Number	Package
SM4TH	Surface Mount

Product Image

Electrical Specifications: $Z_0 = 50\Omega$ $Lo = +23 \text{ dBm}$ (Downconverter application only)

Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25°C	-54° to +85°C
SSB Conversion Loss (max) & SSB Noise Figure (max)	$f_R = 0.005 \text{ to } 2.0 \text{ GHz}$, $f_L = 0.005 \text{ to } 2.0 \text{ GHz}$, $f_I = 0.001 \text{ to } 0.5 \text{ GHz}$ $f_R = 0.001 \text{ to } 3.4 \text{ GHz}$, $f_L = 0.001 \text{ to } 3.4 \text{ GHz}$, $f_I = 0.001 \text{ to } 2.0 \text{ GHz}$	dB dB	7.0 9.0	8.0 10.5	8.5 11.0
Isolation, L to R (min)	$f_L = 0.01 \text{ to } 1.5 \text{ GHz}$ $f_L = 0.01 \text{ to } 3.4 \text{ GHz}$	dB dB	35 35	30 22	29 21
Isolation, L to I (min)	$f_L = 0.01 \text{ to } 1.5 \text{ GHz}$ $f_L = 0.01 \text{ to } 3.4 \text{ GHz}$	dB dB	40 35	30 25	29 24
Isolation, R to I (min)	$f_R = 0.001 \text{ to } 3.4 \text{ GHz}$	dB	21		
1 dB Conversion Comp.	$f_L = +23 \text{ dBm}$	dBm	+17		
Input IP3	$f_R = 2 \text{ GHz at } 0 \text{ dBm}$, $f_R = 2.01 \text{ GHz at } 0 \text{ dBm}$, $f_L = 1.9 \text{ GHz at } +23 \text{ dBm}$	dBm	+29		

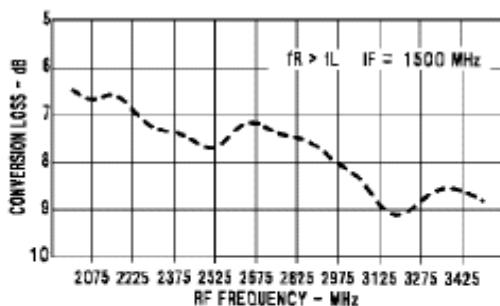
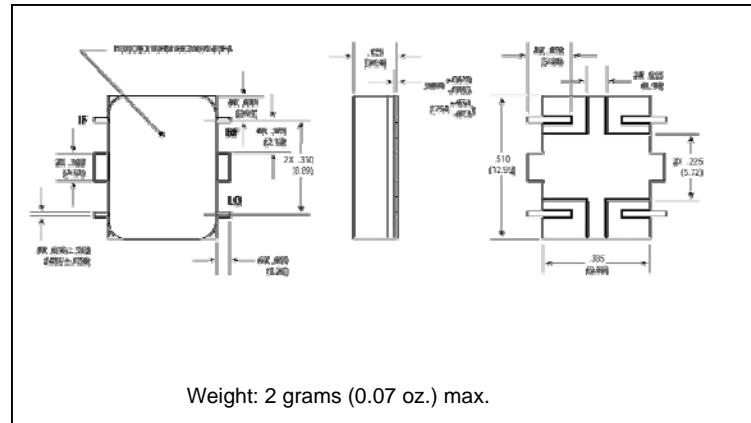
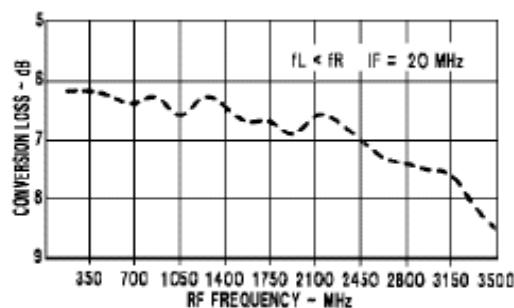
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Typical Performance Curves

Outline Drawing: Surface Mount *

Conversion Loss vs. Frequency



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

Absolute Maximum Ratings

Parameter	Absolute Maximum
Operating Temperature	-54°C to +100°C
Storage Temperature	-65°C to +100°C
Peak Input Power	+27 dBm max @ +25°C +23 dBm max @ +100°C
Peak Input Current	50 mA DC

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