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	

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

Deremeter	Test Conditions	Unite	Typical	Guaranteed	
Parameter Test Conditions		Units		+25⁰C	-54º to +85ºC
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 0.005 to 2.0 GHz, fL = 0.005 to 2.0 GHz, fI = 0.001 to 0.5 GHz fR = 0.001 to 3.4 GHz, fL = 0.001 to 3.4 GHz , fI = 0.001 to 2.0 GHz	dB dB	7.0 9.0	8.0 10.5	8.5 11.0
Isolation, L to R (min)	fL = 0.01 to 1.5 GHz fL = 0.01 to 3.4 GHz	dB dB	35 35	30 22	29 21
Isolation, L to I (min)	fL = 0.01 to 1.5 GHz fL = 0.01 to 3.4 GHz	dB dB	40 35	30 25	29 24
Isolation, R to I (min)	fR = 0.001 to 3.4 GHz	dB	21		
1 dB Conversion Comp.	fL= +23 dBm	dBm	+17		
Input IP3	fR1 = 2 GHz at 0 dBm, fR2 = 2.01 GHz at 0 dBm, fL = 1.9 GHz at +23 dBm	dBm	+29		

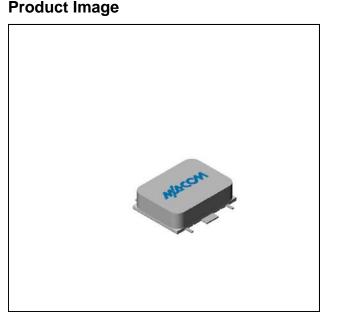


ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed. PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology

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SM4TH

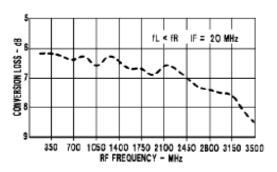


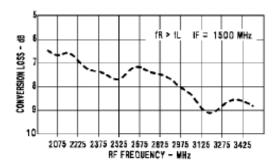


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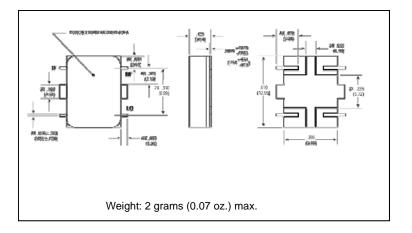
Typical Performance Curves

Conversion Loss vs. Frequency





Outline Drawing: Surface Mount *



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

Absolute Maximum Ratings

Commitment to produce in volume is not guaranteed.

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Parameter	Absolute Maximum
Operating Temperature	-54°C to +100°C
Storage Temperature	-65°C to +100°C
Peak Input Power	+27 dBm max @ +25⁰C +23 dBm max @ +100⁰C
Peak Input Current	50 mA DC

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