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M8TH / M8THC

Load Insensitive Mixer

Rev. V5

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.)

Description

The M8TH 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. Environmental screening available to MIL-STD-883, MIL-STD-202 or MIL-DTL-28837, consult factory.

Product Image





Ordering Information

Part Number	Package
M8TH	TO-8
M8THC	SMA Connectorized

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

Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25ºC	-54º to +85ºC*
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 0.005 to 2 GHz, fL = 0.005 to 2 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 GHz	dB dB	6.5 8.5	8.0 10.5	8.3 10.8
Isolation, L to R (min)	fL = 0.01 to 1.5 GHz fL = 0.01 to 3.4 GHz	dB dB	37 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 = 0.01 to 3.4 GHz	dB	21		
1 dB Conversion Comp.	fL = +23 dBm	dBm	+17		
Input IP3	fR1 = 1 GHz at 0 dBm, fR2 = 1.01 GHz at 0 dBm, fL = 1.8 GHz at +22 dBm	dBm	+29		

* The M8TC specification limits apply at 0ºC to +50ºC.

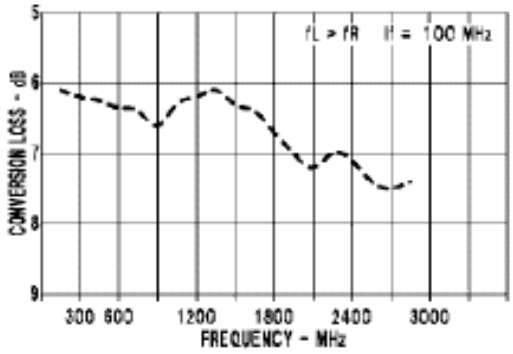
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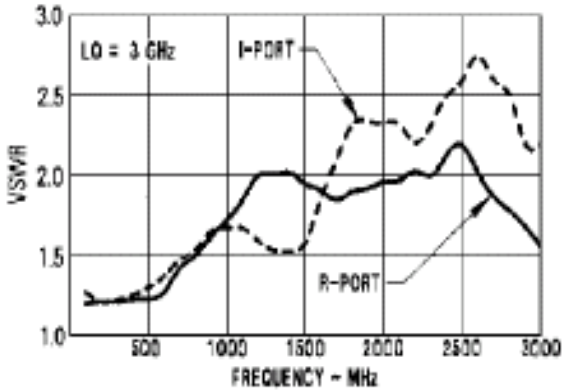
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Typical Performance Curves

Conversion Loss vs. Frequency



VSWR vs. Frequency



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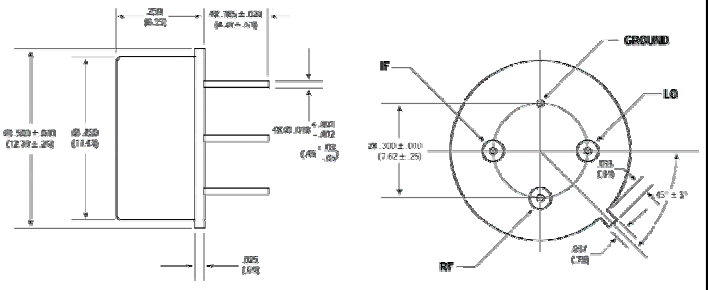
Load Insensitive Mixer

Rev. V5

Absolute Maximum Ratings

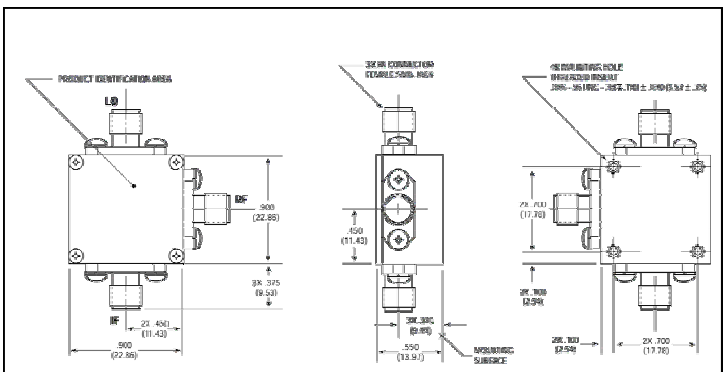
Parameter	Absolute Maximum
Operating Temperature	-54ºC to +100ºC
Storage Temperature	-65ºC to +100ºC
Peak Input Power	+27 dBm max @ +25ºC +23 dBm max @ +100ºC
Peak Input Current	mA DC

Outline Drawing: TO-8 *



Weight: 2 grams (0.07 oz.) max

Outline Drawing: SMA Connectorized *



Weight: 22.5 grams (0.77 oz.) max

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

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