

**Load Insensitive Mixer**

**M8TH/M8THC**

V4

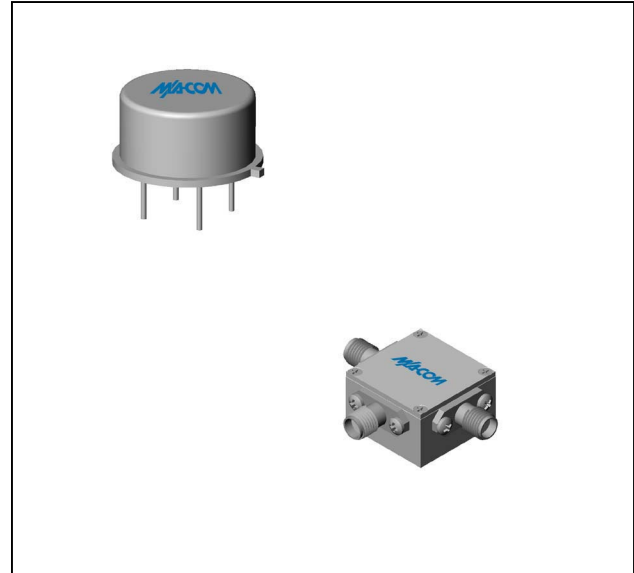
**Features**

- 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.)

**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

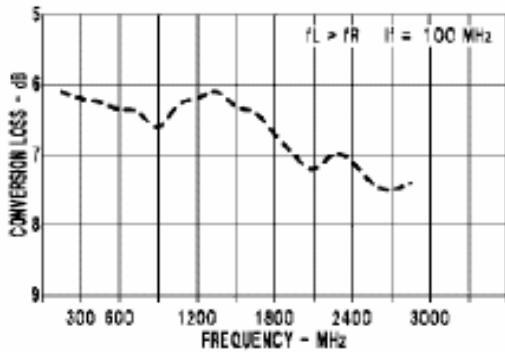
**Electrical Specifications:  $Z_0 = 50\Omega$   $Lo = +23$  dBm (Downconverter application only)**

Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25°C	-54° to +85°C*
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 0.005 to 2 GHz, fL = 0.005 to 2 GHz, fl = 0.001 to 0.5 GHz fR = 0.001 to 3.4 GHz, fL = 0.001 to 3.4 GHz, fl = 0.001 to 2 GHz	dB	6.5	8.0	8.3
			8.5	10.5	10.8
Isolation, L to R (min)	fL = 0.01 to 1.5 GHz fL = 0.01 to 3.4 GHz	dB	37	30	29
			35	22	21
Isolation, L to I (min)	fL = 0.01 to 1.5 GHz fL = 0.01 to 3.4 GHz	dB	40	30	29
			35	25	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		

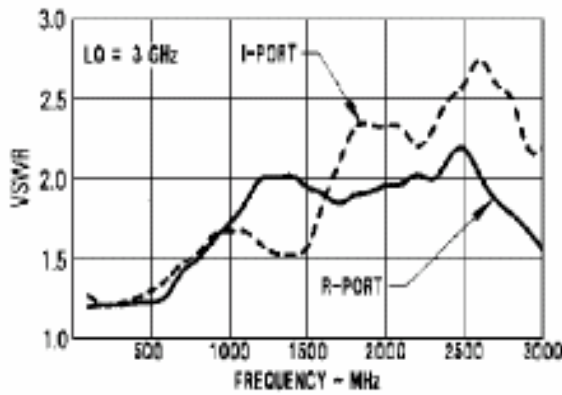
\* The M8TC specification limits apply at 0°C to +50°C.

Typical Performance Curves

Conversion Loss vs. Frequency



VSWR vs. Frequency



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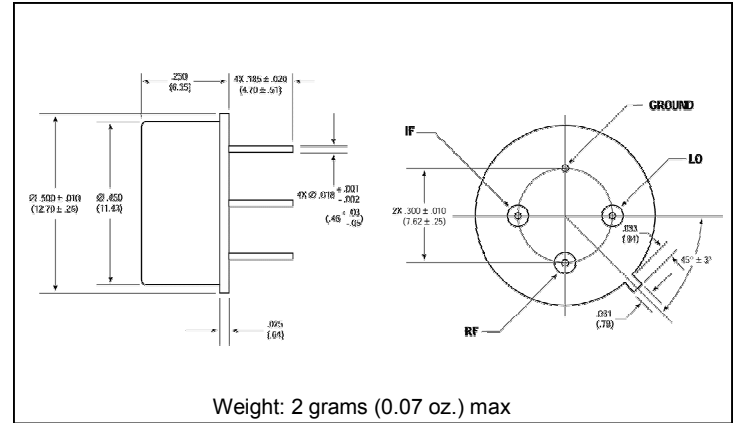
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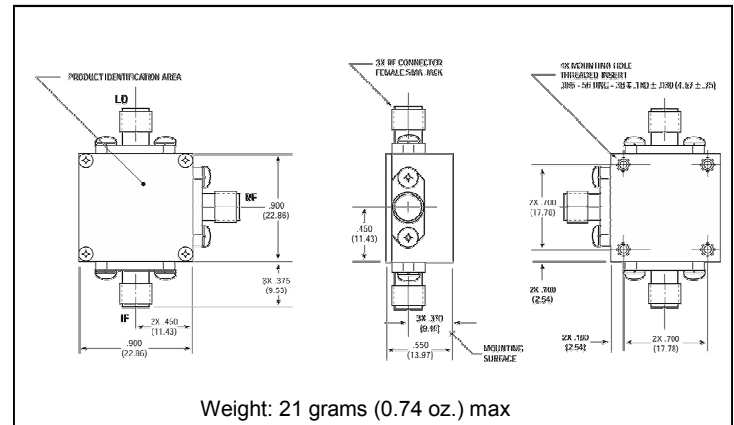
**Absolute Maximum Ratings**

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	mA DC

**Outline Drawing: TO-8 \***



**Outline Drawing: SMA Connectorized \***



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