# 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.)

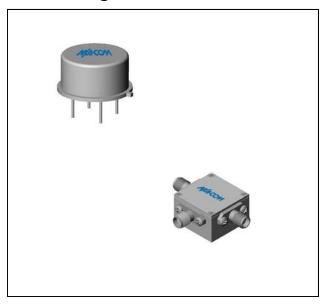
### **Description**

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.

#### **Ordering Information**

Part Number	Package
M8TH	TO-8
мвтнс	SMA Connectorized

#### Product Image



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

Parameter	Test Conditions	Units	Typical	Guaranteed	
Parameter				+25°C	-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		

<sup>\*</sup> The M8TC specification limits apply at 0°C to +50°C.

Commitment to produce in volume is not guaranteed.

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 Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available.

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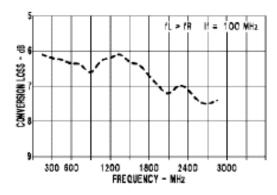


**Load Insensitive Mixer** 

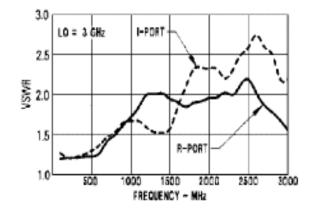
Rev. V5

### **Typical Performance Curves**

#### Conversion Loss vs. Frequency



## VSWR vs. Frequency



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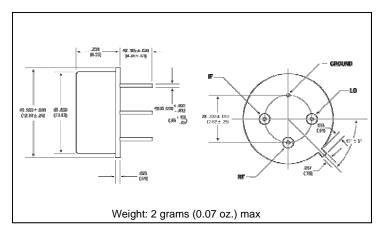
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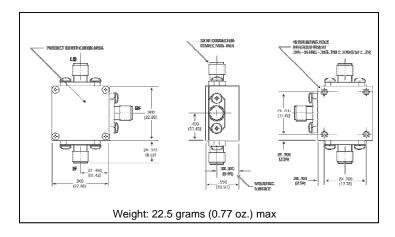
### **Absolute Maximum Ratings**

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.

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