

#### Load Insensitive Mixer

Rev. V3

#### **Features**

- LO 0.001 to 3.4 GHz
- RF 0.001 to 3.4 GHz
- IF 0.001 to 2 GHz
- LO Drive +10 dBm (nominal)
- Insensitive To VSWR Mismatch
- High Intercept Point +18 dBm (typ)

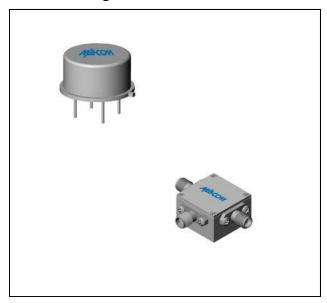
## **Description**

The M8T 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	
M8T	TO-8	
M8TC	SMA Connectorized	

## **Product Image**



## Electrical Specifications: $Z_0 = 50\Omega$ Lo =+10 dBm (Downconverter application only)

Downwator	Took Conditions	Units	Typical	Guaranteed	
Parameter	Test Conditions			+25ºC	-54º to +85ºC*
SSB Conversion Loss (max)	$fR = 0.005 \ to \ 1 \ GHz, \ fL = 0.005 \ to \ 1 \ GHz, \ fI = 0.001 \ to \ 0.5 \ GHz \\ fR = 0.001 \ to \ 3 \ GHz, \ fL = 0.001 \ to \ 3 \ GHz, \ fI = 0.001 \ to \ 3.4 \ GHz, \ fL = 0.001 \ to \ 3.4 \ GHz, \ fI = 0.001 \ to \ 2 \ GHz$	dB	6.0 7.0 8.0	8.0 9.0 10.5	8.5 9.5 11.0
SSB Noise Figure (max)	Within 1 dB of conversion loss	dB			
Isolation, L to R (min)	fL = 0.01 to 1.5 GHz fL = 0.01 to 3.4 GHz	dB	40 35	35 25	33 23
Isolation, L to I (min)	fL = 0.01 to 1.5 GHz fL = 0.01 to 3.4 GHz	dB	40 35	32 25	30 23
Isolation, R to I (min)	fR = 0.01 to 3.4 GHz	dB	25		
1 dB Conversion Comp.	fL = +10 dBm	dBm	+7		
Input IP3	fR1 = 1.9 GHz at -10 dBm, fR2 = 1.91 GHz at -10 dBm, fL = 2 GHz at +10 dBm	dBm	+18		

<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.

<sup>•</sup> North America Tel: 800.366.2266 • Europe Tel: +353.21.244.6400

<sup>•</sup> India Tel: +91.80.4155721 • China Tel: +86.21.2407.1588

Visit www.macomtech.com for additional data sheets and product information.

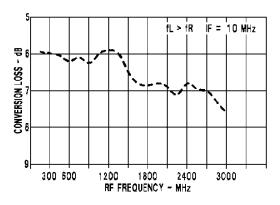


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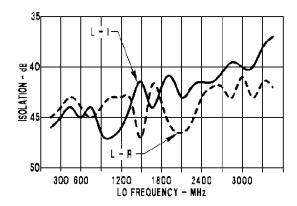
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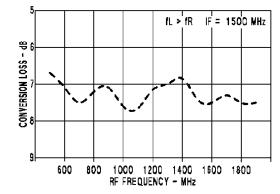
## **Typical Performance Curves**

#### Conversion Loss vs. Frequency



## Isolation vs. Frequency





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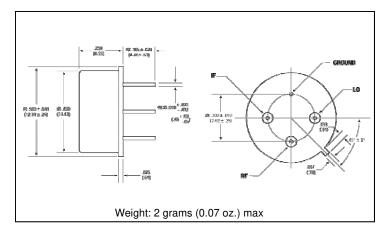
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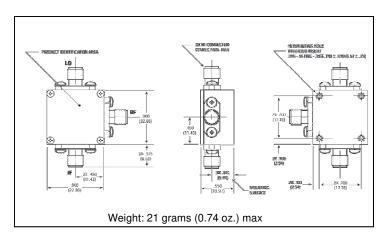
## **Absolute Maximum Ratings**

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