

#### **Double-Balanced Mixer**

Rev. V5

#### **Features**

• LO & RF: 10 TO 1600 MHz

IF: DC TO 800 MHz

LO DRIVE: +13 dBm (NOMINAL)
HIGH ISOLATION: 40 dB (TYP.)

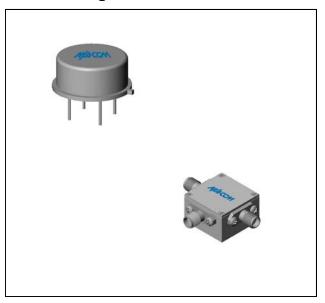
#### **Description**

The M2B is a double balanced mixer, designed for use in military, commercial, and test equipment applications. The design utilizes Schottky ring quad diodes and broadband ferrite baluns to attain excellent performance. This mixer can also be used as a phase detector and/or bi-phase modulator since the IF port is DC coupled to the diodes. Environmental screening is available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.

### **Ordering Information**

Part Number	Package	
M2B	TO-8	
M2BC	SMA Connectorized	

#### **Product Image**



# Electrical Specifications: $Z_0 = 50\Omega$ Lo = +13 dBm (Downconverter application only)

Dorometer	Deservator Test Conditions		Typical	Guaranteed	
Parameter Test Conditions		Units		+25°C	-54º to +85ºC *
SSB Conversion Loss (max) & SSB Noise Figure (max)	$\label{eq:fr} \begin{array}{l} \text{fR} = 0.02 \text{ to } 0.6 \text{ GHz}, \text{ fL} = 0.01 \text{ to } 0.8 \text{ GHz}, \text{ fI} = 0.0004 \text{ to } 0.2 \text{ GHz} \\ \text{fR} = 0.01 \text{ to } 1.6 \text{ GHz}, \text{ fL} = 0.01 \text{ to } 1.6 \text{ GHz}, \text{ fI} = 0.0004 \text{ to } 0.8 \text{ GHz} \\ \end{array}$	dB dB	7.0 8.0	8.0 9.0	8.5 9.5
Isolation, L to R (min)	fL = 0.01 to 0.7 GHz fL = 0.7 to 1.2 GHz fL = 1.2 to 1.6 GHz	dB dB dB	50 45 35	40 30 25	38 28 23
Isolation, L to I (min)	fL = 0.01 to 0.7 GHz fL = 0.7 to 1.2 GHz fL = 1.2 to 1.6 GHz	dB dB dB	40 30 25	30 20 18	28 18 16
1 dB Conversion Comp.	fL = +13 dBm	dBm	+7		
Input IP3		dBm	+22		

<sup>\*</sup> The M2BC specification limits apply at 0°C to +50°C.

Commitment to produce in volume is not guaranteed.

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

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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 China Tel: +86.21.2407.1588
 Visit www.macomtech.com for additional data sheets and product information.

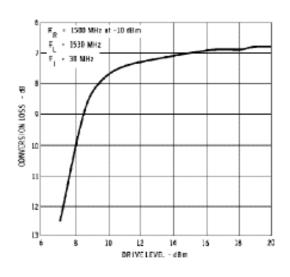


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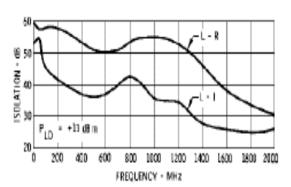
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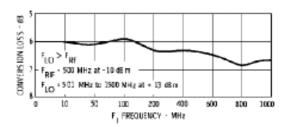
#### **Typical Performance Curves**

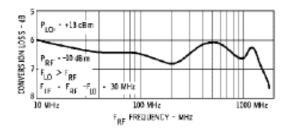
#### Conversion Loss



## Isolation







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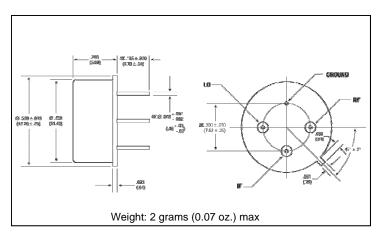
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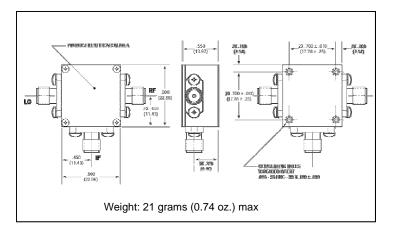
### **Absolute Maximum Ratings**

Parameter	Absolute Maximum		
Operating Temperature	-54°C to +100°C		
Storage Temperature	-65°C to +100°C		
Peak Input Power	+23 dBm max @ +25°C +17 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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