

### **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.)

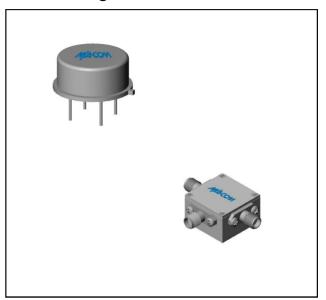
## **Description**

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)

Parameter	Test Conditions	Units	Typical	Guaranteed	
raianietei				+25°C	-54° to +85°C *
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 0.02 to 0.6 GHz, fL = 0.01 to 0.8 GHz, fI = 0.0004 to 0.2 GHz fR = 0.01 to 1.6 GHz, fL = 0.01 to 1.6 GHz, fI = 0.0004 to 0.8 GHz	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.

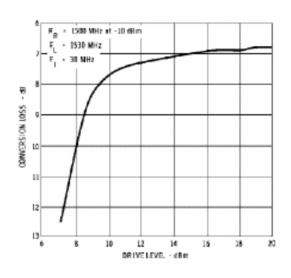


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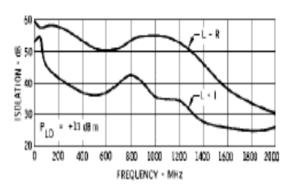
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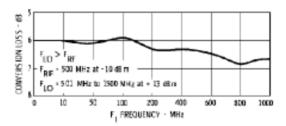
## **Typical Performance Curves**

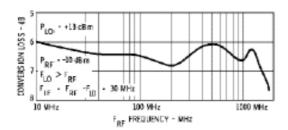
#### Conversion Loss



# Isolation









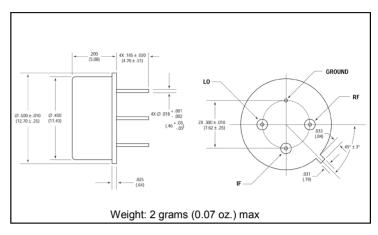
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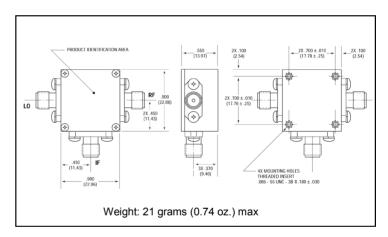
# **Absolute Maximum Ratings**

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.

# **M2B / M2BC**



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