

Double-Balanced Mixer

M4B/SM4B

V3

Features

- LO 10 TO 1500 MHz
- RF 10 TO 1500 MHz
- IF DC TO 1000 MHz
- LO DRIVE: +13 dBm (NOMINAL)
- HIGH ISOLATION: 35 dB (TYP.)
- AVAILABLE IN SURFACE MOUNT

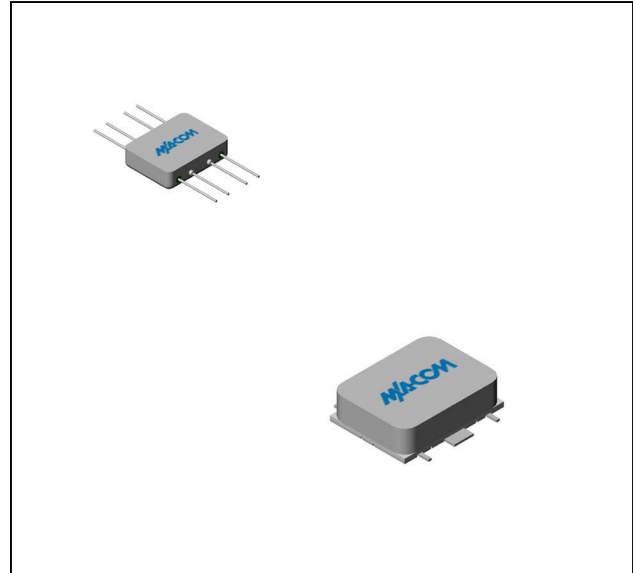
Description

The M4B 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
M4B	Flatpack
SM4B	Surface Mount

Product Image



Electrical Specifications: $Z_0 = 50\Omega$ $L_o = +13$ 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 = 0.01 to 1.2 GHz, fL = 0.01 to 1.2 GHz, fl = 0.0004 to 0.2 GHz fR = 0.01 to 1.5 GHz, fL = 0.01 to 1.5 GHz, fl = 0.0004 to 0.2 GHz fR = 0.01 to 1.5 GHz, fL = 0.01 to 1.5 GHz, fl = 0.0004 to 1 GHz	dB dB dB	7.5	8.5	9.0
			8.0	9.0	9.5
			8.5	9.5	10.0
Isolation, L to R (min)	fL = 0.01 to 0.6 GHz fL = 0.6 to 1.2 GHz fL = 1.2 to 1.5 GHz	dB dB dB	45	35	33
			35	25	23
			28	22	20
Isolation, L to I (min)	fL = 0.1 to 0.6 GHz fL = 0.6 to 1.2 GHz fL = 1.2 to 1.5 GHz	dB dB dB	40	30	28
			30	25	23
			23	18	16
1 dB Conversion Comp.	fL @ +13 dBm	dBm	+7		
Input IP3					

* The SM4B specification limits apply at 0°C to +50°C.

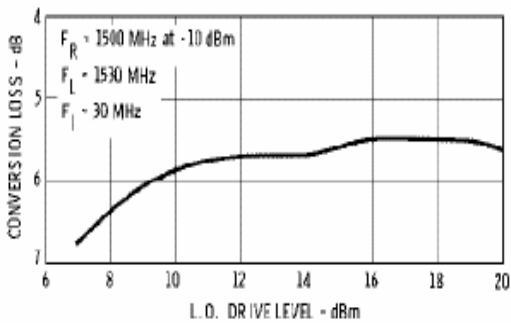
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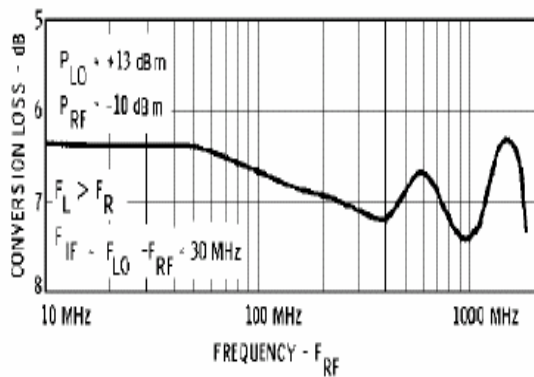
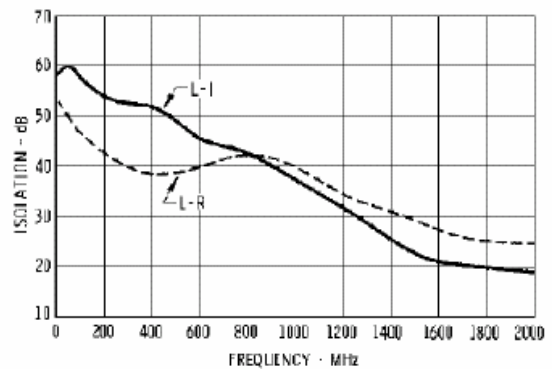
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Typical Performance Curves

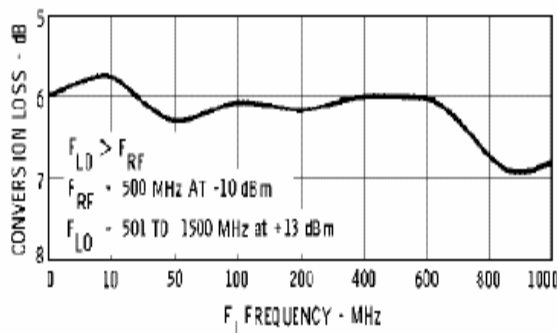
Conversion Loss



Isolation



Conversion Loss



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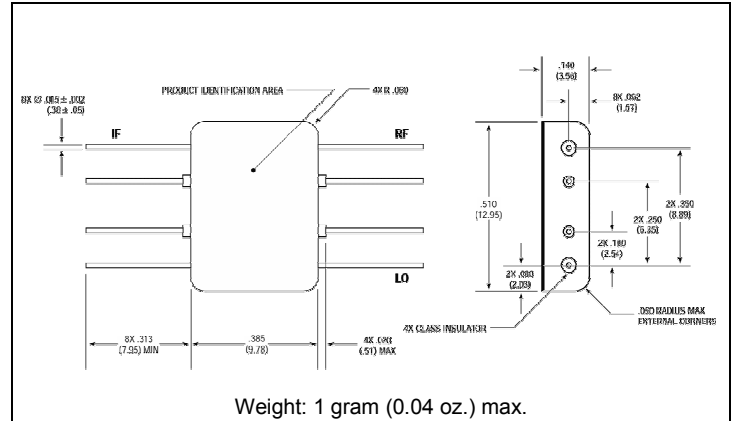
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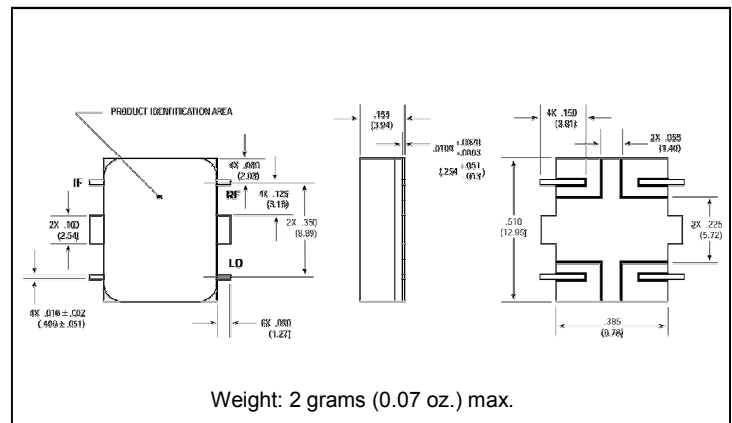
Absolute Maximum Ratings

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: Flatpack *



Outline Drawing: Surface Mount *



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