M4B / SM4B

Double-Balanced Mixer



Rev. V4

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	

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

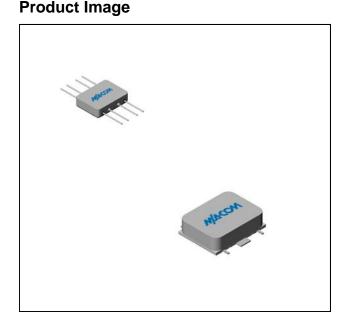
Parameter	Test Conditions	Units	Typical	Guaranteed	
Farameter	imeter lest Conditions			+25⁰C	-54º to +85ºC
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 0.01 to 1.2 GHz, fL =0.01 to 1.2 GHz, fI =0.0004 to 0.2 GHz fR = 0.01 to 1.5 GHz, fL =0.01 to 1.5 GHz, fI =0.0004 to 0.2 GHz fR = 0.01 to 1.5 GHz, fL =0.01 to 1.5 GHz, fI =0.0004 to 1 GHz	dB dB dB	7.5 8.0 8.5	8.5 9.0 9.5	9.0 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 28	35 25 22	33 23 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 23	30 25 18	28 23 16
1 dB Conversion Comp.	fL @ +13 dBm	dBm	+7		
Input IP3					



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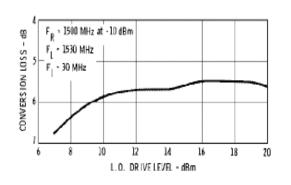


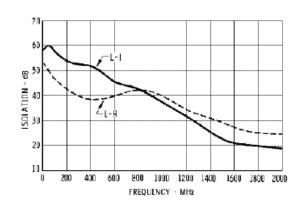
M4B / SM4B



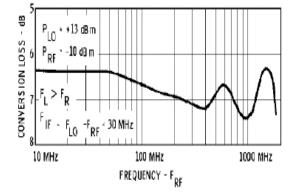
Typical Performance Curves

Conversion Loss

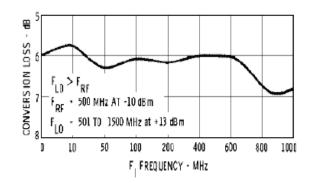




Isolation



Conversion Loss



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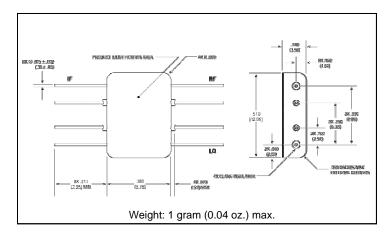


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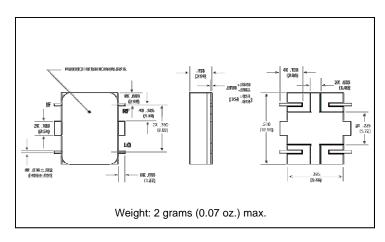
Absolute Maximum Ratings

Parameter	Absolute Maximum	
Operating Temperature	-54ºC to +100ºC	
Storage Temperature	-65ºC to +100ºC	
Peak Input Power	+23 dBm max @ +25⁰C +17 dBm max @ +100⁰C	
Peak Input Current	50 mA DC	

Outline Drawing: Flatpack *



Outline Drawing: Surface Mount *



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

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