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**

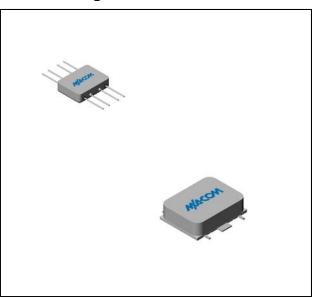
Description

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

Product Image



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

Parameter	Test Conditions	Units	Typical	Guaranteed	
Farameter	rest Conditions			+25°C	-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					

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. Commitment to produce in volume is not guaranteed.

[•] India Tel: +91.80.4155721 • China Tel: +86.21.2407.1588 Visit www.macomtech.com for additional data sheets and product information.

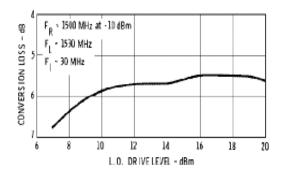


Double-Balanced Mixer

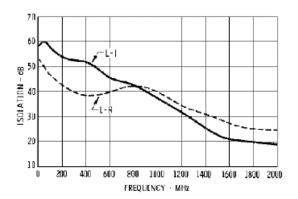
Rev. V4

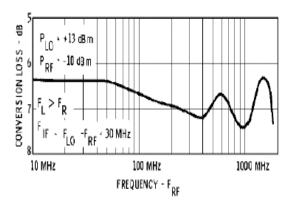
Typical Performance Curves

Conversion Loss

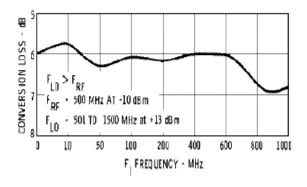


Isolation





Conversion Loss



- North America Tel: 800.366.2266 Europe Tel: +353.21.244.6400
- India Tel: +91.80.4155721
- China Tel: +86.21.2407.1588

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions



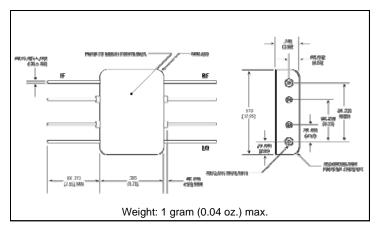
Double-Balanced Mixer

Rev. V4

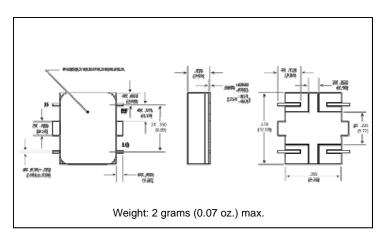
Absolute Maximum Ratings

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.

Commitment to produce in volume is not guaranteed.