

Double-Balanced Mixer

Rev. V4

Features

- LO 10 TO 1500 MHz
- RF 10 TO 1500 MHz
- IF DC TO 1000 MHz
- LO DRIVE: +7 dBm (NOMINAL) HIGH ISOLATION: 35 dB (TYP.)

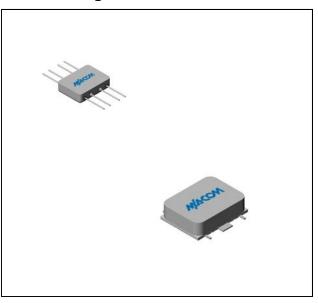
Description

The M4A 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
M4A	Flatpack
SM4A	Surface Mount

Product Image



Electrical Specifications: $Z_0 = 50\Omega$ Lo = +7 dBm (Downconverter application only)

Parameter	Parameter Test Conditions		Typical	Guaranteed	
Parameter Test Conditions		Units		+25°C	-54º to +85ºC *
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 0.02 to 0.6 GHz, fL =0.01 to 0.8 GHz, fI =0.001 to 0.2 GHz fR = 0.01 to 1.2 GHz, fL =0.01 to 1.4 GHz, fI =0.001 to 0.2 GHz fR = 0.01 to 1.5 GHz, fL =0.01 to 1.5 GHz, fI =0.001 to 0.2 GHz fR = 0.01 to 1.5 GHz, fL =0.01 to 1.5 GHz, fI =0.001 to 1 GHz	dB dB dB dB	6.0 7.0 7.5 8.5	7.0 8.0 8.5 9.5	7.5 8.5 9.0 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	40 35 30	30 25 25	28 23 23
Isolation, L to I (min)	fL = 0.1 to 0.6 GHz fL = 0.6 to 1.2 GHz fL = 1.2 to 1.4 GHz	dB dB dB	40 30 25	25 20 18	23 18 16
1 dB Conversion Comp.	fL @ +7 dBm	dBm	+0		
Input IP3					

^{*} The SM4A specification limits apply at 0°C to +50°C.

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

[•] North America Tel: 800.366.2266 • Europe Tel: +353.21.244.6400

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

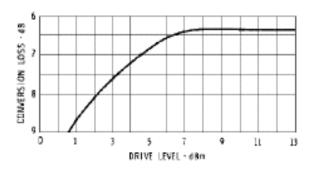


Double-Balanced Mixer

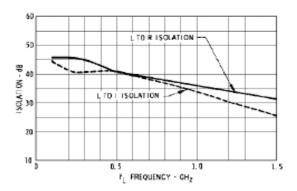
Rev. V4

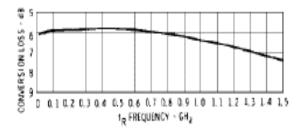
Typical Performance Curves

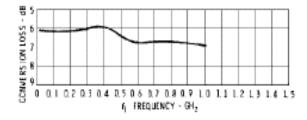
Conversion Loss



Isolation







Commitment to produce in volume is not guaranteed.



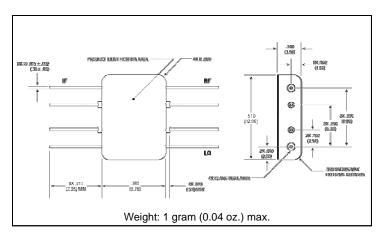
Double-Balanced Mixer

Rev. V4

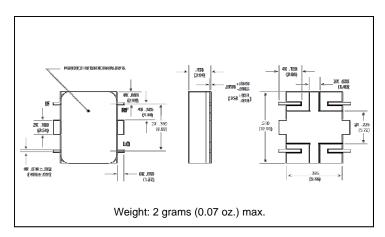
Absolute Maximum Ratings

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.