

Open Carrier Double-Balanced Mixer For Microwave Telecommunications

Rev. V2

Features

- LO 2.2 TO 8.0 GHz
- RF 3.4 TO 7.0 GHz
- IF DC TO 2.0 GHz
- LO DRIVE +13 dBm (NOMINAL)
- MICROSTRIP INTERFACE

Description

The MC2313 is a double balanced mixer, designed for use in military, commercial and test equipment applications. The design utilizes Schottky ring quad diodes and broadband soft dielectric and 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. The use of high temperature solder and welded assembly processes used internally makes it ideal for use in manual, semi-automated assembly. Environmental screening available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.

Product Image



Ordering Information

Part Number	Package
MC2313	Open Carrier
MC2313-2	Open Carrier

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=3.4 to 7 GHz, fL=2.2 to 8 GHz, fl=0.05 to 0.5 GHz	dB	5.2	7.0	7.3
	fR=3.4 to 7 GHz, fL=2.2 to 8 GHz, fl=0.05 to 1.5 GHz	dB	6.5	8.0	8.5
	fR=3.4 to 7 GHz, fL=2.2 to 8 GHz, fl=0.05 to 2 GHz	dB	7.0	8.5	9.0
Isolation, L to R (min)	fL = 2.2 to 3 GHz	dB	25	18	16
	fL = 3 to 8 GHz	dB	40	28	26
Isolation, L to I (min)	fL = 2.2 to 3 GHz	dB	20	13	11
	fL = 3 to 4 GHz	dB	30	18	16
	fL = 4 to 8 GHz	dB	42	30	28
Isolation, R to I (min)	fL = 3.4 to 7 GHz	dB	26		
1 dB Conversion Comp.	fL = +13 dBm	dBm	+7		
Input IP3	fR1 = 4.2 GHz at -10 dBm, fR2 = 4.21 at -10 dBm, fL = 2.7 GHz at +13 dBm	dBm	+16		
	fR1 = 6 GHz at -10 dBm, fR2 = 6.01 at -10 dBm, fL = 4.5 GHz at +13 dBm	dBm	+17		

1

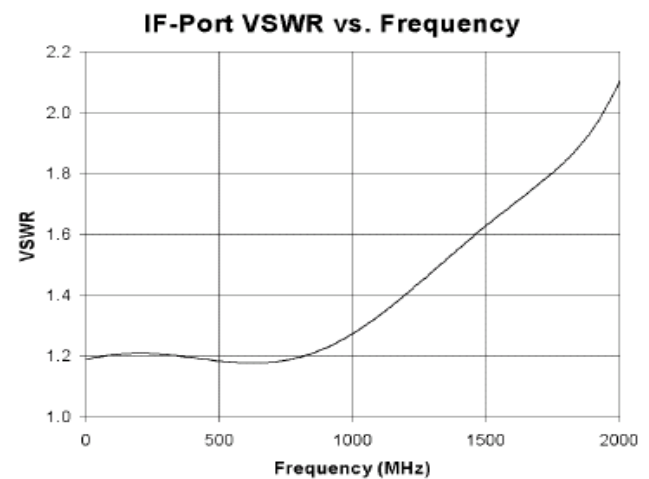
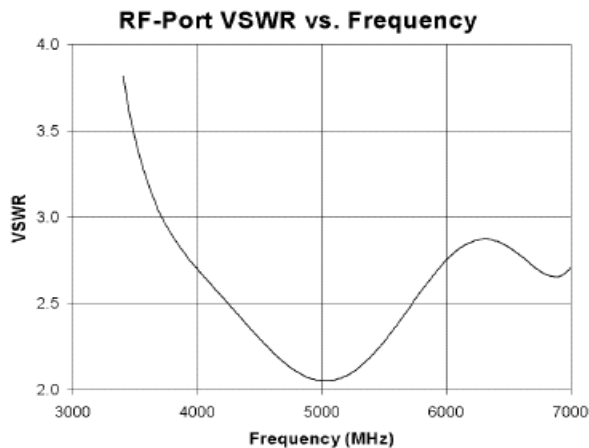
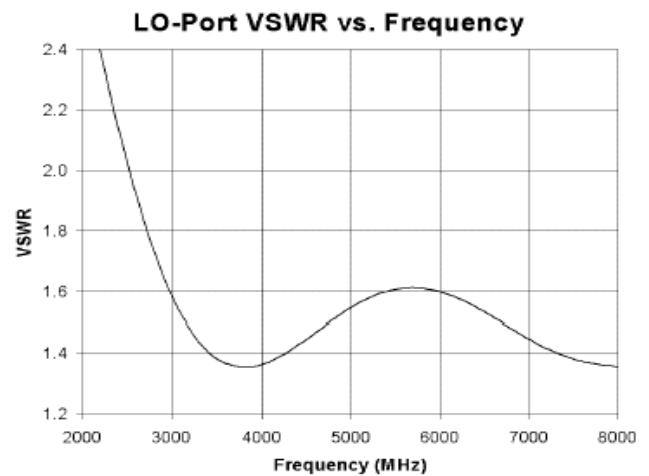
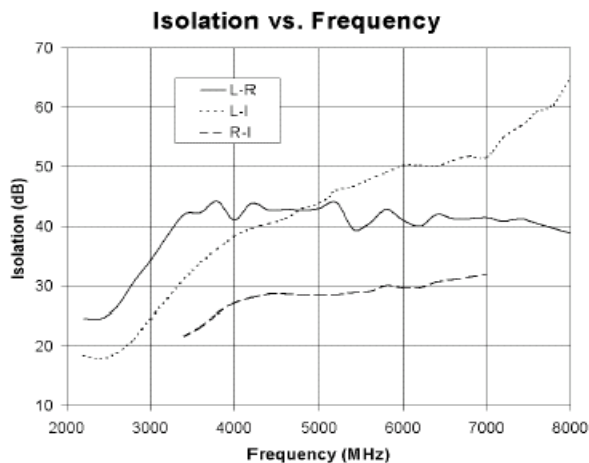
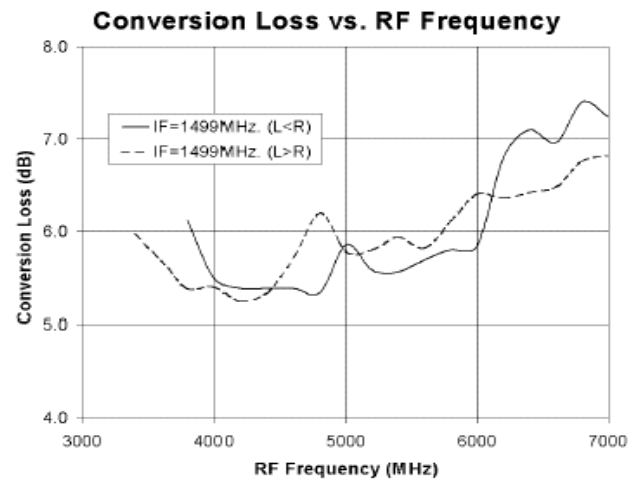
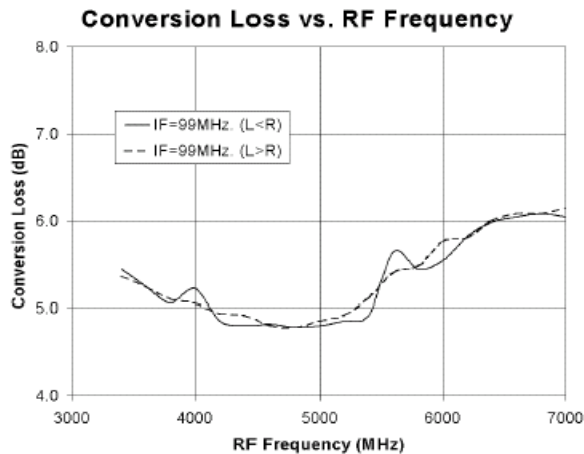
ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

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.

• **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.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

Typical Performance Curves



MC2313

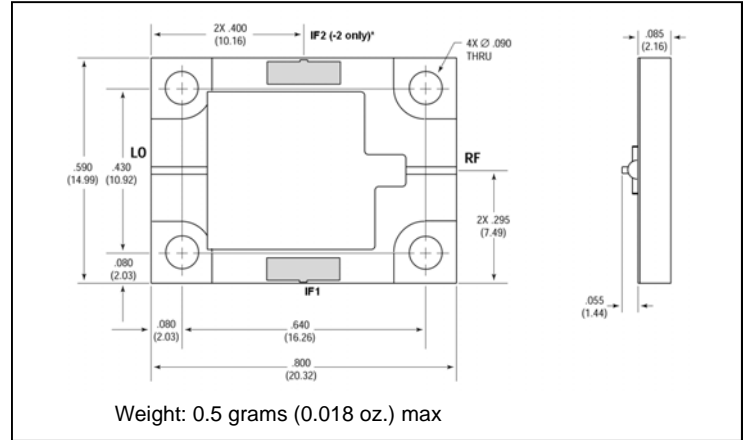
Open Carrier Double-Balanced Mixer For Microwave Telecommunications

Rev. V2

Absolute Maximum Ratings

Parameter	Absolute Maximum
Operating Temperature	-54°C to +85°C
Storage Temperature	-65°C to +100°C
Peak Input Power	+23 dBm max @ +25°C +20 dBm max @ +85°C
Peak Input Current	50 mA DC

Outline Drawing: Open Carrier *MC2313



*For the base model, only the IF1 port is connected.
For the “-2” model only the IF2 port is connected.

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