MC3013

Open Carrier Triple-Balanced Mixer For Microwave Telecommunications

Rev. V2

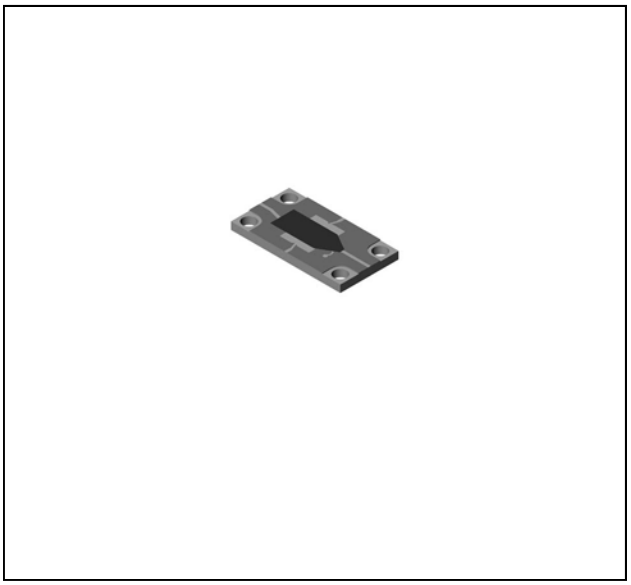
Features

- LO & RF: 2.0 TO 16.0 GHz
- IF: 1.0 TO 8.0 GHz
- LO DRIVE: +13 dBm (NOMINAL)
- MICROSTRIP INTERFACE

Description

The MC3013 is a triple balanced mixer, designed for use in military, commercial and test equipment applications. The design utilizes Schottky ring quad diodes and broadband soft dielectric baluns to attain excellent performance. 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
MC3013	Open Carrier
MC3013-2	Open Carrier

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

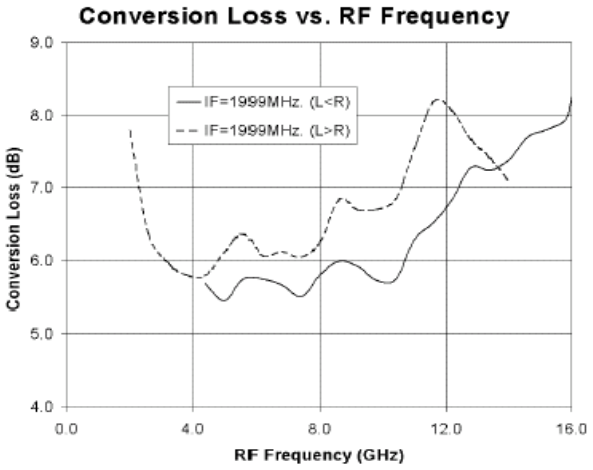
Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25ºC	-54º to +85ºC
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR =2 to 3 GHz , fL = 2 to 3 GHz , fI = 1 to 8 GHz fR =3 to 10 GHz , fL = 3 to 10 GHz , fI = 1 to 8 GHz fR =10 to 16 GHz , fL = 10 to 16 GHz , fI = 1 to 8 GHz	dB dB dB	10.0 7.0 8.0	11.5 9.0 11.0	12.0 9.5 11.5
Isolation, L to R (min)	fL = 2 to 12 GHz fL = 12 to 16 GHz	dB dB	20 17	15 12	13 10
Isolation, L to I (min)	fL = 2 to 4 GHz fL = 4 to 16 GHz	dB dB	21 25	15 18	13 16
Isolation, R to I (min)	fL = 2 to 16 GHz	dB	25		
1 dB Conversion Comp.	fL = +13 dBm	dBm	+7		
Input IP3	fR1 = 8 GHz at –3 dBm, fR2 = 8.01 GHz at –3 dBm, fL = 10 GHz at +13 dBm fR1 = 11 GHz at –3 dBm, fR2 = 11.01 GHz at –3 dBm, fL = 16 GHz at +13 dBm fR1 = 6 GHz at –3 dBm, fR2 = 6.01 GHz at –3 dBm, fL = 14 GHz at +13 dBm	dBm dBm dBm	+17 +17 +17		

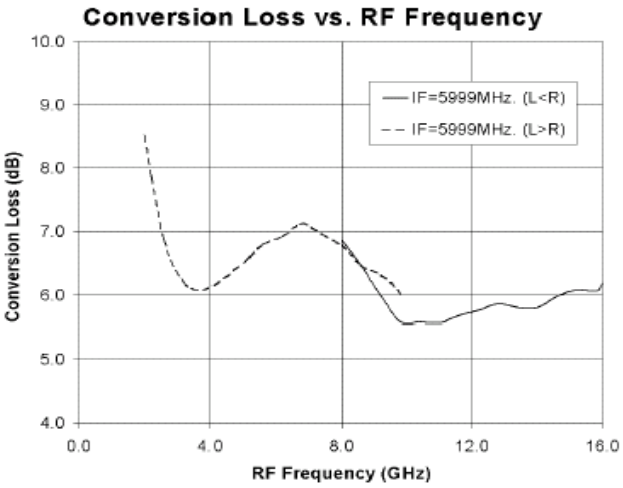
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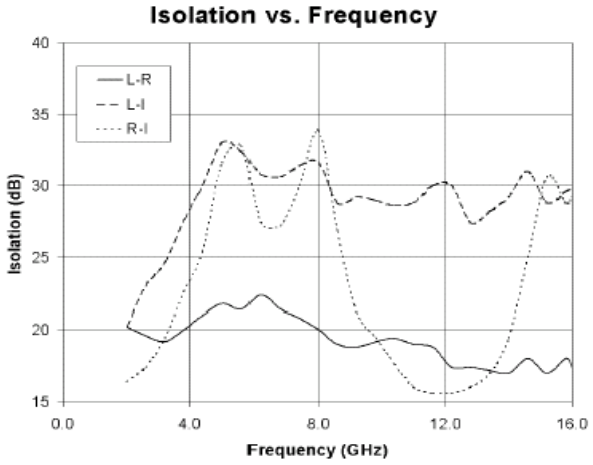
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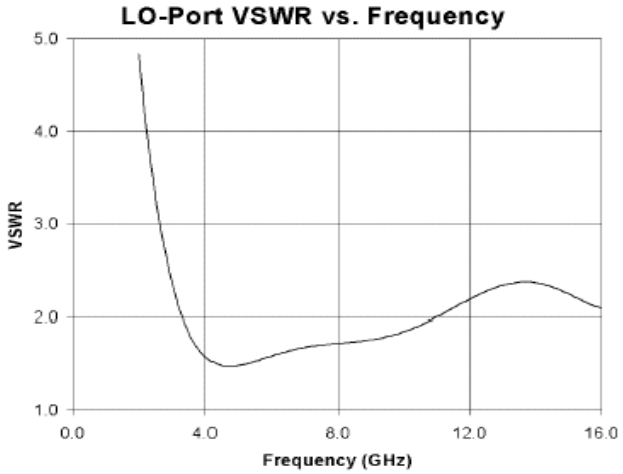
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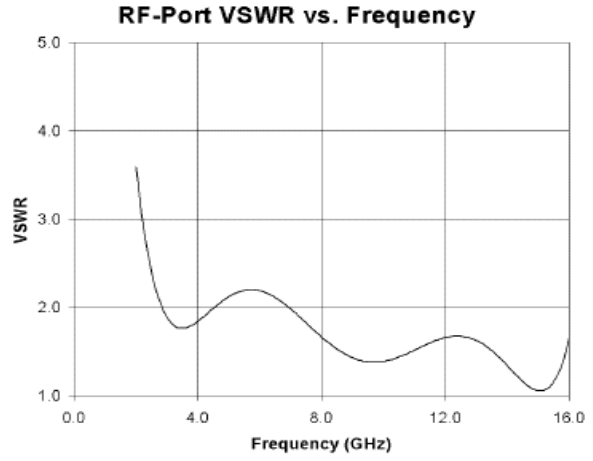
Typical Performance Curves

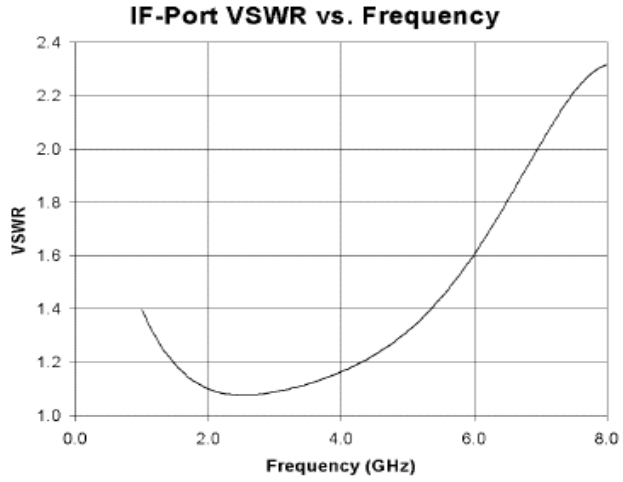












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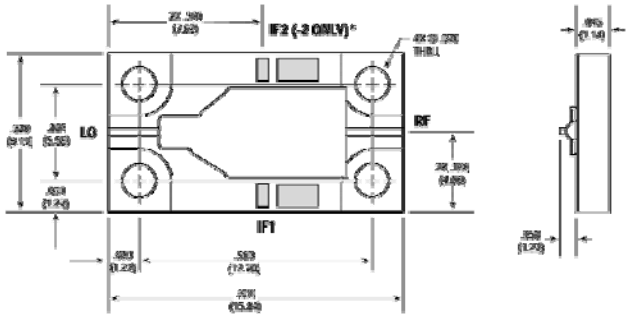
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Absolute Maximum Ratings

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

Outline Drawing: Open Carrier* MC3013



Weight: 0.2 grams (0.007 oz.) max

*For base model, only 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.

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