



Open Carrier Double-Balanced Mixer For Microwave Telecommunications

MC4113

Features

• LO & RF: 2.0 TO 10.0 GHz

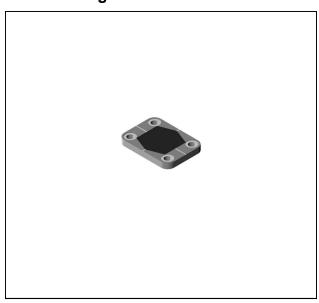
• IF: DC TO 2.0 GHz

LO DRIVE: +13 dBm (NOMINAL)MICROSTRIP INTERFACE

Description

The MC4113 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
MC4113	Open Carrier
MC4113-2	Open Carrier

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

Downwater	Parameter Test Conditions		Typical	Gua	ranteed
Parameter				+25°C	-54° to +85°C
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 4 to 8 GHz, fL = 4 to 8 GHz, fl = 0 to 1 GHz fR = 3 to 9 GHz, fL = 3 to 9 GHz, fl = 0 to 1.5 GHz fR = 2 to 10 GHz, fL = 2 to 10 GHz, fl = 0 to 2 GHz	dB dB dB	5.5 6.5 7.3	6.5 7.5 8.0	7.0 8.0 8.5
Isolation, L to R (min)	fR = 4 to 8 GHz fR = 3 to 9 GHz fR = 2 to 10 GHz	dB dB dB	35 23 23	28 17 17	25 15 15
Isolation, L to I (min)	fR = 4 to 8 GHz fR = 3 to 9 GHz fR = 2 to 10 GHz	dB dB dB	27 22 20	20 15 12	18 13 10
Isolation, R to I (min)	fL = 2 to 10 GHz	dB	30		
1 dB Conversion Comp.	fL = +13 dBm	dBm	+6		
Input IP3	fR1 = 3.9 GHz at -5 dBm, fR2 = 3.92 at -5 dBm, fL = 4.2 GHz at +13 dBm fR1 = 7.4 GHz at -5 dBm, fR2 = 7.42 at -5 dBm, fL = 6.4 GHz at +13 dBm	dBm dBm	+14 +17		

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[•] Europe Tel: 44.1908.574.200 / Fax: 44.1908.574.300

Asia/Pacific Tel: 81.44.844.8296 / Fax: 81.44.844.8298

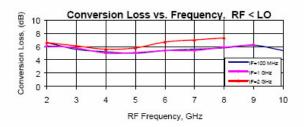


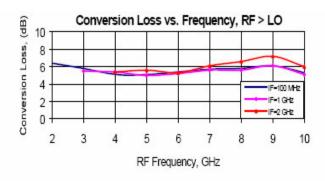


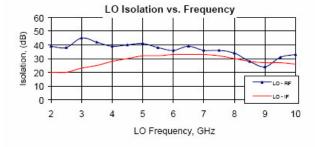
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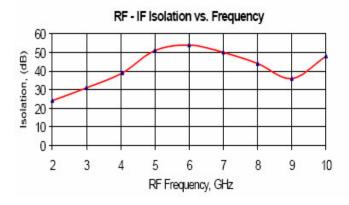
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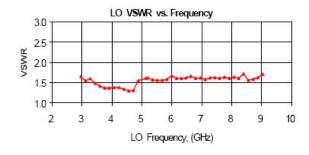
Typical Performance Curves

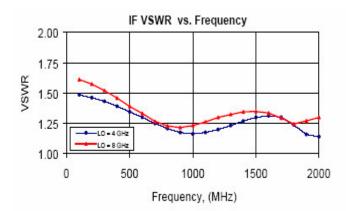


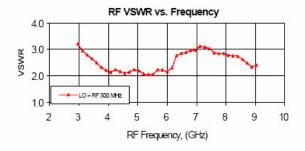












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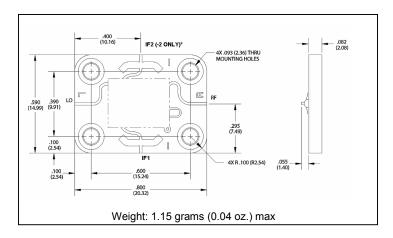
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Absolute Maximum Ratings

Parameter	Absolute Maximum	
Operating Temperature	-40°C to +85°C	
Storage Temperature	-65°C to +100°C	
Peak Input Power	+20 dBm max @ +25°C +17 dBm max @ +85°C	
Peak Input Current	50 mA DC	

Outline Drawing: Open Carrier * MC4113



*For the 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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