

Open Carrier Double-Balanced Mixer For Microwave Telecommunications

Rev. V2

Features

- LO 3.4 TO 4.7 GHz
- RF 3.4 TO 4.7 GHz
- IF DC TO 1.0 GHz
- LO DRIVE +10 dBm (NOMINAL)
- MICROSTRIP INTERFACE

Description

The MC211 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

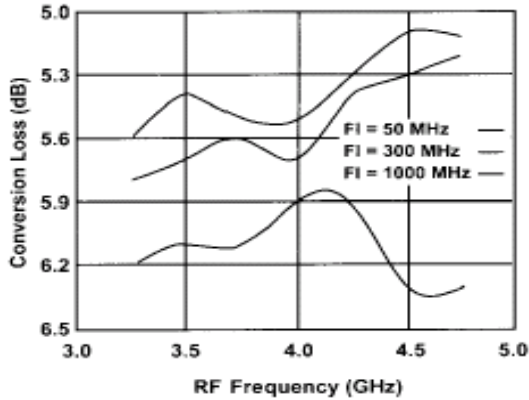
Part Number	Package
MC2110	Open Carrier

Electrical Specifications: $Z_0 = 50\Omega$ $L_o = +10$ dBm (Downconverter application only)

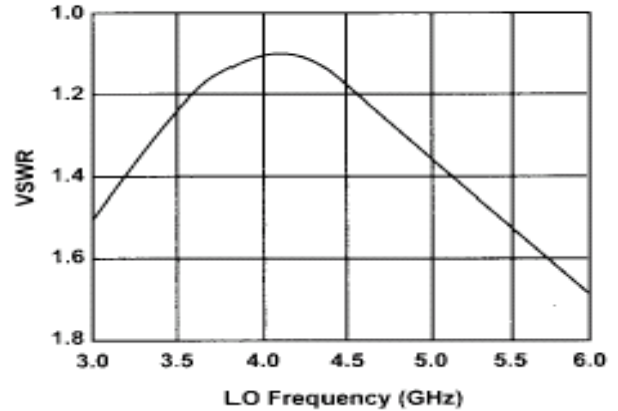
Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25°C	-54° to +85°C
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 3.4 to 4.7 GHz, fL = 3.4 to 4.7 GHz, fl = 0.01 to 0.3 GHz	dB	5.5	7.0	7.5
	fR = 3.4 to 4.7 GHz, fL = 3.4 to 4.7 GHz, fl = 0.01 to 1 GHz	dB	6.2	7.5	8.0
Isolation, L to R (min)	fL = 3.4 to 4.7 GHz	dB	42	25	23
Isolation, L to I (min)	fL = 3.4 to 4.7 GHz	dB	39	25	23
Isolation, R to I (min)	fL = 3.4 to 4.7 GHz	dB	25		
1 dB Conversion Comp.	fL = +10 dBm	dBm	+3		
Input IP3	fR1 = 4.2 GHz at -10 dBm, fR2 = 4.21 at -10 dBm, fL = 3.7 GHz at +10 dBm	dBm	+12		

Typical Performance Curves

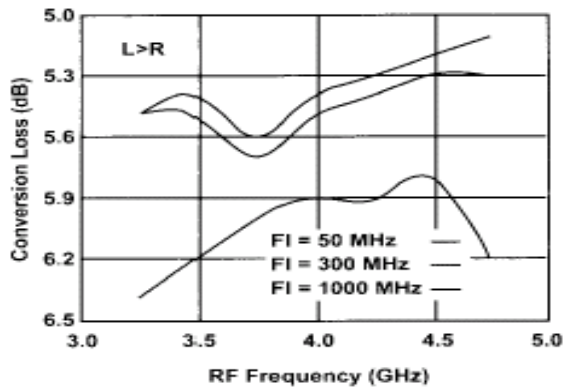
Conversion Loss vs. Frequency



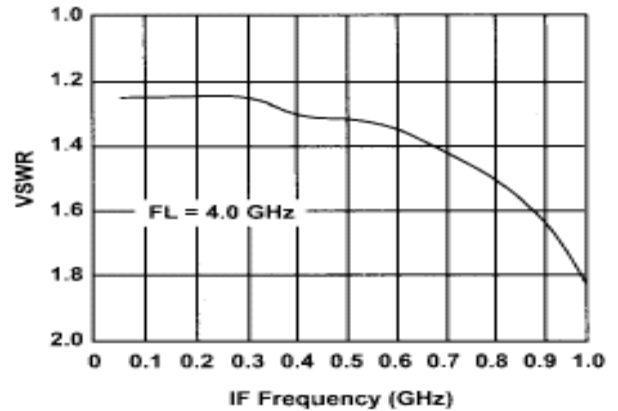
L-Port VSWR vs. Frequency



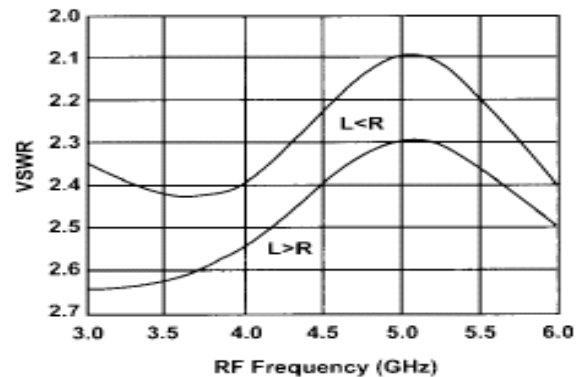
Conversion Loss vs. Frequency



I-Port VSWR vs. Frequency



R-Port VSWR vs. Frequency



MC2110



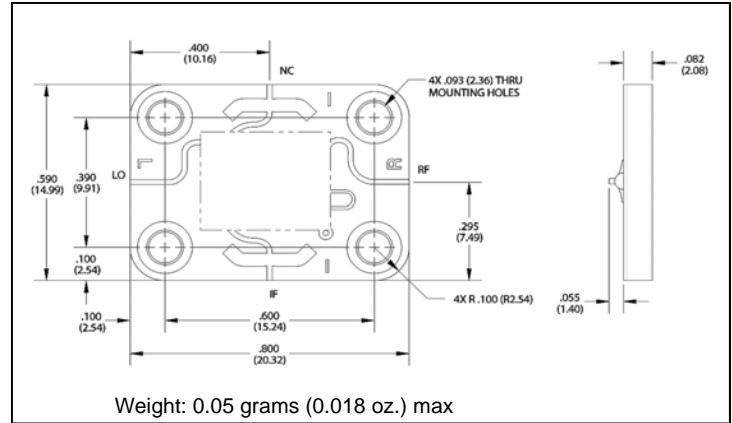
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Absolute Maximum Ratings

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 *MC2110



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