tyco Electronics

M/A-COM

Open Carrier Double-Balanced Mixer For Microwave Telecommunications

MC4520
V1

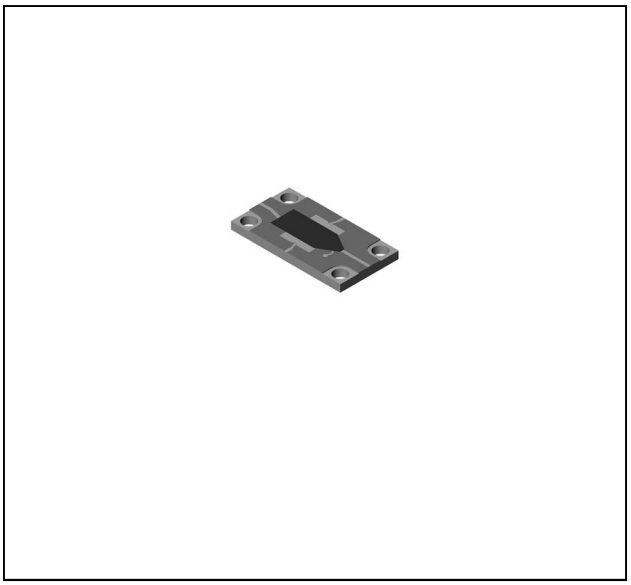
Features

- LO 4.0 to 20.0 Ghz
- RF 4.0 to 20.0 GHz
- IF DC to 4.0 GHz
- LO Drive +20 dBm (nominal)
- Microstrip Interface

Description

The MC4520 is a double balanced mixer, designed for military, commercial and test equipment applications. The design utilizes Schottky ring quad diodes and broadband soft dielectric balans 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-M-28837, consult factory.

Product Image



Ordering Information

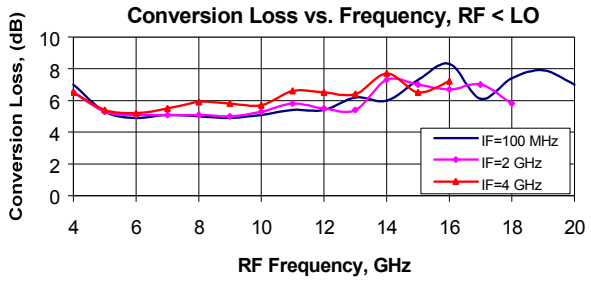
Part Number	Package
MC4520	Open Carrier
MC4520-2	Open Carrier

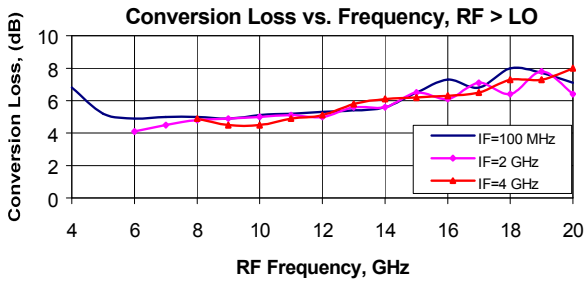
Electrical Specifications: $Z_0 = 50\Omega$ Lo = +20 dBm (Downconverter application only)

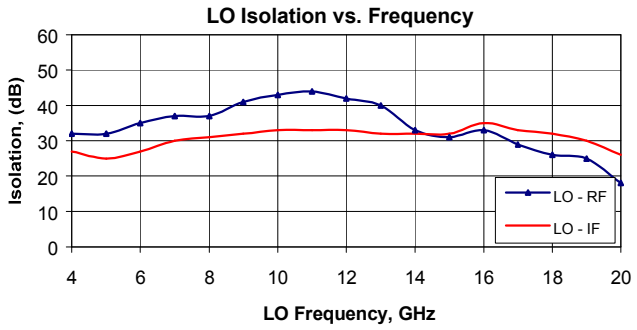
Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25ºC	-40º to +85ºC
SSB Conversion Loss (max)	fR =6.0 to 18.0 GHz , fL = 6.0 to 18.0 GHz , fI = DC to 2.0 GHz fR = 6.0 to 18.0 GHz, fL = 6.0 to 18.0 GHz, fI = DC to 4.0 GHz fR = 4.0 to 20.0 GHz, fL = 4.0 to 20.0 GHz, fI = DC to 4.0 GHz	dB	6.5 7.0 7.5	8.0 8.5 9.0	8.5 9.0 9.5
SSB Noise Figure (max)	Within 1 dB of conversion loss	dB	____	____	____
Isolation, L to R (min)	fL = 8.0 to 16.0 GHz fL = 6.0 to 18.0 GHz fL = 4.0 to 20.0 GHz	dB	35 30 25	25 20 12	23 18 10
Isolation, L to I (min)	fL = 8.0 to 16.0 GHz fL = 6.0 to 18.0 GHz fL = 4.0 to 20.0 GHz	dB	32 30 28	25 20 12	23 18 10
Isolation, R to I (min)	fR = 4.0 to 20.0 GHz	dB	35		
1 dB Conversion Comp.	fL = +20 dBm	dBm	+13		
Input IP3	fR1 = 8.4 GHz at –5 dBm, fR2 = 8.42 GHz at –5 dBm, fL = 8.6 GHz at +20 dBm fR1 = 14.4 GHz at –5 dBm, fR2 = 14.42 GHz at –5 dBm, fL = 15.4 GHz at +20 dBm	dBm	+20 +18		

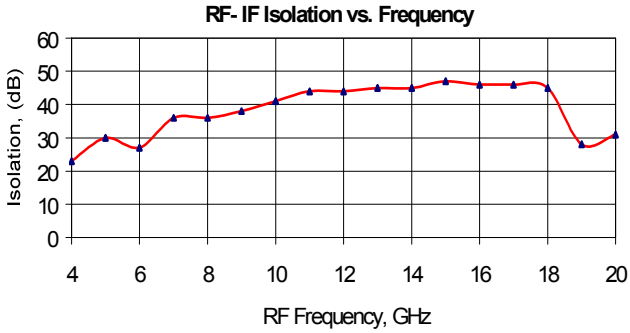
- **North America** Tel: 800.366.2266 / Fax: 978.366.2266
- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
- **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

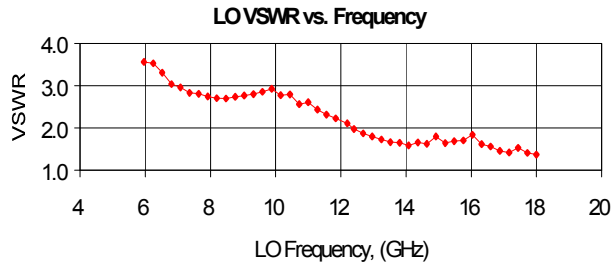
Typical Performance Curves

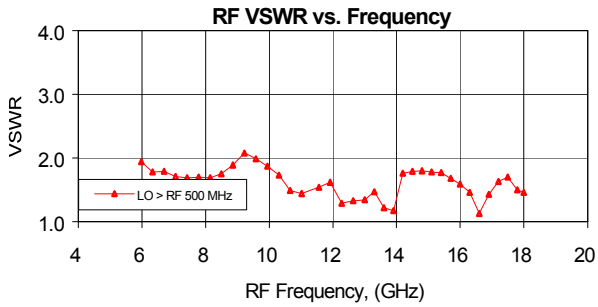












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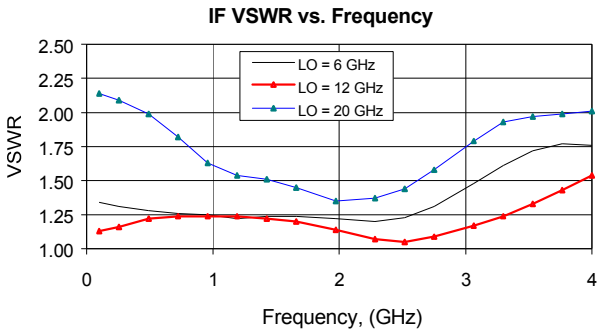
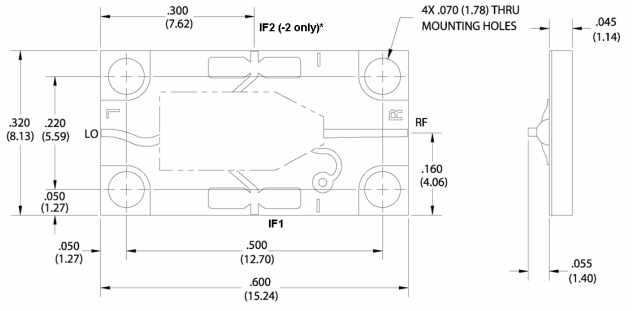
Absolute Maximum Ratings

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



Outline Drawing: Open Carrier * MC4520



Weight: 0.2 grams (0.007 oz.) max

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

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

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