MDC-164



Termination-Insensitive Mixer, 0.5 - 9 GHz

Rev. V3

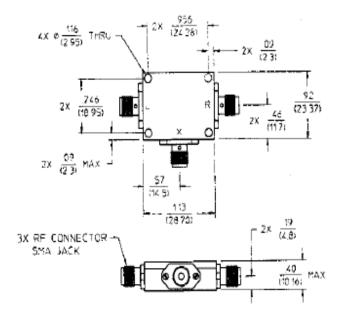
Features

- Intermodulation Ratio Insensitive to IF Ports Mismatches
- Conversion Loss: 6.5 dB Typical Midband
- Maximum Input Power: 350 mW max. @ 25°C, Derated 3.5 mW/°C
- Low Power: +24 dBm Max.
- MIL-STD-883 Screening Available

Description

The unique design of the termination insensitive mixer (TIM) enables it to apply high reverse voltage to diodes during their "off" phase, in the LO cycle. This allows for higher power level performance with minimum distortion. In addition the TIM has internal loads that provide a good match and also absorb mixer generated LO frequency terms. Combined, these features give the mixer its insensitivity to external mismatches, plus superior VSWR.

C-3



Octebbook in Digital in the Unless Otterwise Nated IXXX = +0.010 (XX = ±0.25) XX - 10.02 (X m 10.5) WEIGHT (APPROXI 12 GUNCES 34 GRAMS



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Electrical Specifications¹: $T_A = -55$ °C to +85°C

Parameter	Test Conditions	Frequency	Units	Min	Тур	Max
Frequency Range	RF, LO Ports IF Port	0.5 - 9 10 - 2000	GHz MHz	_	_	_
Conversion Loss ²		1 - 7 GHz 0.5 - 1 GHz 7 - 9 GHz	dB dB dB			8.5 10.0 11.0
Isolation	LO to RF	1.5 - 7 GHz 0.5 - 9 GHz	dB dB	17 13	_	_
	LO to IF	1.5 - 7 GHz 0.5 - 9 GHz	dB dB	20 17		_
	RF to IF	0.5 - 9 GHz	dB	17	_	_
RF Input	1 dB Compression 1 dB Desensitization		dBm dBm	_	+8 +6	_
SSB Noise Figure	Within 1 dB of Conversion Loss Max.	_	_	_	_	_
3rd Order Input Intercept		2.0 GHz 8.0 GHz	dBm dBm	_	+15 +17	_
3rd Order Intercept Degration	@ IF Termination VSWR 3:1	_	dB	_	1.5	_

^{1.} All specifications apply when operated at +13 dBm available LO power with 50 ohm source and load impedance.

This product contains elements protected by United States Patent Number 4,224,572

typical. Mechanical outline has been fixed. Engineering samples

Commitment to produce in volume is not gua

^{2.} For IF frequencies of 10 - 500 MHz and an RF of -10 dBm or lower.

^{3.} Independent of sum frequency match.

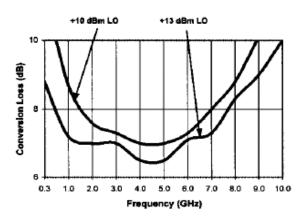


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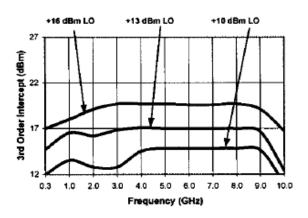
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Typical Performance Curves

Conversion Loss

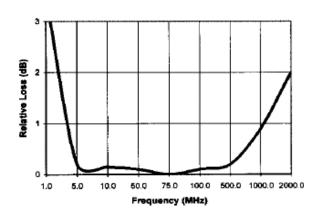


3rd Order Intercept

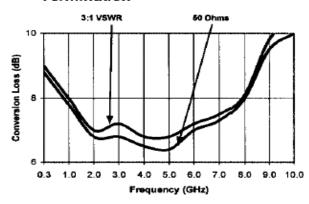


IF Port Response

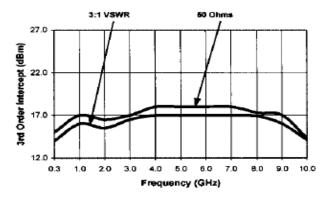
Commitment to produce in volume is not gui



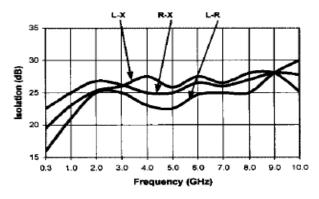
Conversion Loss vs. IF Port Termination 3



3rd Order Intercept vs. IF Port Termination ³



Isolation



Ordering Information

Part Number	Package		
MDC-164 SMA	C-3		

- 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.
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 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 restricted may be available.
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 Visit www.macomtech.com for additional data sheets and product information.