M83 / M83C



Triple-Balanced Mixer

Rev. V3

Features

- LO 2 TO 18 GHz
- RF 1 TO 18 GHz
- IF 0.03 TO 5 GHz
- LO DRIVE: +13 dBm (NOMINAL)
- WIDE BANDWIDTH

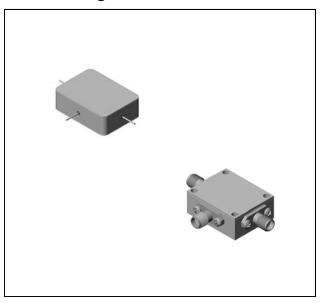
Description

M83 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 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.

Ordering Information

Part Number	Package		
M83	Minpac		
M83C	SMA Connectorized		

Product Image



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

Parameter	Test Conditions	Units	Typical	Guaranteed	
Farameter				+25°C	-54º to +85ºC
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 5 to 13 GHz, fL = 5 to 13 GHz, fI = 0.03 to 2 GHz fR = 2 to 16 GHz, fL = 2 to 18 GHz, fI = 0.03 to 4 GHz fR = 1 to 18 GHz, fL = 2 to 18 GHz, fI = 0.03 to 5 GHz	dB dB dB	6.5 7.5 8.5	8.0 9.0 10.0	8.5 9.5 10.5
Isolation, L to R (min)	fL = 2 to 3 GHz fL = 3 to 18 GHz	dB dB	20 30	16 18	14 16
Isolation, L to I (min)	fL = 2 to 18 GHz	dB	30	20	18
1 dB Conversion Comp.	fL = +13 dBm	dBm	+6		
Input IP3	fR1 = 6 GHz at -3 dBm, fR2 = 3.01 GHz at -3 dBm, fL = 8 GHz at +13 dBm fR1 = 15 GHz at -3 dBm, fR2 = 15.01 GHz at -3 dBm, fL =18 GHz at +13 dBm	dBm dBm	+18 +19		

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India Tel: +91.80.4155721
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 Visit www.macomtech.com for additional data sheets and product information.

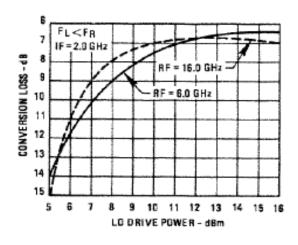


Triple-Balanced Mixer

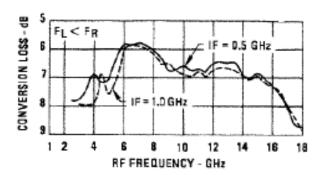
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Typical Performance Curves

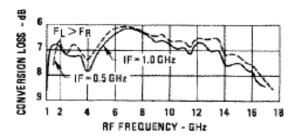
Conversion Loss vs. LO Drive Power

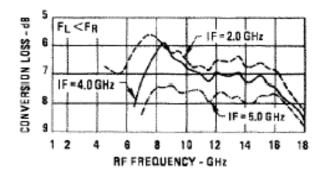


Conversion Loss



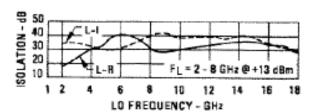
Conversion Loss





CONVERSION LOSS - dB IF = 2.0 GHz =4.0 GHz IF = 5.0 GHz t 2 10 18 18 12 RF FREQUENCY - GHz

Isolation



typical. Mechanical outline has been fixed. Engineering samples

Commitment to produce in volume is not guit

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are • North America Tel: 800.366.2266 • Europe Tel: +353.21.244.6400 • India Tel: +91.80.4155721

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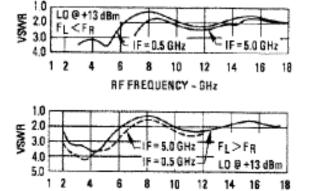
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Absolute Maximum Ratings

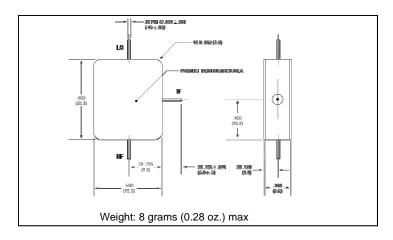
Parameter	Absolute Maximum		
Operating Temperature	-54°C to +100°C		
Storage Temperature	-65°C to +100°C		
Peak Input Power	+26 dBm max @ +25°C +23 dBm max @ +100°C		
Peak Input Current	100 mA DC		

R-Port VSWR

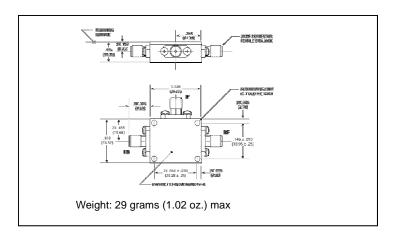


RF FREQUENCY - GHz

Outline Drawing: Minpac *

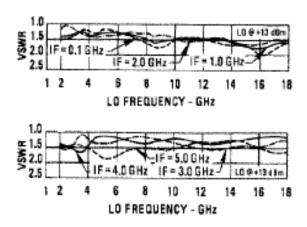


Outline Drawing: SMA Connectorized *



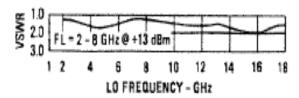
I-Port VSWR

Commitment to produce in volume is not d



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

L-Port VSWR



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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