M83 / M83C

Triple-Balanced Mixer



Rev. V4

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

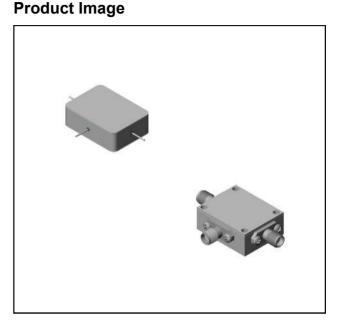
Part Number	Package	
M83	Minpac	
M83C	SMA Connectorized	

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

Deremeter	Toot Conditions	Units	Typical	Guaranteed	
Parameter	Parameter Test Conditions Uni			+25⁰C	-54º to +85ºC
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 5 to 13 GHz, fL = 5 to 13 GHz, fl = 0.03 to 2 GHz fR = 2 to 16 GHz, fL = 2 to 18 GHz, fl = 0.03 to 4 GHz fR = 1 to 18 GHz, fL = 2 to 18 GHz, fl = 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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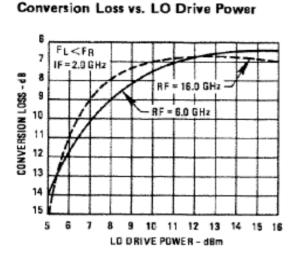
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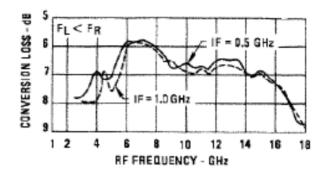


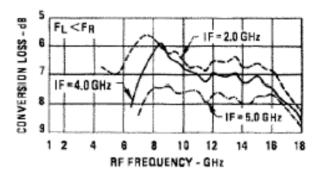
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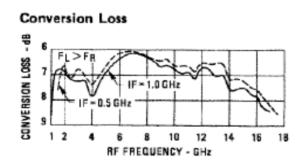
Typical Performance Curves

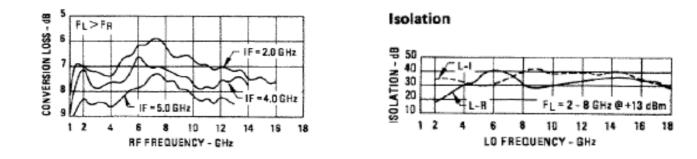


Conversion Loss









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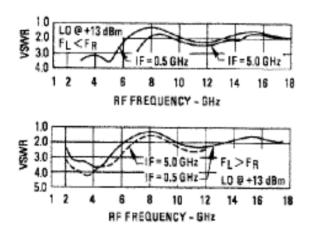
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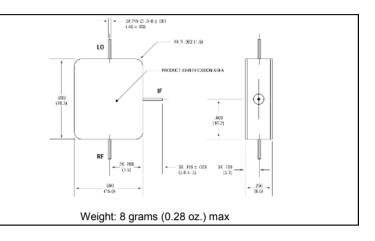
Absolute Maximum Ratings

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	

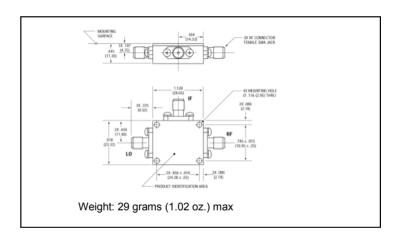
R-Port VSWR



Outline Drawing: Minpac *

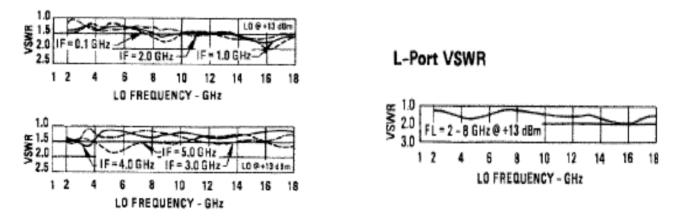


Outline Drawing: SMA Connectorized *



I-Port VSWR

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



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