M89 / M89C

Triple-Balanced Mixer



Rev. V3

Features

- LO 2 TO 18 GHz
- RF 2 TO 18 GHz
- IF 1 TO 8 GHz
- LO DRIVE: +10 dBm (NOMINAL)
- WIDE BANDWIDTH

Description

M89 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

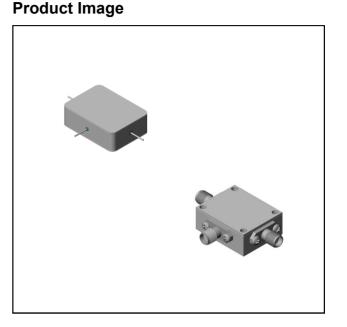
Part Number	Package	
M89	Minpac	
M89C	SMA Connectorized	

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

Deremeter	Test Canditions	Unite	Typical	Guaranteed	
Parameter Test Conditions		Units		+25ºC	-54° to +85°C
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 2 to 10 GHz, fL = 2 to 18 GHz, fl = 1 to 8 GHz fR = 10 to 18 GHz, fL = 2 to 18 GHz, fl = 2 to 8 GHz	dB dB	7.5 8.0	10.0 10.5	10.5 11.0
Isolation, L to R (min)	fL = 2 to 18 GHz	dB	28	15	13
Isolation, L to I (min)	fL = 2 to 18 GHz	dB	32	16	14
1 dB Conversion Comp.	fL = +10 dBm	dBm	+4		
Input IP3	fR1 = 6 GHz at –6 dBm, fR2 = 6.01 GHz at –6 dBm, fL = 10 GHz at +10 dBm fR1 = 15 GHz at –6 dBm, fR2 = 15.01 GHz at –6 dBm, fL =18 GHz at +10 dBm	dBm dBm	+14 +18.5		

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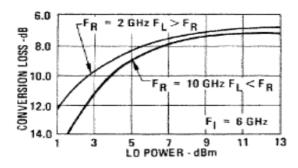
Triple-Balanced Mixer

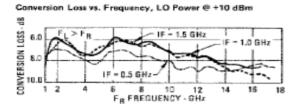


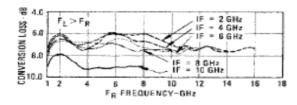
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Typical Performance Curves

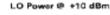
Conversion Loss vs. LO Drive Power

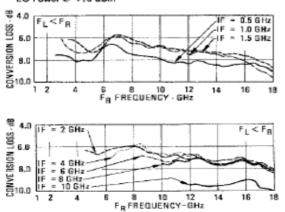




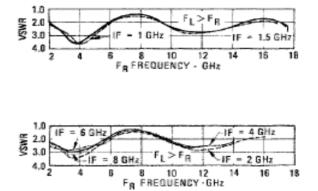


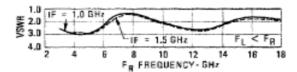
Conversion Loss vs. Frequency and Temperature,

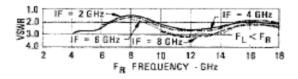




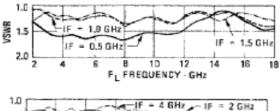


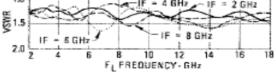






I-Port VSWR vs. Frequency, LO Power @ +10 dBm





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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	mA DC	

Isolation vs. Frequency

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8 10

SOLATION -

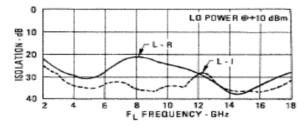
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- 2

F1 = 2 GH2

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6



 $F_L > E$

8 10 12 FR FREQUENCY - GHz

R - I ISOLATION LD POWER + 10 dBm

RF POWER -5 dBm

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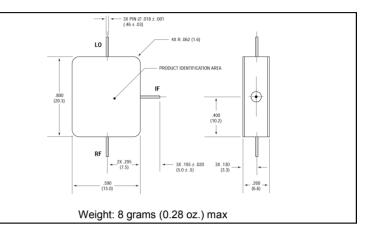
16

18

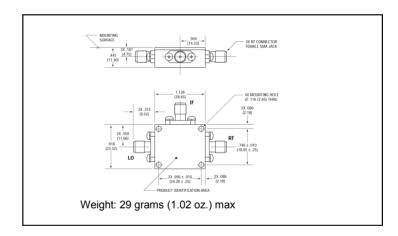
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Outline Drawing: Minpac *

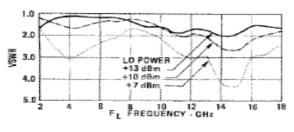


Outline Drawing: SMA Connectorized *



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

L-Port VSWR vs. Frequency



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