M93 / M93C

Triple-Balanced Mixer



Rev. V3

Features

- LO 2 TO 18 GHz
- RF 2 TO 18 GHz
- IF 0.03 TO 4 GHz
- LO DRIVE: +10 dBm (NOMINAL)
- WIDE BANDWIDTH

Description

M93 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

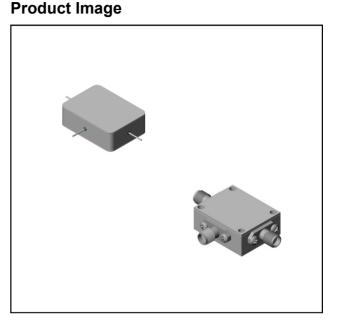
Part Number	Package	
M93	Minpac	
M93C	SMA Connectorized	

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

Desemptor	Test Conditions	Units	Typical	Guaranteed	
Parameter	Parameter Test Conditions			+25°C	-54° to +85°C
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 2 to 10 GHz, fL = 2 to 14 GHz, fl = 0.03 to 4 GHz fR = 10 to 18 GHz, fL = 6 to 18 GHz, fl = 0.03 to 4 GHz	dB dB	7.5 8.0	10.0 11.0	10.5 11.5
Isolation, L to R (min)	fL = 2 to 18 GHz	dB	29	15	13
Isolation, L to I (min)	fL = 2 to 18 GHz	dB	34	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 = 8 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		

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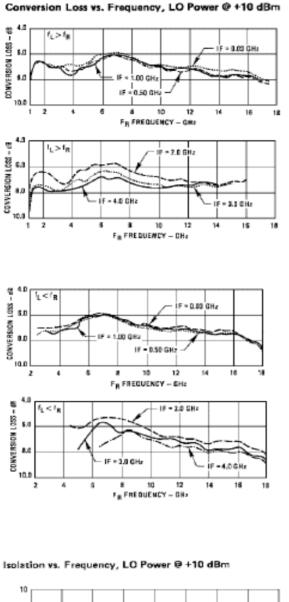
M93 / M93C

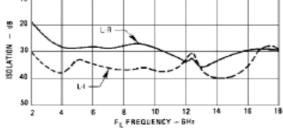
Triple-Balanced Mixer

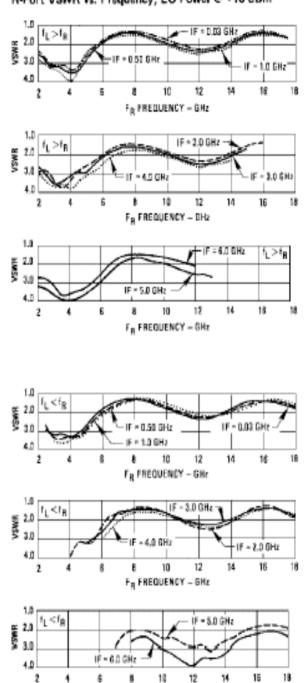


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Typical Performance Curves







FR PREQUENCY - GHz

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

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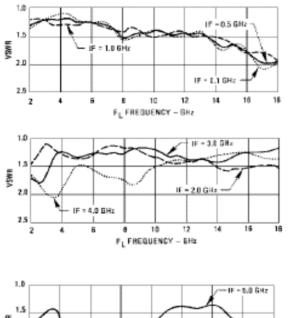
Triple-Balanced Mixer

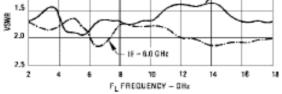
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Absolute Maximum Ratings

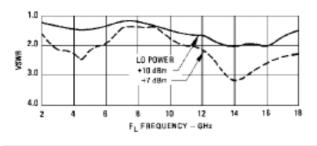
Parameter	Absolute Maximum	
Operating Temperature	-54°C to +100°C	
Storage Temperature	-65°C to +100°C	
Peak Input Power	+26 dBm max @ +25°C +23 dBm max @ +100°C	
Peak Input Current	mA DC	

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



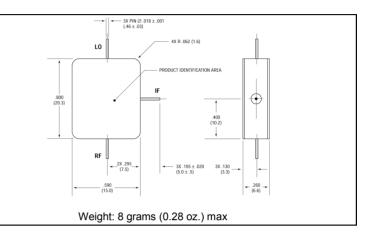


L-Port VSWR vs. Frequency

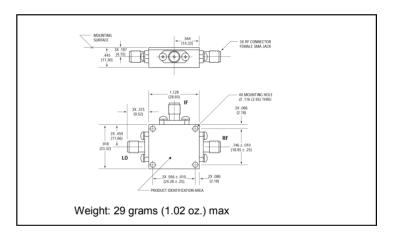


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Outline Drawing: Minpac *



Outline Drawing: SMA Connectorized *



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

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