M50 / M50C

Triple-Balanced Mixer



Rev. V2

Features

- LO 2.0 TO 26.0 GHz
- RF 2.0 TO 26.0 GHz
- IF 1.0 TO 15.0 GHz
- LO DRIVE +10 dBm (nominal)
- HIGH COMPRESSION POINT
- VERY WIDE BANDWIDTH

Description

The M50 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 and welded 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
M50	Minpac
M50C	SMA Connectorized

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

Parameter	Test Conditions		Typical	al Guaranteed	
Parameter				+25⁰C	-54º to +85ºC *
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 2.5 to 18 GHz, fL =2 to 18 GHz, fl =2 to 10 GHz fR = 2 to 18 GHz, fL =2 to 26 GHz, fl =2 to 12 GHz fR = 2 to 26 GHz, fL =2 to 26 GHz, fl =2 to 15 GHz	dB dB dB	7.5 8.0 9.0	9.5 10.5 11.5	10.0 11.0 12.0
Isolation, L to R (min) $fL = 2 \text{ to } 3 \text{ GHz}$ fL = 3 to 26 GHz		dB dB	30 22	15 20	13 18
Isolation, L to I (min) fL = 2 to 7 GHz fL = 7 to 26 GHz		dB dB	30 22	15 20	13 20
1 dB Conversion Comp.	fL @ +10 dBm	dBm	+5		
Input IP3	fR1 =5 GHz @ -6 dBm, fR2 =5.01 GHz @ -6 dBm, fL=8 GHz @ 10 dBm fR1= 25 GHz @ -6 dBm, fR2 = 25.01 GHz @ -6 dBm, fL = 15 GHz @ 10 dBm	dBm dBm	+15 +15		

* The M50C specification limits apply at 0°C to +50°C.

typical. Mechanical outline has been fixed. Engineering samples

Commitment to produce in volume is not gu

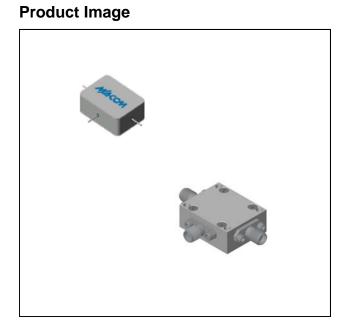
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Solutions has under development. Performance is based on engineering tests. Specifications are

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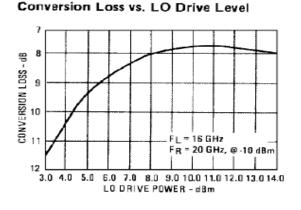
M50 / M50C

Triple-Balanced Mixer

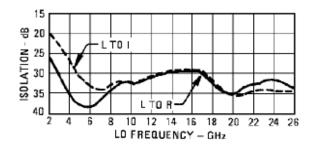
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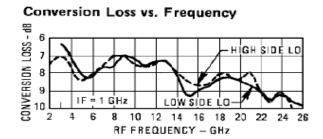
Technology Solutions

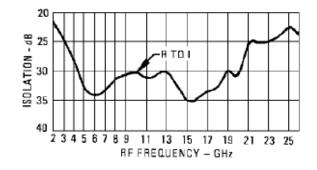
Typical Performance Curves

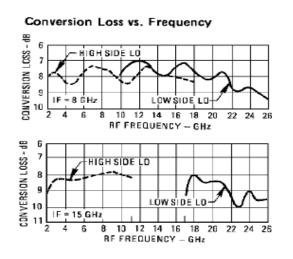


Isolation vs. Frequency



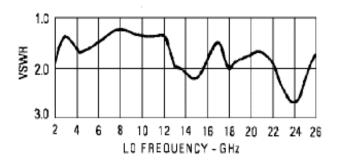






L-Port VSWR

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Triple-Balanced Mixer

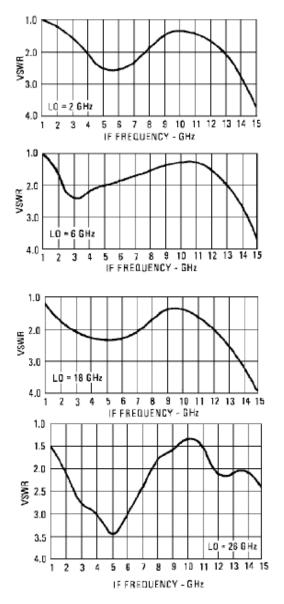


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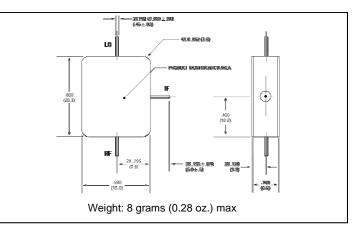
Absolute Maximum Ratings

Parameter	Absolute Maximum			
Operating Temperature	-54ºC to +100ºC			
Storage Temperature	-65°C to +100°C			
Peak Input Power	+26 dBm max @ +25°C +22 dBm max @ +100°C			
Peak Input Current	mA DC			

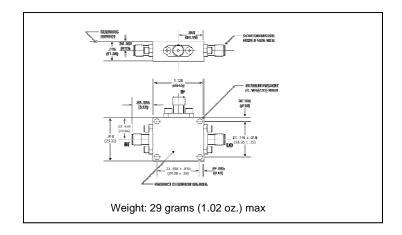
I-Port VSWR



Outline Drawing: Minpac *

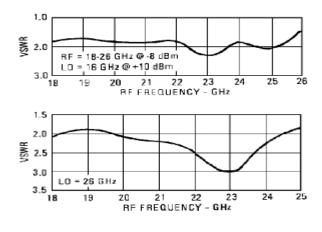


Outline Drawing: SMA Connectorized *



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

R-Port VSWR



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3

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