tyco Electronics

M/A-COM

Triple-Balanced Mixer

M50A/M50AC
V2

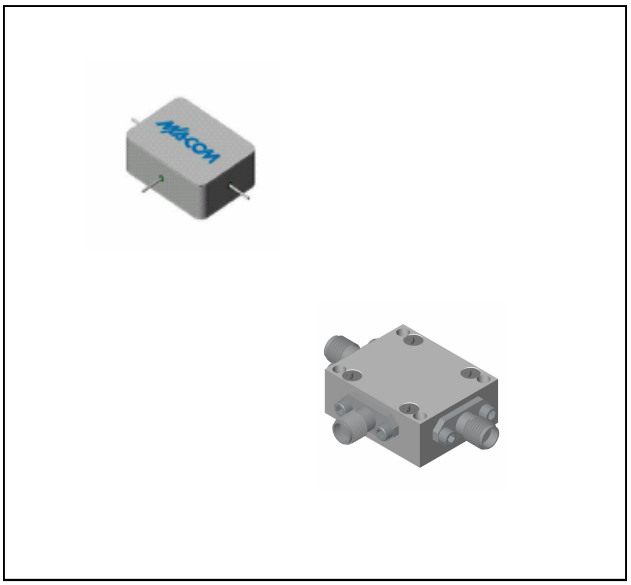
Features

- LO 2 TO 26 GHz
- RF 2 TO 18 GHz
- IF 1 TO 12 GHz
- LO DRIVE: +10 dBm (NOMINAL)
- HIGH COMPRESSION POINT

Description

The M50A 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.

Product Image



Ordering Information

Part Number	Package
M50A	Minpac
M50AC	SMA Connectorized

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

Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25ºC	-54º to +85ºC *
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 2.5 to 18 GHz, fL =2 to 18 GHz, fI =1 to 10 GHz fR = 2 to 18 GHz, fL =2 to 26 GHz, fI =1 to 12 GHz	dB dB	7.5 8.0	9.5 10.5	10.0 11.0
Isolation, L to R (min)	fL = 2 to 3 GHz fL = 3 to 26 GHz	dB dB	22 30	15 20	
Isolation, L to I (min)	fL = 7 to 26 GHz fL = 2 to 7 GHz	dB dB	30 22	20 15	
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= 15 GHz @ -6 dBm, fR2 = 15.01 GHz @ -6 dBm, fL = 25 GHz @ 10 dBm	dBm dBm	+15 +12		

* The M50AC specification limits apply at 0ºC to +50ºC.

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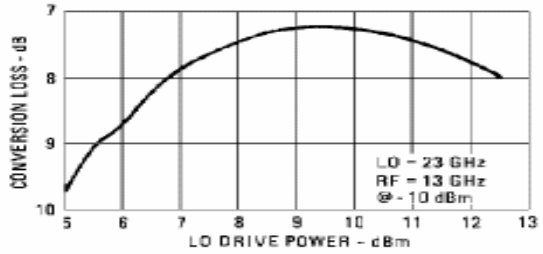
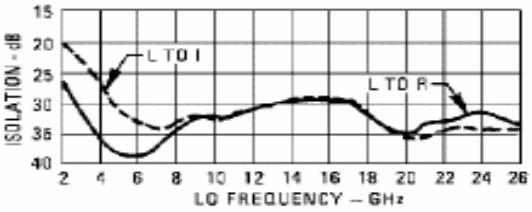
Typical Performance Curves

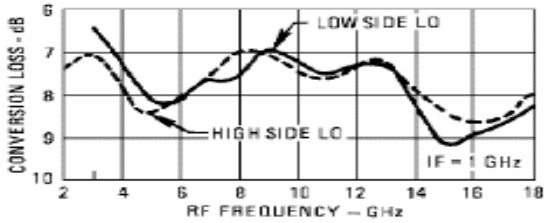
Drive Level

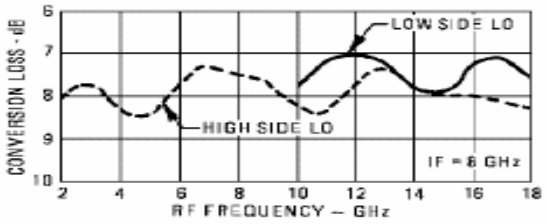


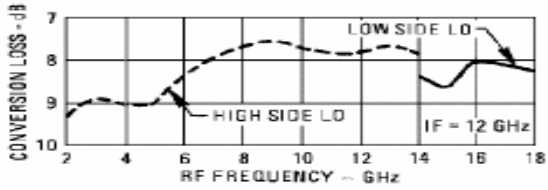
Isolation vs. Frequency

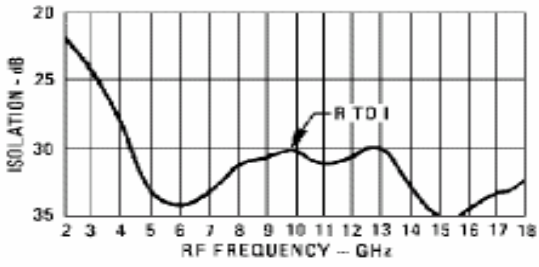


Conversion Loss vs. Frequency LO @ +10 dBm

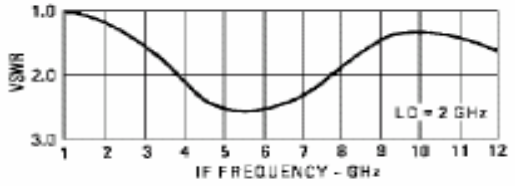


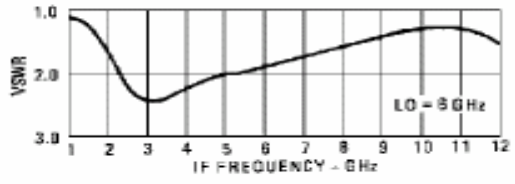


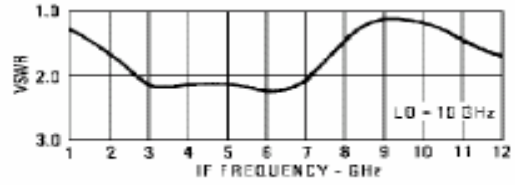




I-Port VSWR vs. Frequency, LO @ +10 dBm







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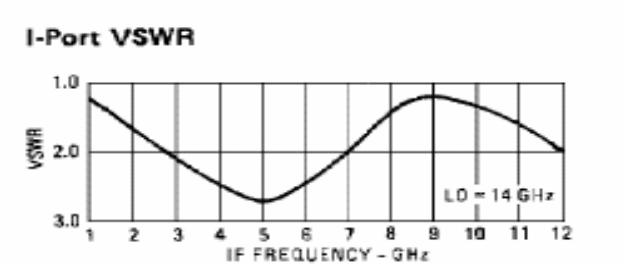
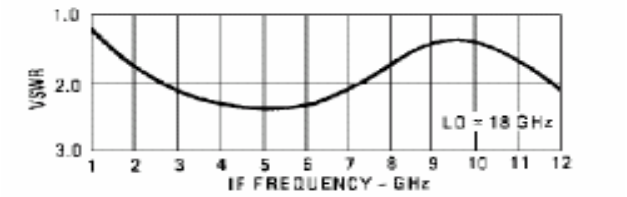
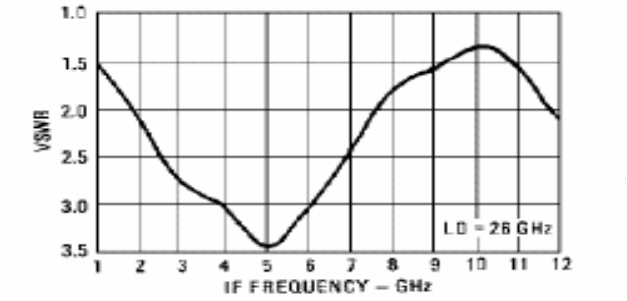
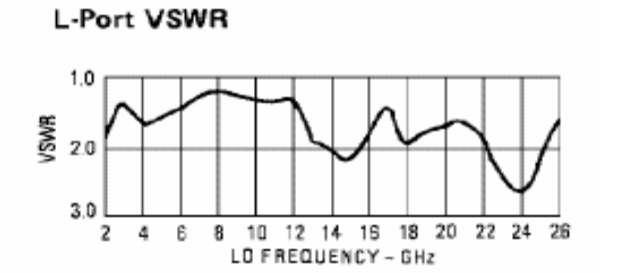
Absolute Maximum Ratings

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

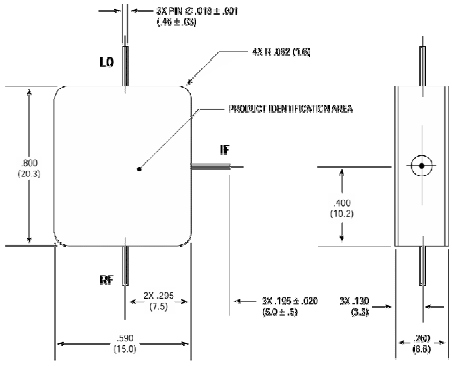






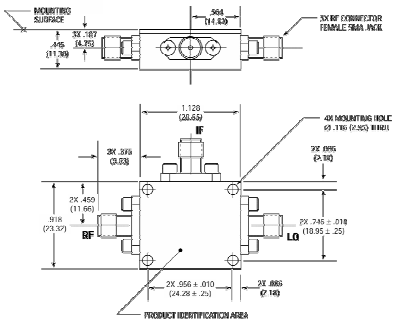


Outline Drawing: Minpac *



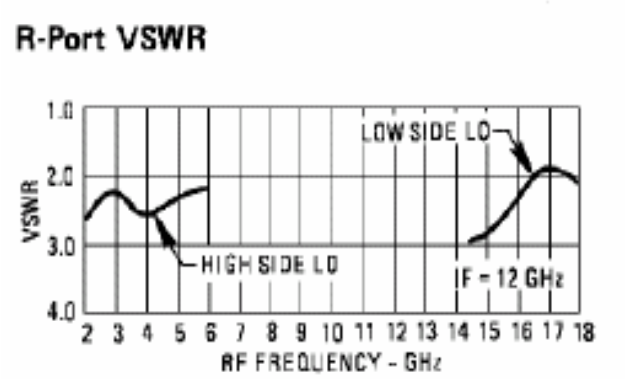
Weight: 8 grams (0.28 oz.) max

Outline Drawing: SMA Connectorized *



Weight: 29 grams (1.02 oz.) max

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



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