

Double-Balanced Mixer

Rev. V3

Features

- LO 10 TO 1600 MHz
- RF 10 TO 1500 MHz
- IF 0 TO 600 MHz
- LO DRIVE: +20 dBm (NOMINAL)
- HIGH INTERCEPT POINT: +30 dBm TYP. (UPCONV.)
 +24 dBm TYP. (DOWNCONV.)

Description

The M9H is a double balanced mixer, designed for use in military, commercial, and test equipment applications. The design utilizes Schottky ring quad diodes and broadband ferrite baluns to attain excellent performance. This mixer can also be used as a phase detector and/or bi-phase modulator since the IF port is DC coupled to the diodes. Environmental screening is available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.

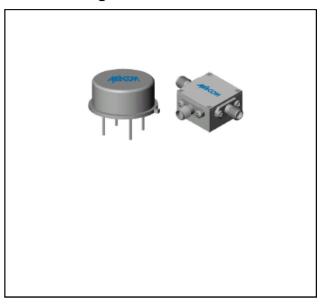
Package

Ordering Information

Part Number

М9Н		TO-8		
М9НС		SMA Connectorized		
Electrical Specifi	cati	ons: $Z_0 = 50\Omega$ Lo =		
Electrical Specifi	cati	ons: $Z_0 = 50\Omega$ Lo =		

Product Image



Electrical Specifications: $Z_0 = 50\Omega$ Lo = +20 dBm (Downconverter Application only)

Davamatar	Test Conditions	Units	Typical	Guaranteed	
Parameter	Test Conditions		25°C	0° to 50°C	-54° to +85°C
SSB Conversion Loss & SSB Noise Figure (max)	fR=0.02 to 0.4 GHz, fL=0.01 to 0.6 GHz, fl=0.002 to 0.2GHz fR=0.01 to 1.5 GHz, fL=0.01 to 1.6 GHz, fl=0.001 to 0.6GHz fl=0.002 to 0.2 GHz fl=0.001 to 0.6 GHz	dB dB dB dB	7.0 8.0 8.5 9.0	8.0 9.0 9.0 9.5	8.3 9.3 9.3 9.8
Isolation, L to R (min)	fL = 0.01 to 0.4 GHz fL = 0.4 to 1 GHz fL = 1 to 1.5 GHz	dB dB dB	35 30 22	28 23 20	27 22 19
Isolation, L to I (min)	fL = 0.01 to 0.4 GHz fL = 0.4 to 1 GHz fL = 1 to 1.5 GHz	dB dB dB	40 22 18	28 16 13	27 15 12
Isolation, R to I (min)	fL = 0.01 to 1 GHz fL = 1 to 1.5 GHz	dB dB	20 10		
1 dB Conversion Compression	fL @ +20 dBm	dBm	+15		
Input IP3		dBm dBm	+30 +24		

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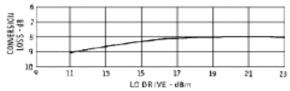


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Typical Performance Curves

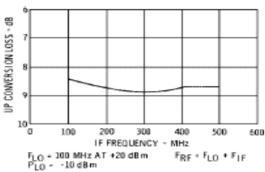
Conversion Loss vs. LO Drive



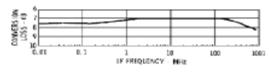
F_{RF} = 1000 MHz AT -10 48 n

 $F_{\rm L,0} \approx 1030~{\rm MHz}$

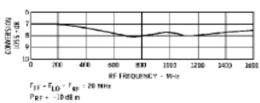
Upconversion Loss vs. Frequency



Conversion Loss vs. Frequency

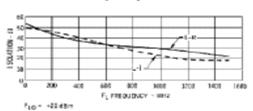


F_{RF} = 1000 MHz AT -00 dilm P_{LO} = +20 d§m



PLO ~ +20 dilim

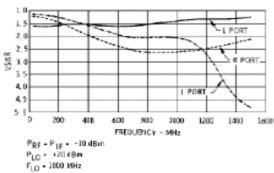
Isolation vs. Frequency



430 SUATION 9-1 680 200 1300 1200 1400

FREQUENCY F_{LCI} = 1900 MHz AT +20 68 m

VSWR





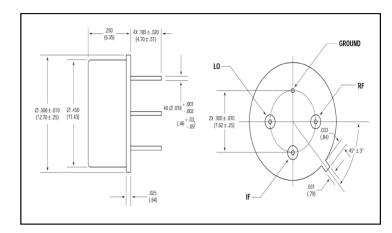
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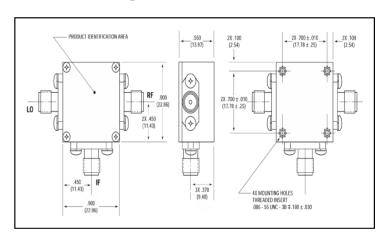
Absolute Maximum Ratings

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

Outline Drawing: TO-8



Outline Drawing: SMA Connectorized



M9H / M9HC



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