

Double-Balanced Mixer

Rev. V3

Features

- LO 2 TO 6 GHz
- RF 3.7 TO 4.2 GHz
- IF DC TO 2 GHz
- LO DRIVE: +7 dBm (NOMINAL)
- HIGH ISOLATION: 40 dB (TYP.)

Description

The M8H-3 is a double balanced mixer, designed for use in military, commercial and test equipment applications. The design utilizes Schottky ring quad diodes and broadband soft dielectric and 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. 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
M8H-3	TO-8
M8HC-3	SMA Connectorized

Product Image



Electrical Specifications: $Z_0 = 50\Omega$ $L_o = +7$ dBm (Downconverter Application only)

Parameter	Test Conditions	Units	Typical	Guaranteed	
			25°C	0° to 50°C	-54° to +85°C
SSB Conversion Loss & SSB Noise Figure (max)	$f_R=3.7$ to 4.2 GHz, $f_L=2$ to 6 GHz, $f_I=0.03$ to 2 GHz	dB	5.0	7.0	7.5
Isolation, L to R (min)	$f_L = 2$ to 4 GHz $f_L = 4$ to 6 GHz	dB	42	32	30
		dB	37	25	23
Isolation, L to I (min)	$f_L = 2$ to 6 GHz	dB	21	16	14
1 dB Conversion Compression	$f_L @ +7$ dBm	dBm	+0		
Input IP3		dBm	+13		

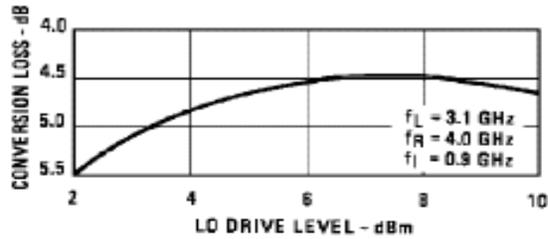
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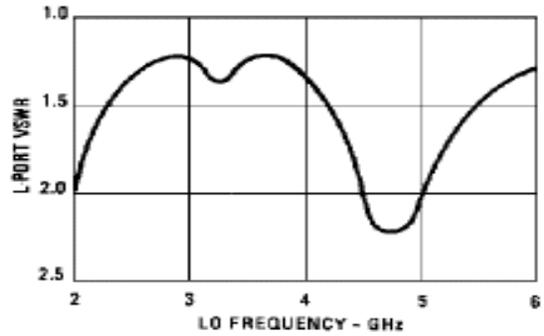
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Typical Performance Curves

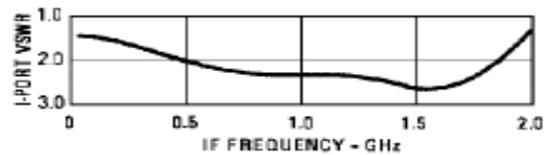
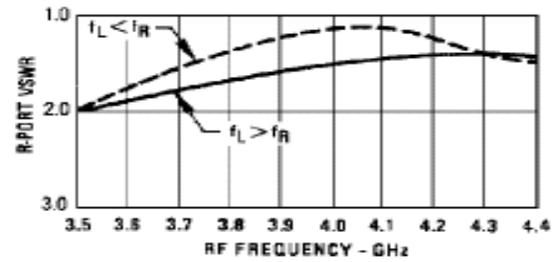
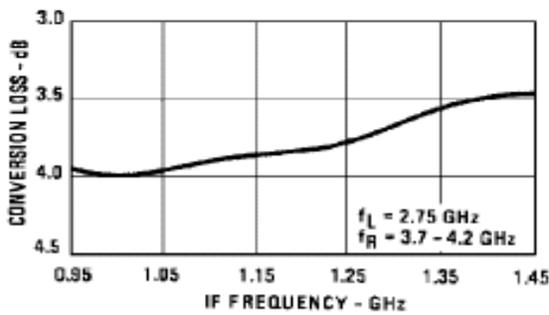
Conversion Loss



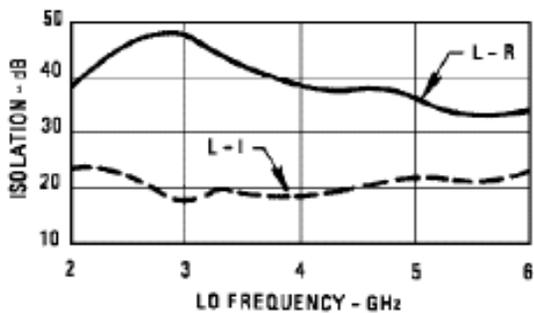
VSWR



Conversion Loss



Isolation



M8H-3 / M8HC-3



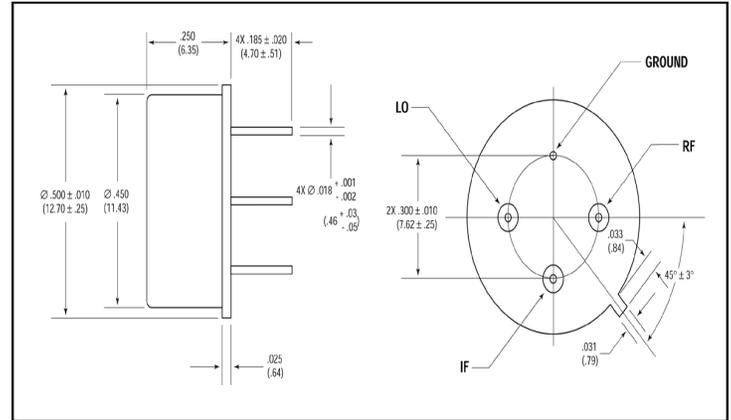
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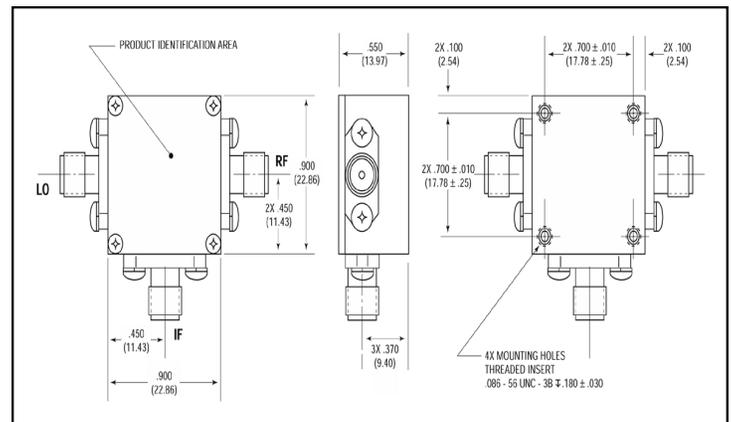
Absolute Maximum Ratings

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 +17 dBm max @ +100°C
Peak Input Current	50 mA DC

Outline Drawing: TO-8



Outline Drawing: SMA Connectorized



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