

Double-Balanced Mixer

Rev. V2

Features

- LO 2 TO 6 GHz
- RF 2.4 TO 6 GHz
- IF 0 TO 2000 MHz
- LO DRIVE +7 dBm (nominal)
- HIGH ISOLATION 40 dB (TYP.)

Description

The M8H-7 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-7 | TO-8 |
| M8HC-7 | SMA Connectorized |

Product Image



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

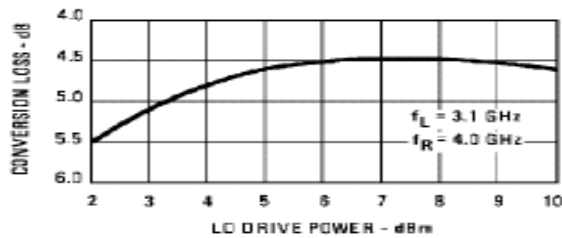
| Parameter | Test Conditions | Units | Typical | Guaranteed | |
|--|--|----------|------------|------------|---------------|
| | | | 25°C | 0° to 50°C | -54° to +85°C |
| SSB Conversion Loss & SSB Noise Figure (max) | fR=3.7 to 4.2 GHz, fL=2 to 6 GHz, fl=0.03 to 2 GHz fR=2.4 to 6 GHz, fL=2 to 6 GHz, fl=0.03 to 2 GHz | dB dB | 5.0 7.0 | 7.0 9.0 | 7.5 9.5 |
| Isolation, L to R (min) | fL = 2 to 4 GHz fL = 4 to 6 GHz | dB dB | 42 37 | 32 25 | 30 23 |
| Isolation, L to I (min) | fL = 2 to 6 GHz | dB | 21 | 16 | 14 |
| 1 dB Conversion Compression | fL @ +7 dBm | dBm | +0 | | |
| Input IP3 | | dBm | +13 | | |

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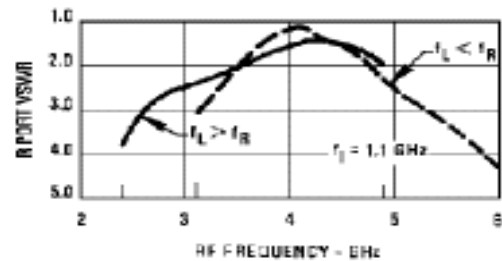
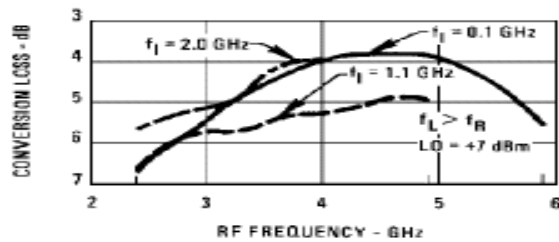
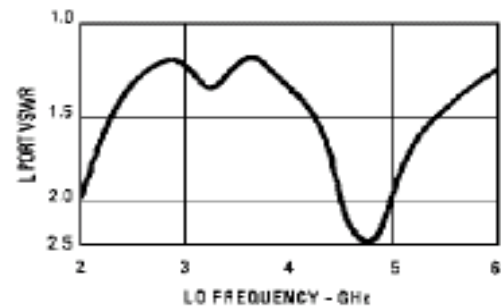
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Typical Performance Curves

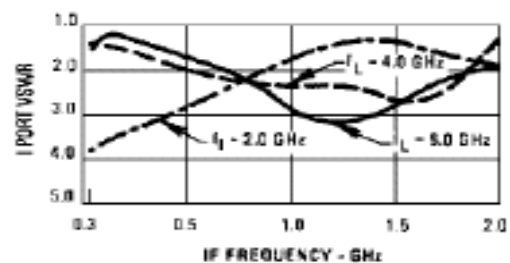
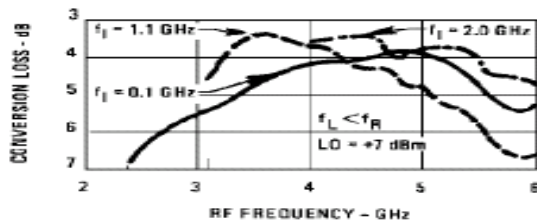
Conversion Loss



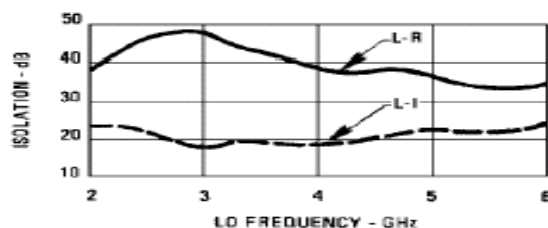
VSWR



Conversion Loss



Isolation



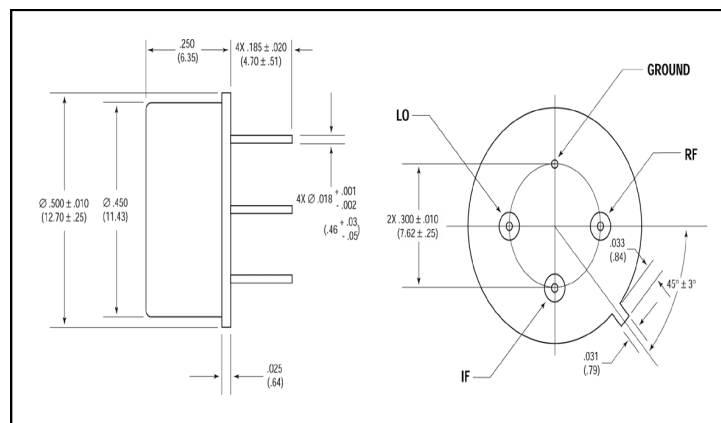
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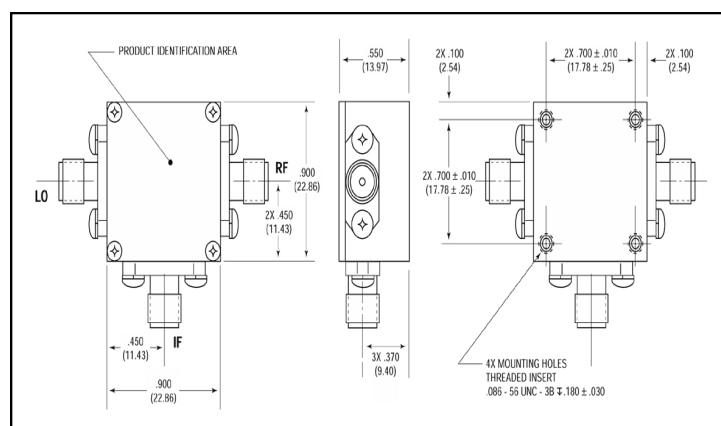
Absolute Maximum Ratings

| 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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