

Load Insensitive Mixer

Rev. V5

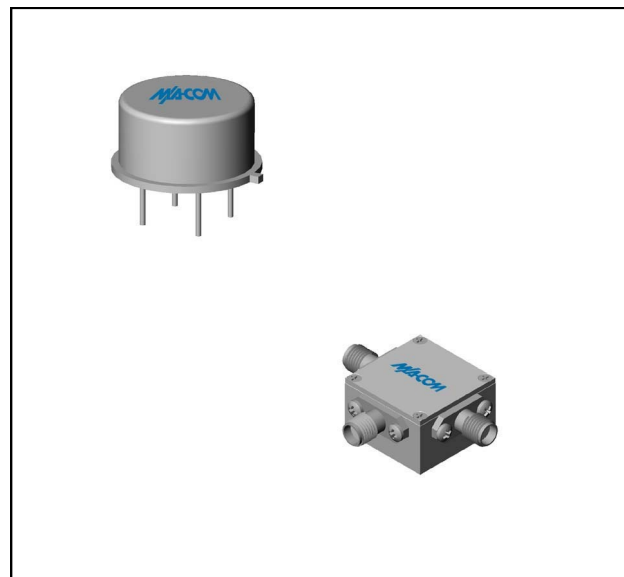
Features

- LO 1 TO 3400 MHz
- RF 1 TO 3400 MHz
- IF 1 TO 2000 MHz
- LO DRIVE: +23 dBm (NOMINAL)
- INSENSITIVE TO SYSTEM MISMATCH
- HIGH INTERCEPT: +29 dBm (TYP.)

Description

The M8TH is a termination insensitive mixer, designed for use in military, wireless and test equipment applications. The design utilizes Schottky bridge quad diodes, broadband ferrite baluns and internal loads to provide excellent performance without degradation due to external VSWR mismatches. Environmental screening available to MIL-STD-883, MIL-STD-202 or MIL-DTL-28837, consult factory.

Product Image



Ordering Information

| Part Number | Package |
|-------------|-------------------|
| M8TH | TO-8 |
| M8THC | SMA Connectorized |

Electrical Specifications: $Z_0 = 50\Omega$ $Lo = +23$ dBm (Downconverter application only)

| Parameter | Test Conditions | Units | Typical | Guaranteed | |
|--|--|----------|---------|------------|----------------|
| | | | | +25°C | -54° to +85°C* |
| SSB Conversion Loss (max) & SSB Noise Figure (max) | fR = 0.005 to 2 GHz, fL = 0.005 to 2 GHz, fl = 0.001 to 0.5 GHz fR = 0.001 to 3.4 GHz, fL = 0.001 to 3.4 GHz, fl = 0.001 to 2 GHz | dB dB | 6.5 | 8.0 | 8.3 |
| | | | 8.5 | 10.5 | 10.8 |
| Isolation, L to R (min) | fL = 0.01 to 1.5 GHz fL = 0.01 to 3.4 GHz | dB dB | 37 | 30 | 29 |
| | | | 35 | 22 | 21 |
| Isolation, L to I (min) | fL = 0.01 to 1.5 GHz fL = 0.01 to 3.4 GHz | dB dB | 40 | 30 | 29 |
| | | | 35 | 25 | 24 |
| Isolation, R to I (min) | fR = 0.01 to 3.4 GHz | dB | 21 | | |
| 1 dB Conversion Comp. | fL = +23 dBm | dBm | +17 | | |
| Input IP3 | fR1 = 1 GHz at 0 dBm, fR2 = 1.01 GHz at 0 dBm, fL = 1.8 GHz at +22 dBm | dBm | +29 | | |

* The M8TC specification limits apply at 0°C to +50°C.

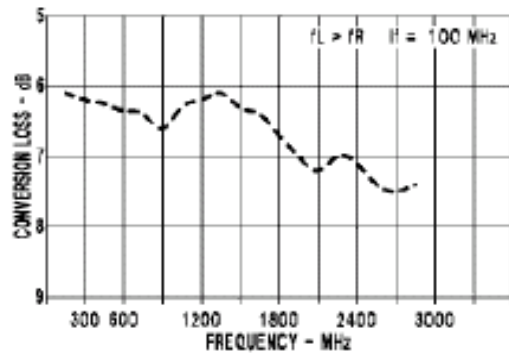
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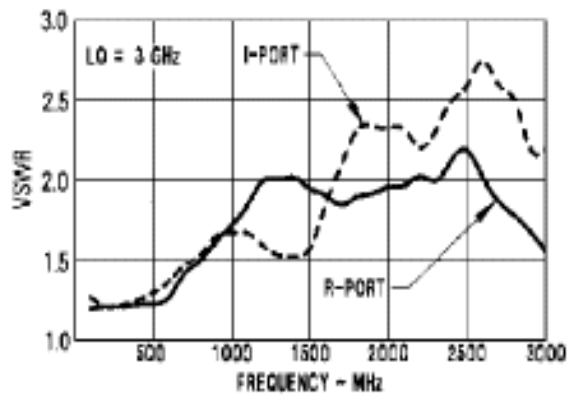
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Typical Performance Curves

Conversion Loss vs. Frequency



VSWR vs. Frequency



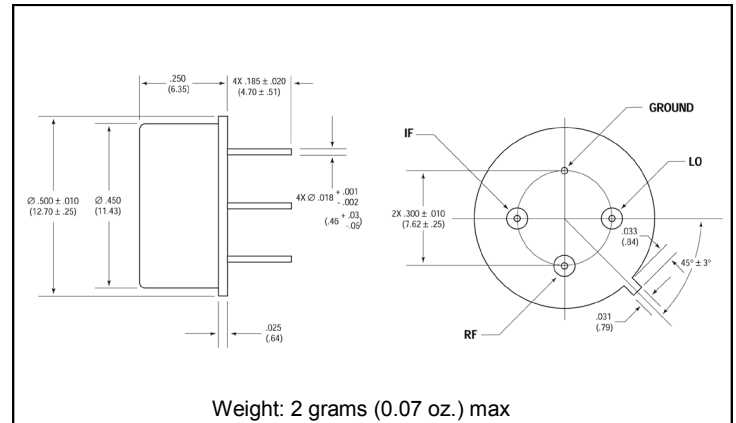
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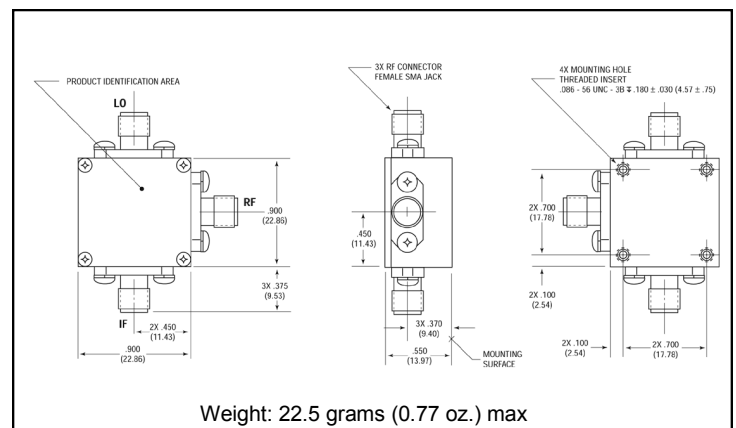
Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|-----------------------|---|
| Operating Temperature | -54°C to +100°C |
| Storage Temperature | -65°C to +100°C |
| Peak Input Power | +27 dBm max @ +25°C +23 dBm max @ +100°C |
| Peak Input Current | mA DC |

Outline Drawing: TO-8 *



Outline Drawing: SMA Connectorized *



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

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