

Load Insensitive Mixer

M4TH
V3

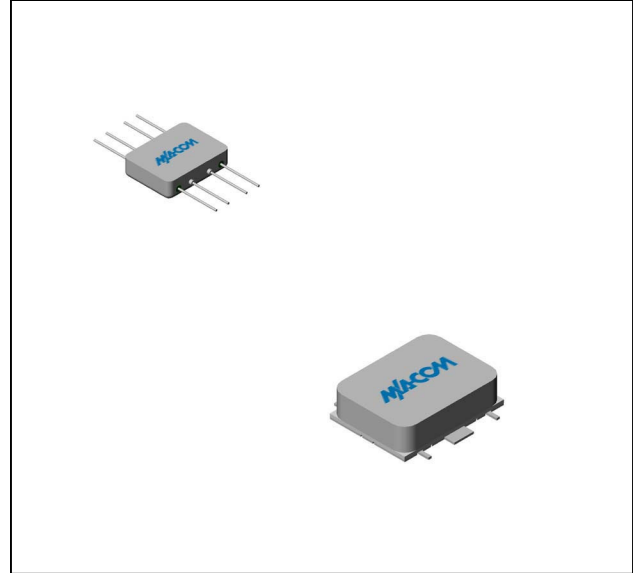
Features

- 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.)
- AVAILABLE IN SURFACE MOUNT

Description

The M4TH is a termination insensitive mixer, designed for use in military, commercial 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. The use of high temperature solder and welded assembly processes used internally makes it ideal for use in semi-automated and automated assembly. Environmental screening

Product Image



Ordering Information

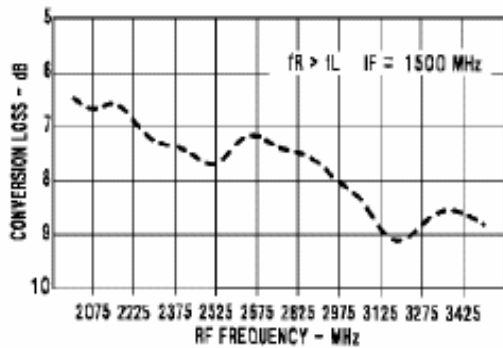
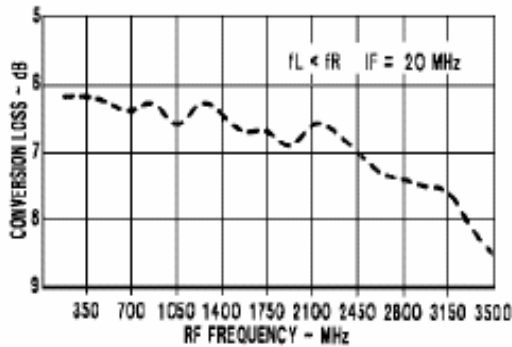
| Part Number | Package |
|-------------|---------------|
| M4TH | Flatpack |
| SM4TH | Surface Mount |

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 2.0 GHz, fL = 0.005 to 2.0 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 2.0 GHz | dB dB | 7.0 | 8.0 | 8.3 |
| | | | 9.0 | 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 | 35 | 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 = 0.001 to 3.4 GHz | dB | 21 | | |
| 1 dB Conversion Comp. | fL = +23 dBm | dBm | +17 | | |
| Input IP3 | fR1 = 2 GHz at 0 dBm, fR2 = 2.01 GHz at 0 dBm, fL = 1.9 GHz at +23 dBm | dBm | +29 | | |

Typical Performance Curves

Conversion Loss vs. Frequency



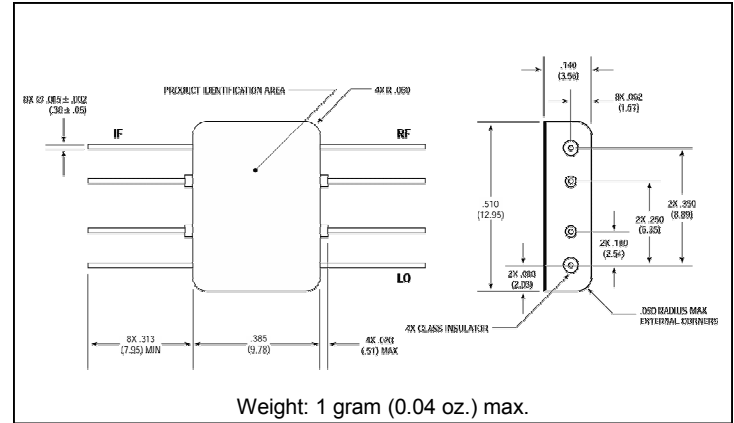
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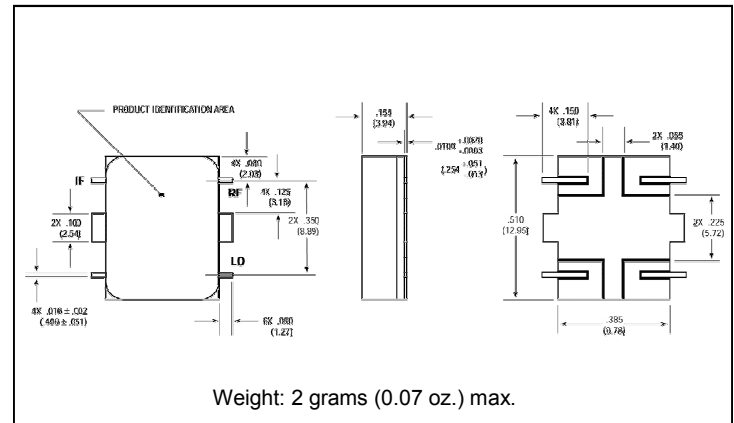
Absolute Maximum Ratings

| 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 | 50 mA DC |

Outline Drawing: Flatpack *



Outline Drawing: Surface Mount *



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