

## Load Insensitive Mixer

Rev. V3

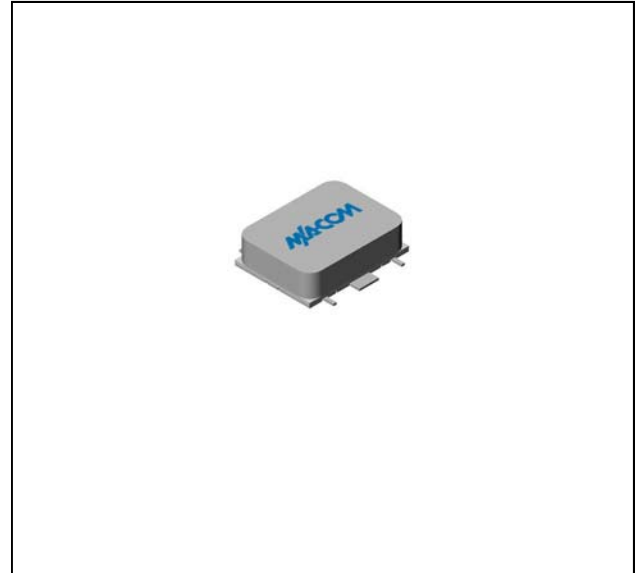
## Features

- LO 1 TO 3400 MHz
- RF 1 TO 3400 MHz
- IF 1 TO 2000 MHz
- LO DRIVE: +17 dBm (NOMINAL)
- INSENSITIVE TO SYSTEM MISMATCH
- HIGH INTERCEPT: +24 dBm (TYP.)
- +260°C REFLOW COMPATIBLE

## Description

The SM4T17 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       |
|-------------|---------------|
| SM4T17      | Surface Mount |

Electrical Specifications:  $Z_0 = 50\Omega$   $Lo = +17$  dBm (Downconverter application only)

| Parameter                 | Test Conditions   | Units | Typical                        | Guaranteed |               |
|---------------------------|---|-------|--------------------------------|------------|---------------|
|                           |   |       |                                | +25°C      | -40° to +85°C |
| SSB Conversion Loss (max) | fR = 0.005 to 1 GHz, fL = 0.005 to 1 GHz, fI = 0.001 to 0.5 GHz<br>fR = 0.001 to 3 GHz, fL = 0.001 to 3 GHz, fI = 0.001 to 1.5 GHz<br>fR = 0.001 to 3.4 GHz, fL = 0.001 to 3.4 GHz, fI = 0.001 to 2 GHz | dB    | 6.5                            | 7.5        | 7.8           |
|                           |   | dB    | 8.0                            | 9.0        | 9.3           |
|                           |   | dB    | 9.0                            | 10.5       | 10.8          |
| SSB Noise Figure          |   | dB    | Within 1 dB of conversion loss |            |               |
| Isolation, L to R (min)   | fL = 0.01 to 1.5 GHz<br>fL = 0.01 to 3.4 GHz  | dB    | 40                             | 35         | 34            |
|                           |   | dB    | 30                             | 25         | 24            |
| Isolation, L to I (min)   | fL = 0.01 to 1.5 GHz<br>fL = 0.01 to 3.4 GHz  | dB    | 40                             | 35         | 34            |
|                           |   | dB    | 30                             | 25         | 24            |
| Isolation, R to I (min)   | fR = 0.01 to 3.4 GHz  | dB    | 25                             |            |               |
| 1 dB Conversion Comp.     | fL = +17 dBm  | dBm   | +13                            |            |               |
| Input IP3                 | f <sub>R1</sub> = 1.9 GHz @ 10 dBm, f <sub>R2</sub> = 1.91GHz @ 10 dBm,<br>fL = 2 GHz @ 17 dBm  | dBm   | +24                            |            |               |

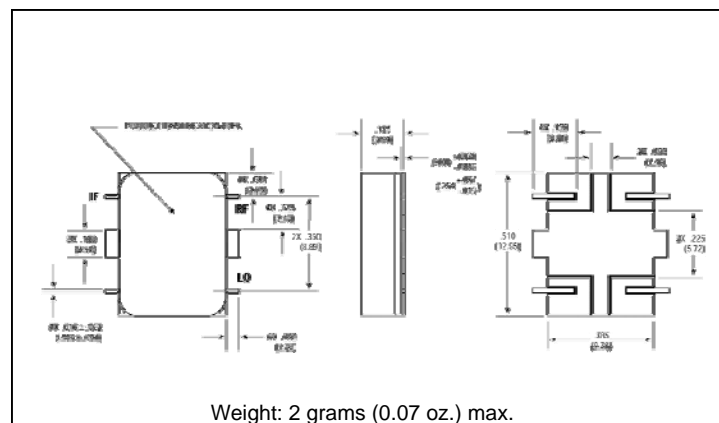
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### Absolute Maximum Ratings

| 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<br>+23 dBm max @ +100°C |
| Peak Input Current    | 50 mA DC                                    |

### Outline Drawing: Surface Mount \*



\* Dimensions are inches (millimeters)  $\pm 0.015$  (0.38) unless otherwise specified.

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