Load Insensitive Mixer

## 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.)
- $+260^{\circ} \mathrm{C}$ 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



| Part Number | Package |
| :---: | :---: |
| SM4T17 | Surface Mount |

## Electrical Specifications: $Z_{0}=50 \Omega$ Lo $=+17 \mathrm{dBm}$ (Downconverter application only)

| Parameter | Test Conditions | Units | Typical | Guaranteed |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $+25^{\circ} \mathrm{C}$ | $-40^{\circ}$ to $+85^{\circ} \mathrm{C}$ |
| SSB Conversion Loss (max) |  | $\begin{aligned} & \mathrm{dB} \\ & \mathrm{~dB} \\ & \mathrm{~dB} \end{aligned}$ | $\begin{aligned} & 6.5 \\ & 8.0 \\ & 9.0 \end{aligned}$ | $\begin{gathered} 7.5 \\ 9.0 \\ 10.5 \end{gathered}$ | $\begin{gathered} 7.8 \\ 9.3 \\ 10.8 \end{gathered}$ |
| SSB Noise Figure |  | dB | Within 1 dB of conversion loss |  |  |
| Isolation, L to R (min) | $\begin{aligned} & \mathrm{fL}=0.01 \text { to } 1.5 \mathrm{GHz} \\ & \mathrm{fL}=0.01 \text { to } 3.4 \mathrm{GHz} \end{aligned}$ | $\begin{aligned} & \mathrm{dB} \\ & \mathrm{~dB} \end{aligned}$ | $\begin{aligned} & 40 \\ & 30 \end{aligned}$ | $\begin{aligned} & 35 \\ & 25 \end{aligned}$ | $\begin{aligned} & 34 \\ & 24 \end{aligned}$ |
| Isolation, L to I (min) | $\begin{aligned} & \mathrm{fL}=0.01 \text { to } 1.5 \mathrm{GHz} \\ & \mathrm{fL}=0.01 \text { to } 3.4 \mathrm{GHz} \end{aligned}$ | $\begin{aligned} & \mathrm{dB} \\ & \mathrm{~dB} \end{aligned}$ | $\begin{aligned} & 40 \\ & 30 \end{aligned}$ | $\begin{aligned} & 35 \\ & 25 \end{aligned}$ | $\begin{aligned} & 34 \\ & 24 \end{aligned}$ |
| Isolation, R to I (min) | $\mathrm{fR}=0.01$ to 3.4 GHz | dB | 25 |  |  |
| 1 dB Conversion Comp. | $\mathrm{fL}=+17 \mathrm{dBm}$ | dBm | +13 |  |  |
| Input IP3 | $\begin{gathered} \mathrm{f}_{\mathrm{R} 1}=1.9 \mathrm{GHz} @ 10 \mathrm{dBm}, \mathrm{f}_{\mathrm{R} 2}=1.91 \mathrm{GHz} @ 10 \mathrm{dBm}, \\ \mathrm{fL}=2 \mathrm{GHz} @ 17 \mathrm{dBm} \end{gathered}$ | dBm | +24 |  |  |

[^0]Visit ww.macomtech.com for additional data sheets and product information.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

Load Insensitive Mixer

## Absolute Maximum Ratings

| Parameter | Absolute Maximum |
| :---: | :---: |
| Operating Temperature | $-54^{\circ} \mathrm{C}$ to $+100^{\circ} \mathrm{C}$ |
| Storage Temperature | $-65^{\circ} \mathrm{C}$ to $+100^{\circ} \mathrm{C}$ |
| Peak Input Power | $+27 \mathrm{dBm} \max @+25^{\circ} \mathrm{C}$ <br> $+23 \mathrm{dBm} \max @+100^{\circ} \mathrm{C}$ |
| Peak Input Current | 50 mA DC |

## Outline Drawing: Surface Mount *



- North America Tel: 800.366.2266 • Europe Tel: +353.21.244.6400
- India Tel: +91.80.4155721 - China Tel: +86.21.2407.1588

Visit www.macomtech.com for additional data sheets and product information.


[^0]:    North America Tel: 800.366.2266 • Europe Tel: +353.21.244.6400

    - India Tel: +91.80.4155721 - China Tel: +86.21.2407.1588

