## Frequency Doubler

## Features

- INPUT: 2 TO 9 GHz
- OUTPUT: 4 TO 18 GHz
- INPUT DRIVE LEVEL: +19 dBm (NOMINAL)
- HERMETICALLY-SEALED PACKAGE


## Description

The FD93H is a passive bridge diode frequency doubler, designed for use in the high volume commercial and test equipment applications. The design utilizes Schottky bridge quad diodes and broadband baluns to attain excellent performance. 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 available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.

## Ordering Information

| Part Number | Package |
| :---: | :---: |
| FD93H | Versapac |
| FD93HC | SMA Connectorized |

## Product Image



Electrical Specifications: $Z_{0}=50 \Omega \quad P_{\text {in }}=+19 \mathrm{dBm}$

| Parameter | Test Conditions | Units | Typical | Guaranteed |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $+25^{\circ} \mathrm{C}$ | $-54^{\circ}$ to $+85^{\circ} \mathrm{C}$ |
| SSB Conversion Loss (max) | $\begin{aligned} & \mathrm{f}_{\mathrm{f}}=2 \text { to } 4 \mathrm{GHz} \\ & \mathrm{f}_{\mathrm{in}}=4 \text { to } 9 \mathrm{GHz} \end{aligned}$ | $\begin{aligned} & \mathrm{dB} \\ & \mathrm{~dB} \end{aligned}$ | $\begin{aligned} & 10.0 \\ & 12.0 \end{aligned}$ | $\begin{aligned} & 13.0 \\ & 14.0 \end{aligned}$ | $\begin{aligned} & 13.3 \\ & 14.3 \end{aligned}$ |
| Fundamental Suppression (min) | $\mathrm{f}_{\text {in }}=2$ to 9 GHz | dBc | 25 | 18 | 17 |
| Third Harmonic Suppression | $\mathrm{f}_{\text {in }}=2$ to 6 GHz | dBc | 25 | 16 | 15 |
| Input VSWR | $\mathrm{f}_{\text {in }}=2$ to 9 GHz |  | 1.5:1 |  |  |

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## Typical Performance Curves

Conversion Loss Vs. LO Drive Power


## Suppression vs. Input Frequency



Conversion Loss vs. Input Frequency


## Isolation vs. Frequency



VSWR vs. Frequency


ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, is considering for development. Performance is based on target specification
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## 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 | $+26 \mathrm{dBm} \max @+25^{\circ} \mathrm{C}$ <br> $+23 \mathrm{dBm} \max @+100^{\circ} \mathrm{C}$ |

Outline Drawing: Versapac *


Outline Drawing: SMA Connectorized *


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