## Frequency Doubler

## Features

- IINPUT: 5 TO 2400 MHz
- OUTPUT: 10 TO 4800 MHz
- INPUT DRIVE LEVEL +23 dBm (NOMINAL)
- HERMETICALLY-SEALED PACKAGE


## Description

The FD25H 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 |
| :---: | :---: |
| FD25H | TO-8 |
| FD25HC | SMA Connectorized |
| SFD25H | Surface Mount |

## Product Image



## Electrical Specifications: $Z_{0}=50 \Omega \quad P_{\text {in }}=+23 \mathrm{dBm}$

| Parameter | Test Conditions | Units | Typical | Guaranteed |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $+25^{\circ} \mathrm{C}$ | $-54^{\circ}$ to $+85^{\circ} \mathrm{C}^{*}$ |
| SSB Conversion Loss (max) | $\mathrm{f}_{\text {in }}=5$ to 2400 MHz | dB | 12.0 | 13.5 | 13.8 |
| Fundamental Suppression (min) | $\begin{gathered} \mathrm{f}_{\text {in }}=5 \text { to } 1000 \mathrm{MHz} \\ \mathrm{f}_{\text {in }}=1000 \text { to } 2000 \mathrm{MHz} \\ \mathrm{f}_{\text {in }}=2000 \text { to } 2400 \mathrm{MHz} \end{gathered}$ | dBc dBc dBc | $\begin{aligned} & 35 \\ & 25 \\ & 20 \end{aligned}$ | $\begin{aligned} & 25 \\ & 20 \\ & 16 \end{aligned}$ | $\begin{aligned} & 24 \\ & 19 \\ & 15 \end{aligned}$ |
| Third Harmonic Suppression | $\begin{gathered} \mathrm{f}_{\text {i }}=5 \text { to } 500 \mathrm{MHz} \\ \mathrm{f}_{\text {in }}=500 \text { to } 2400 \mathrm{MHz} \end{gathered}$ | $\begin{aligned} & \mathrm{dBc} \\ & \mathrm{dBc} \end{aligned}$ | $\begin{aligned} & 40 \\ & 35 \end{aligned}$ | $\begin{aligned} & 30 \\ & 25 \end{aligned}$ | $\begin{aligned} & 29 \\ & 24 \end{aligned}$ |
| Input VSWR | $\mathrm{f}_{\text {in }}=5$ to 2400 MHz |  | 1.5:1 |  |  |

[^0][^1]Visit ww.macomtech.com for additional data sheets and product information.

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## Typical Performance Curves

## Conversion Loss vs. Input Power



## VSWR vs. Frequency



Conversion Loss vs. Input Frequency


## Harmonic Suppression vs. Input

 Frequency

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PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology
Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available Commitment to produce in volume is not guaranteed

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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 | $+27.6 \mathrm{dBm} \max @+25^{\circ} \mathrm{C}$ <br> $+25 \mathrm{dBm} \max @+100^{\circ} \mathrm{C}$ |

## Outline Drawing: TO-8 *



## Outline Drawing: SMA Connectorized *



## Outline Drawing: Flatpack *



## Outline Drawing: Surface Mount *



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

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[^0]:    * The FD25HC specification limits apply at $0^{\circ} \mathrm{C}$ to $+50^{\circ} \mathrm{C}$.

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