

## Frequency Doubler

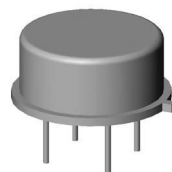
Rev. V4

## Features

- Input 5 - 2400 MHz
- Output 10 - 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.



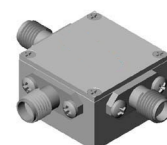
TO-8



Flatpack



Surface Mount



SMA Connectorized

Electrical Specifications:  $Z_0 = 50 \Omega$ ,  $P_{IN} = 23 \text{ dBm}$ 

| Parameter                      | Test Conditions<br>Input Frequency (MHz) | Units | Typical | Guaranteed |                            |
|--------------------------------|------------------------------------------|-------|---------|------------|----------------------------|
|                                |                                          |       | +25°C   | +25°C      | -54°C - +85°C <sup>1</sup> |
| SSB Conversion Loss (max.)     | 5 - 2400                                 | dB    | 12.0    | 13.5       | 13.8                       |
| Fundamental Suppression (min.) | 5 - 1000                                 | dBc   | 35      | 25         | 24                         |
|                                | 1000 - 2000                              |       | 25      | 20         | 19                         |
|                                | 2000 - 2400                              |       | 20      | 16         | 15                         |
| Third Harmonic Suppression     | 5 - 500                                  | dBc   | 40      | 30         | 29                         |
|                                | 500 - 2400                               |       | 35      | 25         | 24                         |
| Input VSWR                     | 5 - 2400                                 | ratio | 1.5:1   | —          | —                          |

1. The FD25HC specification limits apply at 0°C to +50°C.

## Ordering Information

| Part Number        | Package                |
|--------------------|------------------------|
| FD25H              | TO-8                   |
| FD25HC             | SMA Connectorized      |
| SFD25H             | Surface Mount          |
| MAUC-010499-SFD25H | Surface Mount Screened |

## Absolute Maximum Ratings

| Parameter             | Absolute Maximum                      |
|-----------------------|---------------------------------------|
| Peak Input Power      | 27.6 dBm @ +25°C<br>25.0 dBm @ +100°C |
| Peak Input Current    | 50 mA DC                              |
| Operating Temperature | -54°C to +100°C                       |
| Storage Temperature   | -65°C to +100°C                       |

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### Typical Performance Curves

**Conversion Loss vs. Input Frequency ( $P_{IN} = 23$  dBm)**



**Conversion Loss vs. Input Power**



**Input VSWR vs. Input Frequency ( $P_{IN} = 23$  dBm)**



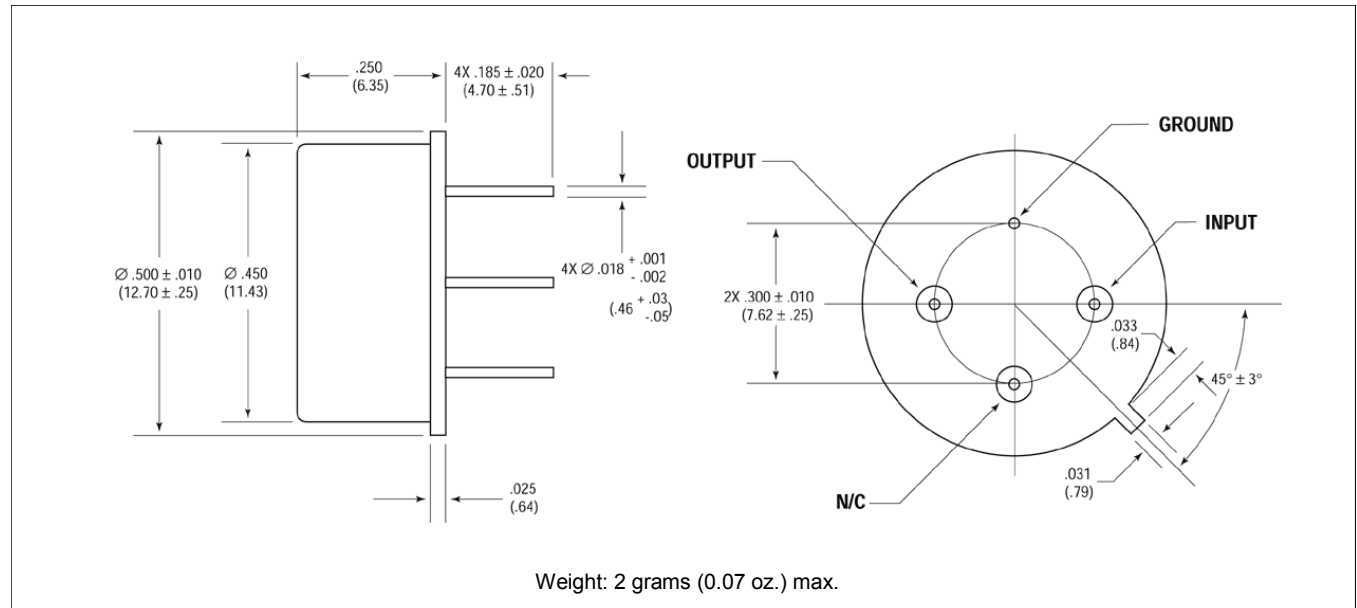
**Suppression vs. Input Frequency**



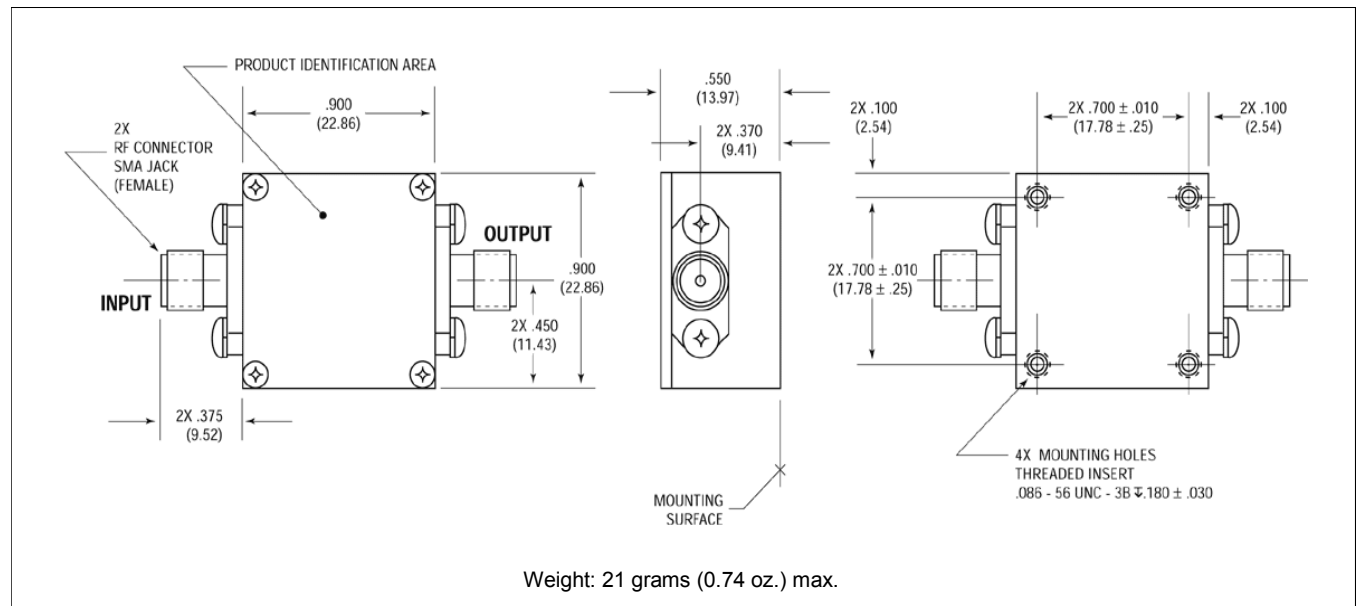
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### Outline Drawing\*: TO-8



### Outline Drawing\*: SMA Connectorized

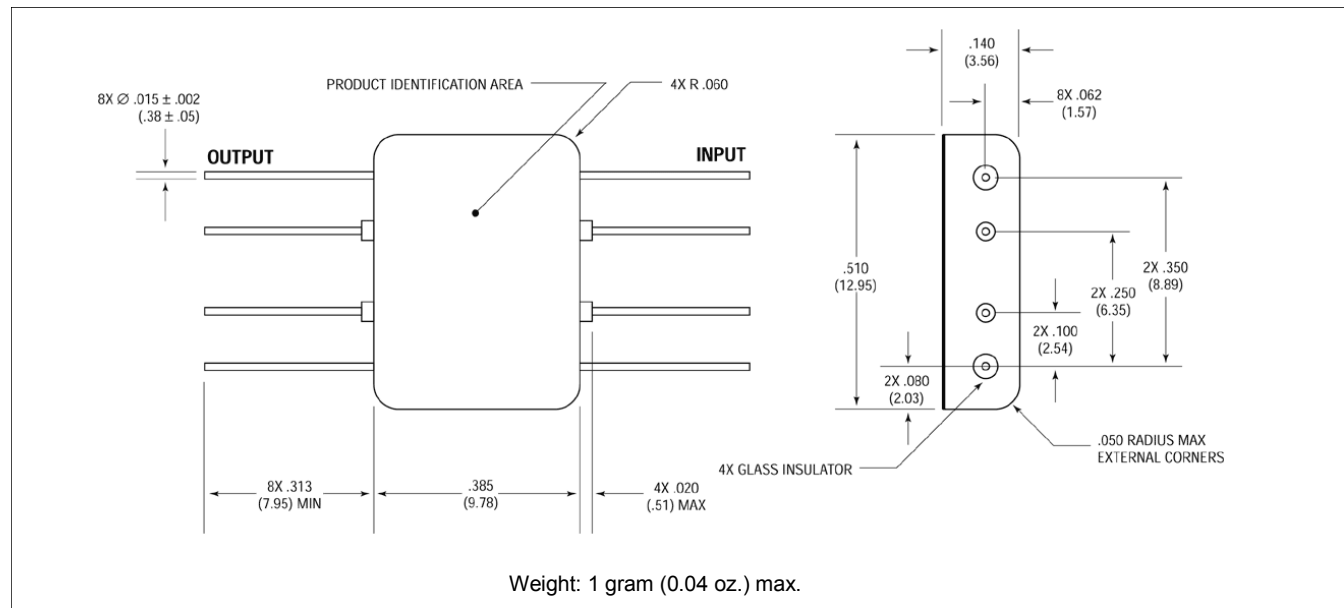


\* Dimensions are inches (millimeters)  $\pm 0.015$  (0.38) unless otherwise specified.

## Frequency Doubler

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### Outline Drawing\*: Flatpack



### Outline Drawing\*: Surface Mount



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