

## 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.



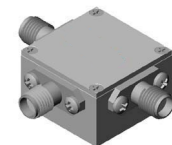
TO-8



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                       |

### Typical Performance Curves

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



Conversion Loss vs. Input Power



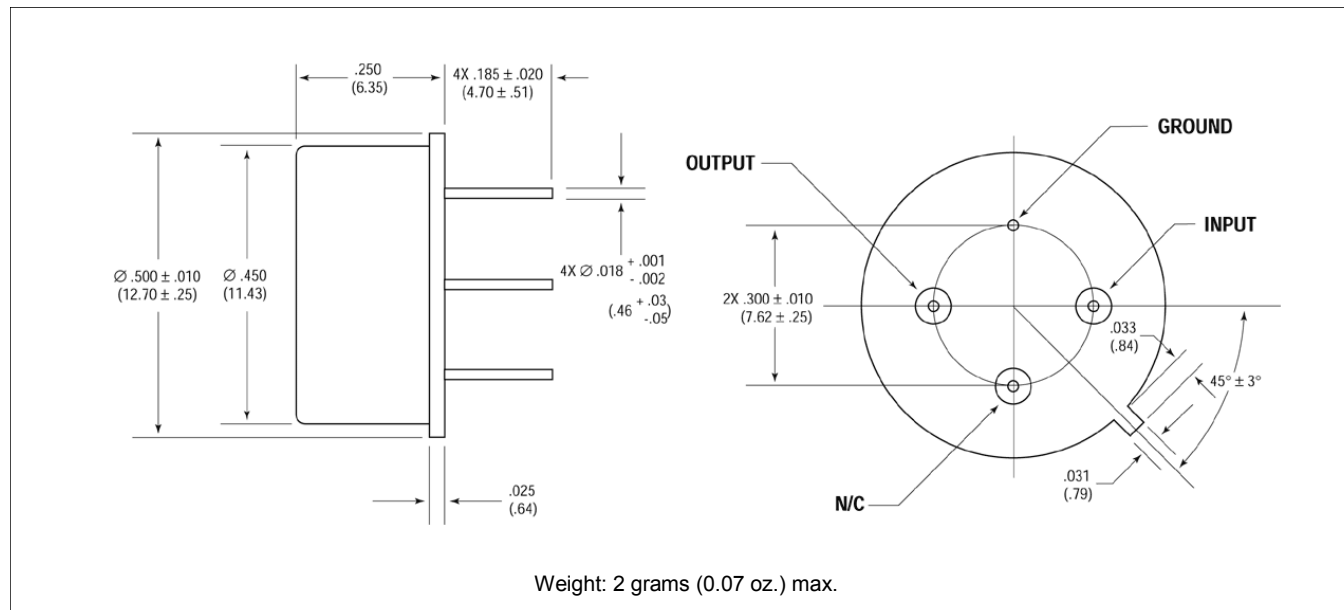
Input VSWR vs. Input Frequency ( $P_{IN} = 23 \text{ dBm}$ )



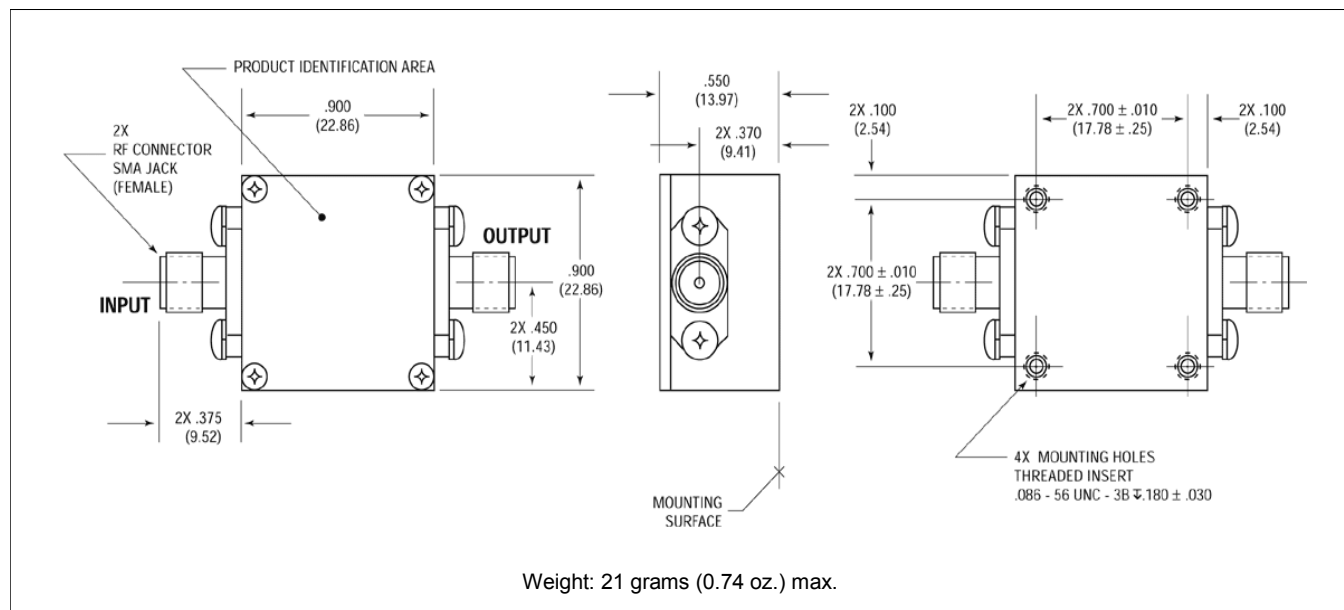
Suppression vs. Input Frequency



### Outline Drawing\*: TO-8

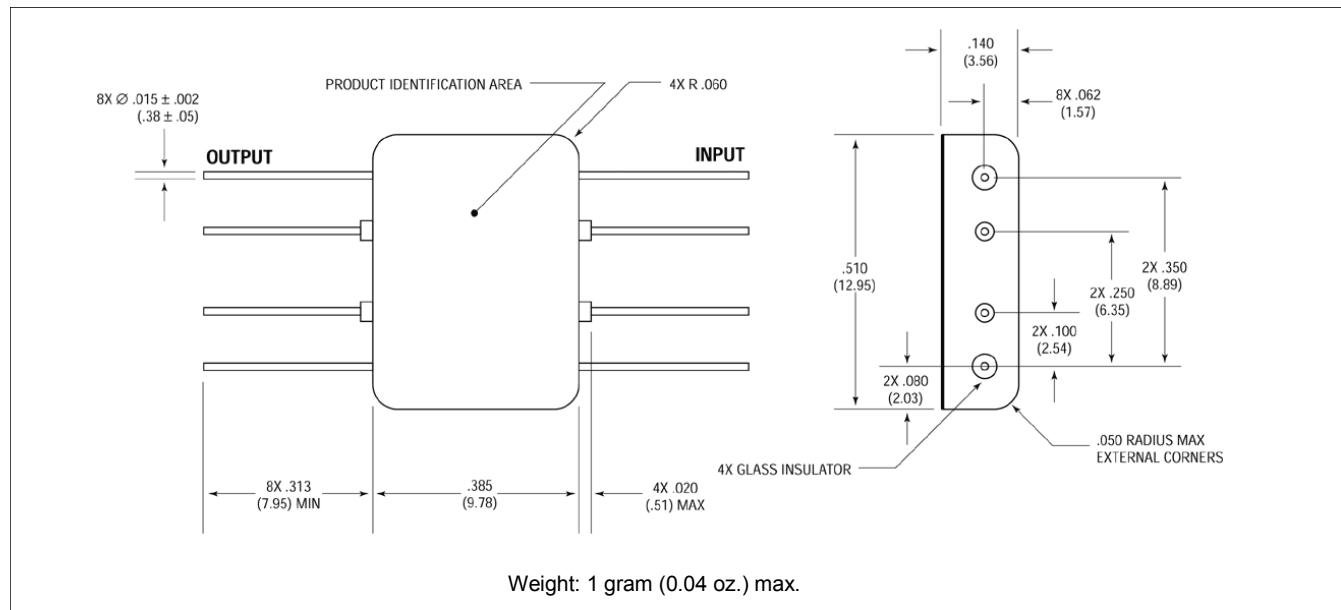


### Outline Drawing\*: SMA Connectorized

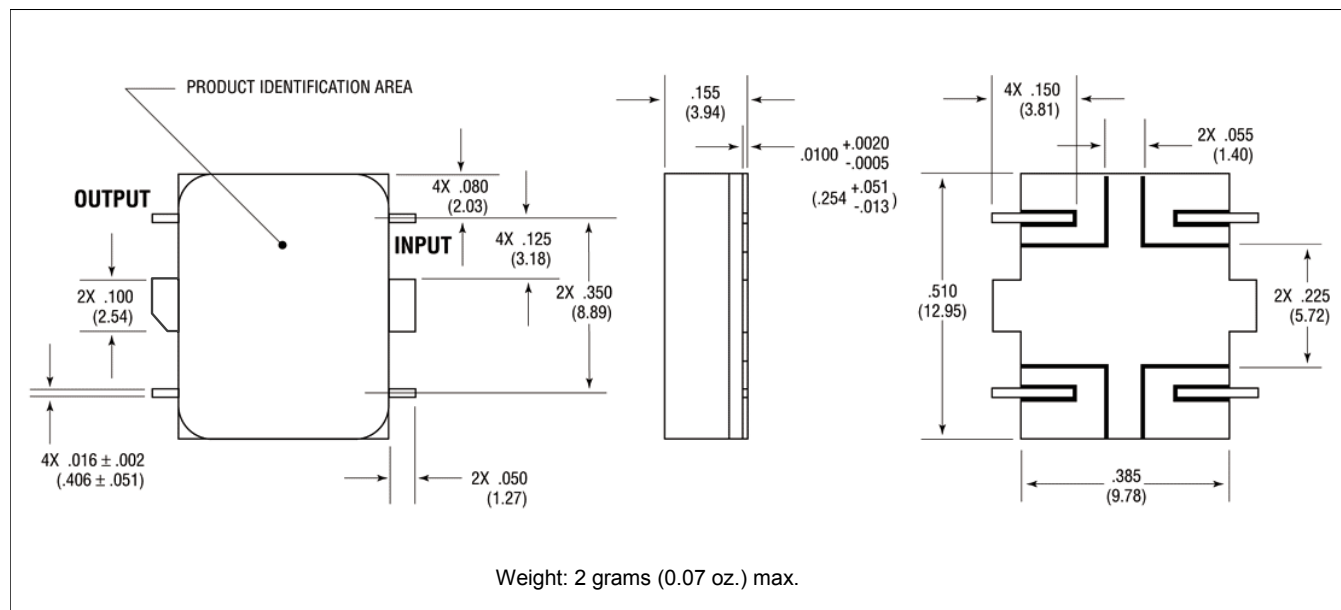


\* Dimensions are inches (millimeters)  $\pm 0.015$  (0.38) unless otherwise specified.

### Outline Drawing\*: Flatpack



### Outline Drawing\*: Surface Mount



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

MACOM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with MACOM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.