

## Frequency Doubler

Rev. V5

### Features

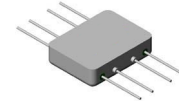
- Input 5 - 2400 MHz
- Output 10 - 4800 MHz
- Input Drive Level = 10 dBm (nominal)
- Hermetically-Sealed Package

### Description

The FD25 is a passive bridge diode frequency doubler, designed for use in military, commercial and test equipment applications. The design utilizes Schottky bridge quad diodes and broadband soft dielectric and/or ferrite baluns to attain excellent performance. The use of high temperature solder assembly processes used internally makes it ideal for use in manual and semi-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: $Z_0 = 50 \Omega$ , $P_{IN} = 10 \text{ dBm}$

Parameter	Test Conditions Input Frequency (MHz)	Units	Typical	Guaranteed	
			+25°C	+25°C	-54°C - +85°C <sup>1</sup>
SSB Conversion Loss (max.)	5 - 30	dB	12.0	13.0	15.0
	30 - 2400		11.5	13.0	13.5
Fundamental Suppression (min.)	5 - 1000	dBc	35	25	23
	1000 - 2000		25	20	18
	2000 - 2400		20	16	14
Third Harmonic Suppression	5 - 500	dBc	50	40	38
	500 - 1000		40	30	28
	1000 - 2400		35	25	23
Input VSWR	5 - 2400	ratio	1.5:1	—	—

1. The FD25C specification limits apply at 0°C to +50°C.

### Ordering Information

Part Number	Package
FD25	TO-8
FD25C	SMA Connectorized
FD25E	Flatpack
SFD25	Surface Mount

### Absolute Maximum Ratings

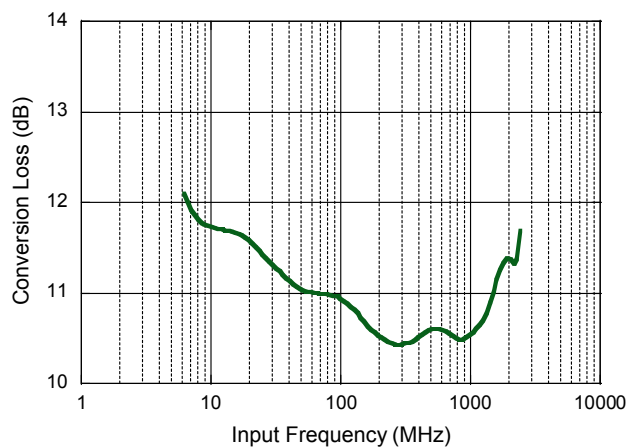
Parameter	Absolute Maximum
Peak Input Power	23 dBm @ +25°C 20 dBm @ +100°C
Peak Input Current	50 mA DC
Operating Temperature	-54°C to +100°C
Storage Temperature	-65°C to +100°C

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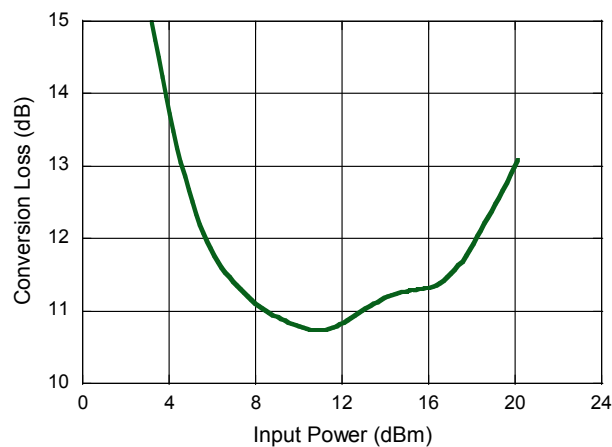
Rev. V5

### Typical Performance Curves

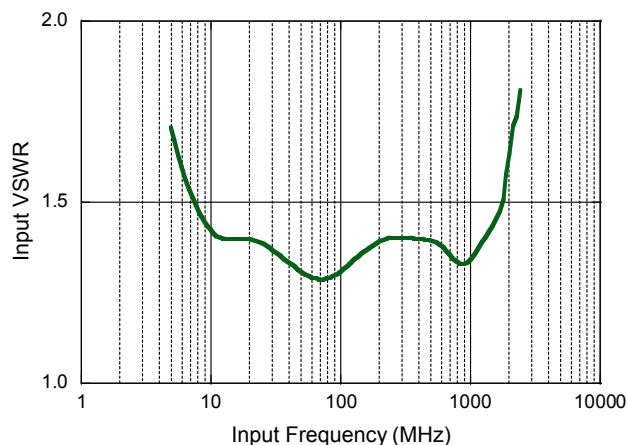
**Conversion Loss vs. Input Frequency ( $P_{IN} = 10$  dBm)**



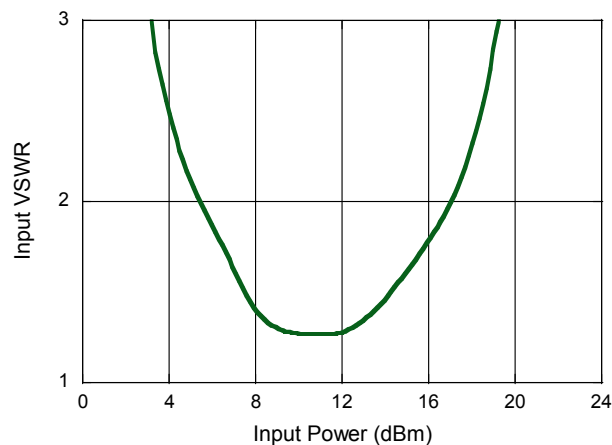
**Conversion Loss vs. Input Power**



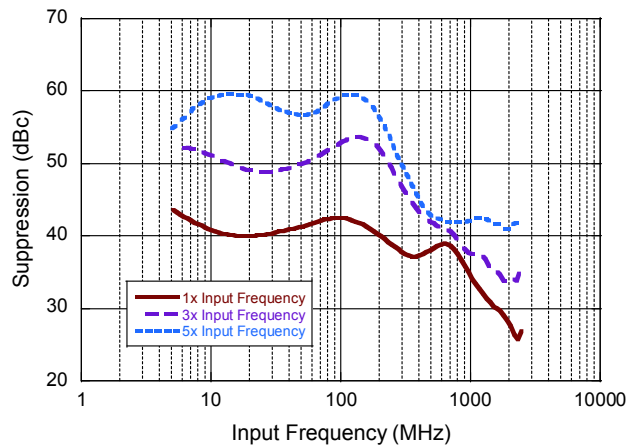
**Input VSWR vs. Input Frequency ( $P_{IN} = 10$  dBm)**



**Input VSWR vs. Input Power**



**Suppression vs. Input Frequency**



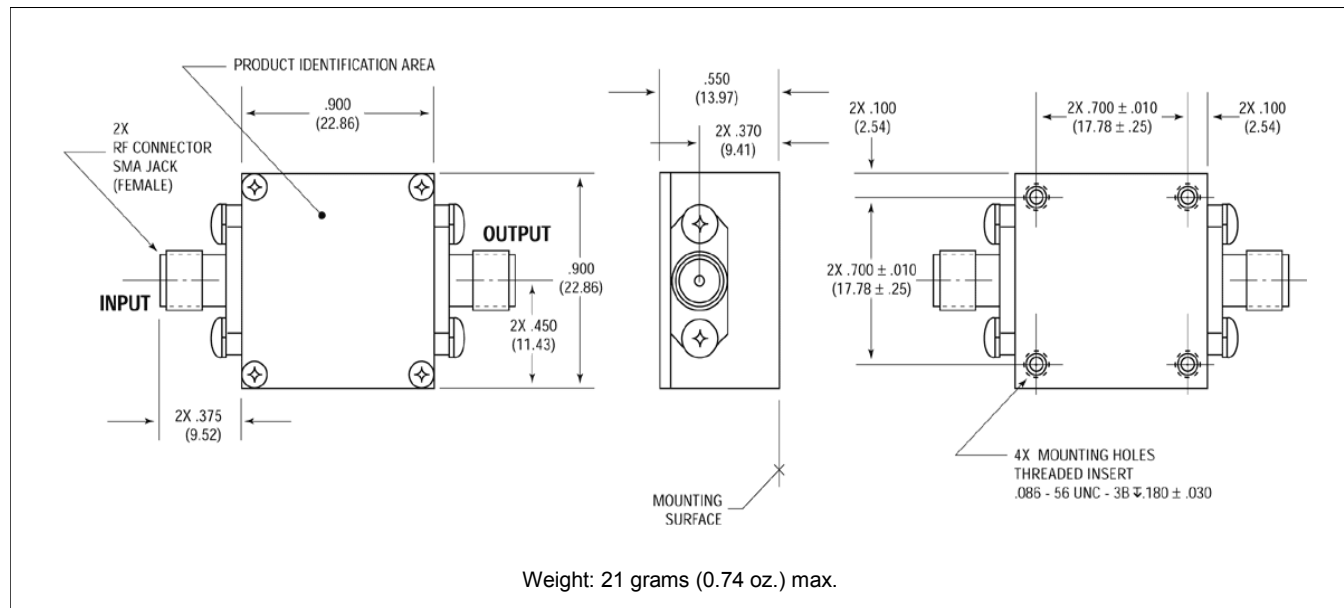
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Rev. V5

### Outline Drawing\*: TO-8

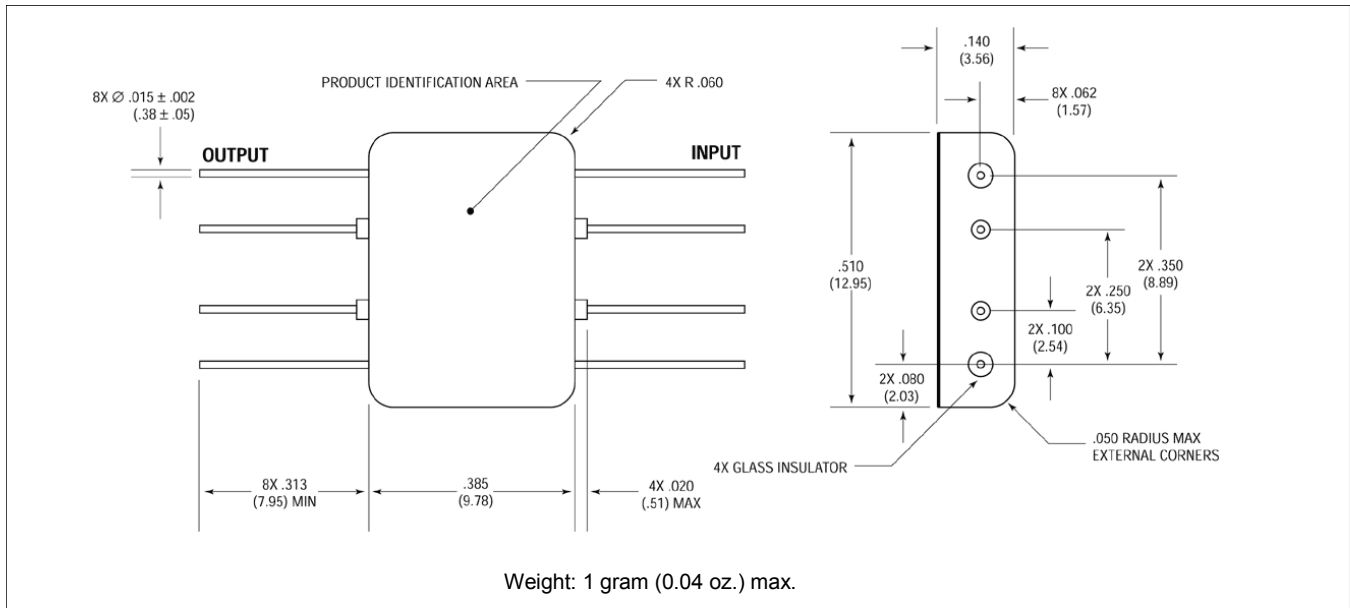


### Outline Drawing\*: SMA Connectorized

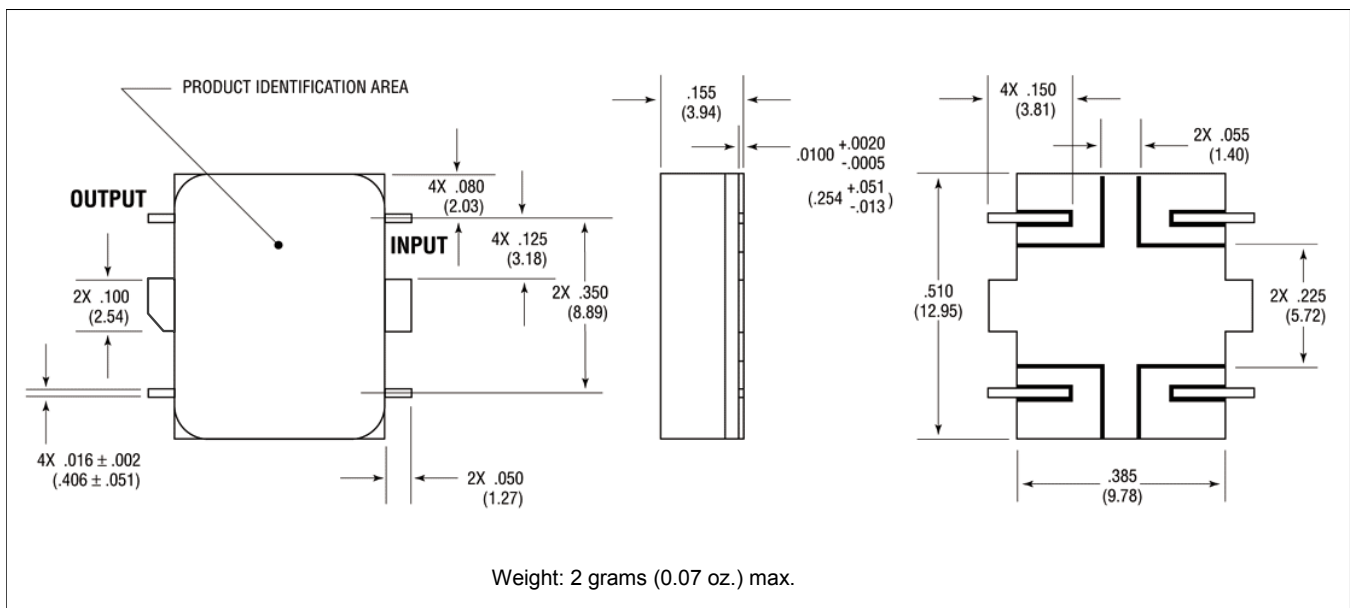


\* Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified.

### Outline Drawing\*: Flatpack



### Outline Drawing\*: Surface Mount



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

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