

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.



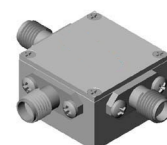
TO-8



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 ¹
SSB Conversion Loss (max.)	5 - 30 30 - 2400	dB	12.0 11.5	13.0 13.0	15.0 13.5
Fundamental Suppression (min.)	5 - 1000 1000 - 2000 2000 - 2400	dBc	35 25 20	25 20 16	23 18 14
Third Harmonic Suppression	5 - 500 500 - 1000 1000 - 2400	dBc	50 40 35	40 30 25	38 28 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

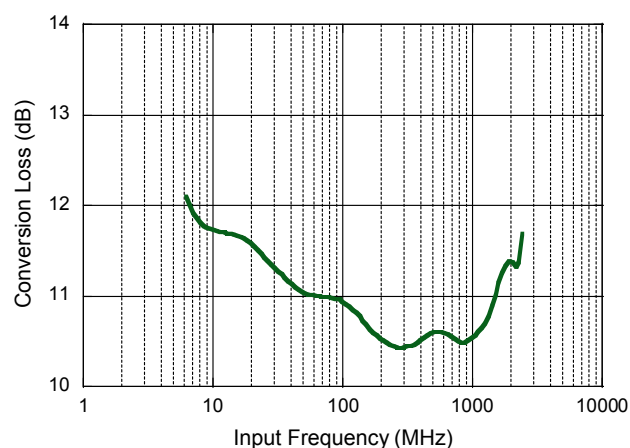
Parameter	Absolute Maximum
Peak Input Power	23 dBm @ +25°C 20 dBm @ +100°C
Peak Input Current	50 mA DC
Operating Temperature	-54°C to +100°C
Storage Temperature	-65°C to +100°C

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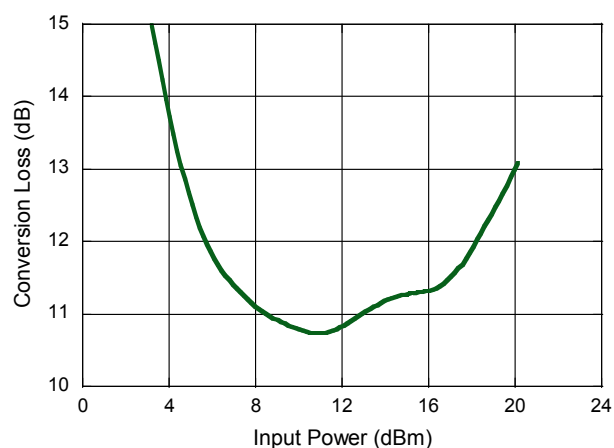
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Typical Performance Curves

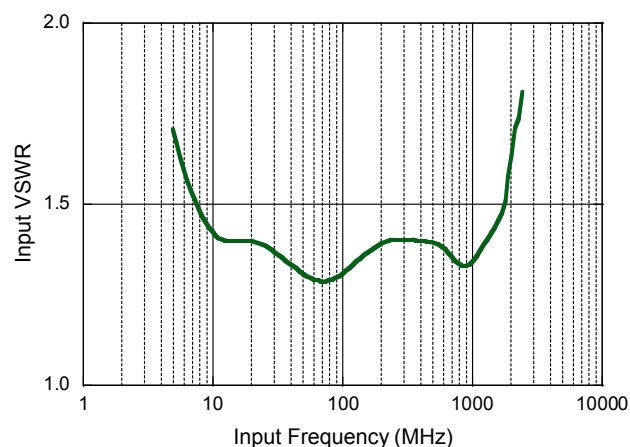
Conversion Loss vs. Input Frequency ($P_{IN} = 10$ dBm)



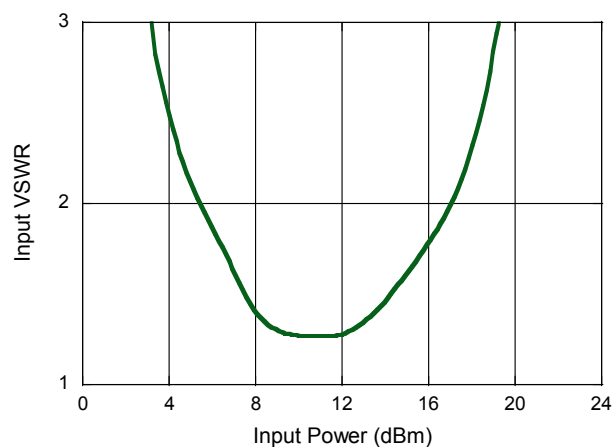
Conversion Loss vs. Input Power



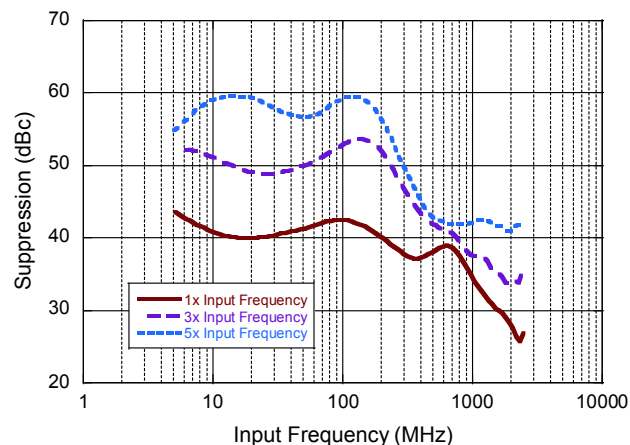
Input VSWR vs. Input Frequency ($P_{IN} = 10$ dBm)



Input VSWR vs. Input Power



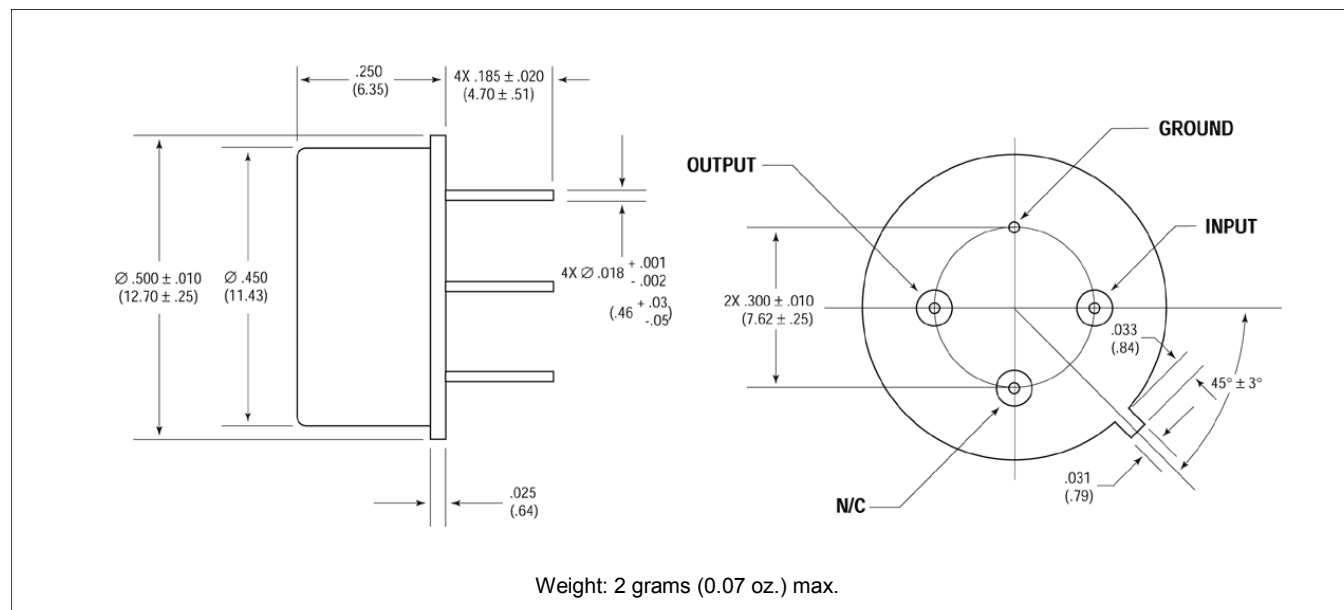
Suppression vs. Input Frequency



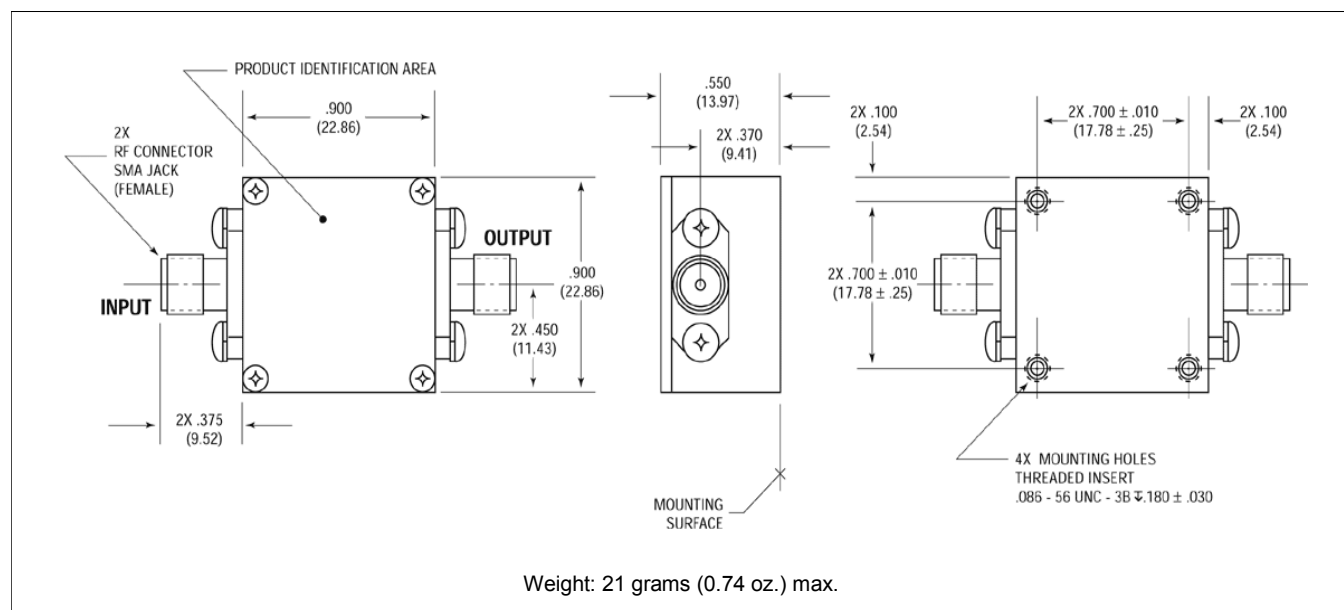
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Outline Drawing*: TO-8



Outline Drawing*: SMA Connectorized



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

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Outline Drawing*: Flatpack



Outline Drawing*: Surface Mount



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

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