

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 Input Frequency (MHz)	Units	Typical	Guaranteed	
			+25°C	+25°C	-54°C - +85°C ¹
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

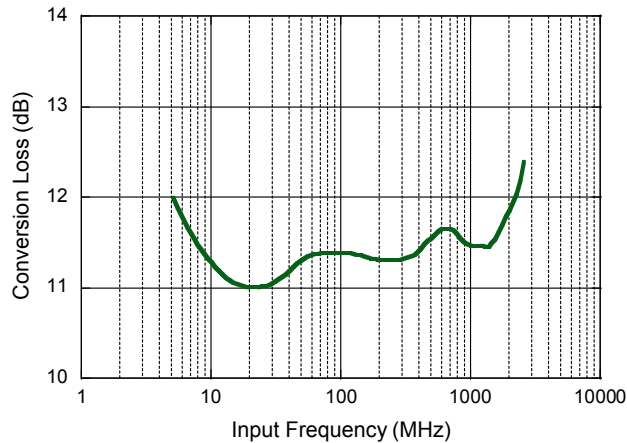
Parameter	Absolute Maximum
Peak Input Power	27.6 dBm @ +25°C 25.0 dBm @ +100°C
Peak Input Current	50 mA DC
Operating Temperature	-54°C to +100°C
Storage Temperature	-65°C to +100°C

Frequency Doubler

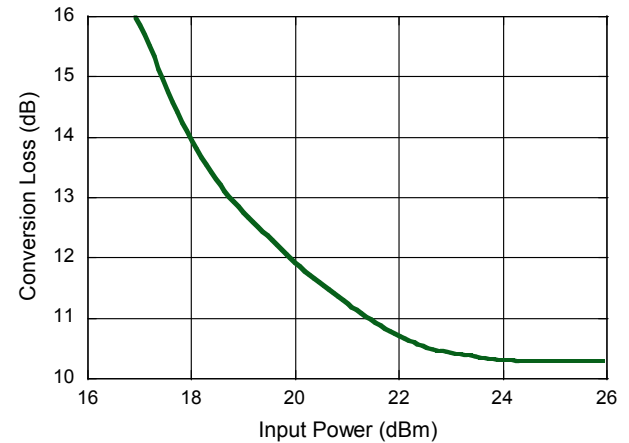
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Typical Performance Curves

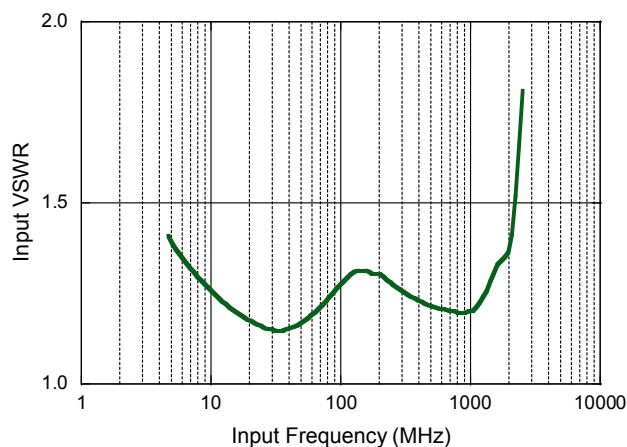
Conversion Loss vs. Input Frequency ($P_{IN} = 23$ dBm)



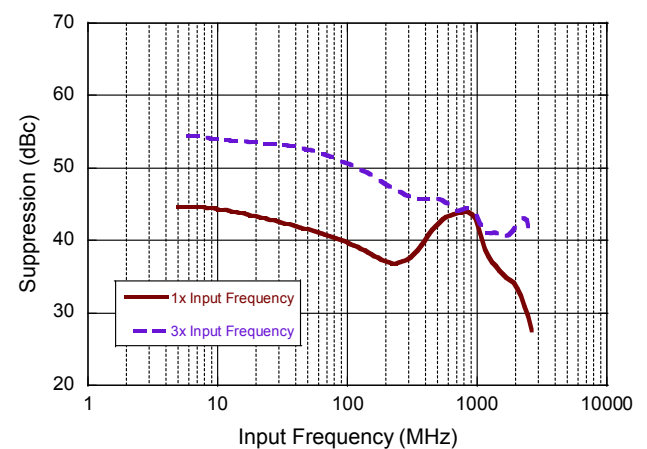
Conversion Loss vs. Input Power



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



Suppression vs. Input Frequency



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Technical drawing of the component showing side and top views with dimensions.

Side View Dimensions:

- Overall width: $.250$ (6.35)
- Overall height: $\varnothing .500 \pm .010$ (12.70 $\pm$.25)
- Internal feature height: $\varnothing .450$ (11.43)
- Feature 1: $4X .185 \pm .020$ (4.70 $\pm$.51)
- Feature 2: $4X \varnothing .018 \begin{smallmatrix} +.001 \\ -.002 \end{smallmatrix}$ (.46 $\begin{smallmatrix} +.03 \\ -.05 \end{smallmatrix}$)
- Feature 3: $.025$ (.64)

Top View Dimensions:

- Overall diameter: $2X .300 \pm .010$ (7.62 $\pm$.25)
- Feature 1: $\varnothing .033$ (.84)
- Feature 2: $.031$ (.79)
- Feature 3: $45^\circ \pm 3^\circ$
- Labels: OUTPUT, GROUND, INPUT, N/C

Weight: 2 grams (0.07 oz.) max.

PRODUCT IDENTIFICATION AREA

INPUT

OUTPUT

MOUNTING SURFACE

**4X MOUNTING HOLES
THREADED INSERT
.085 - 56 UNC - 3B ±.180 ± .030**

Weight: 21 grams (0.74 oz.) max.

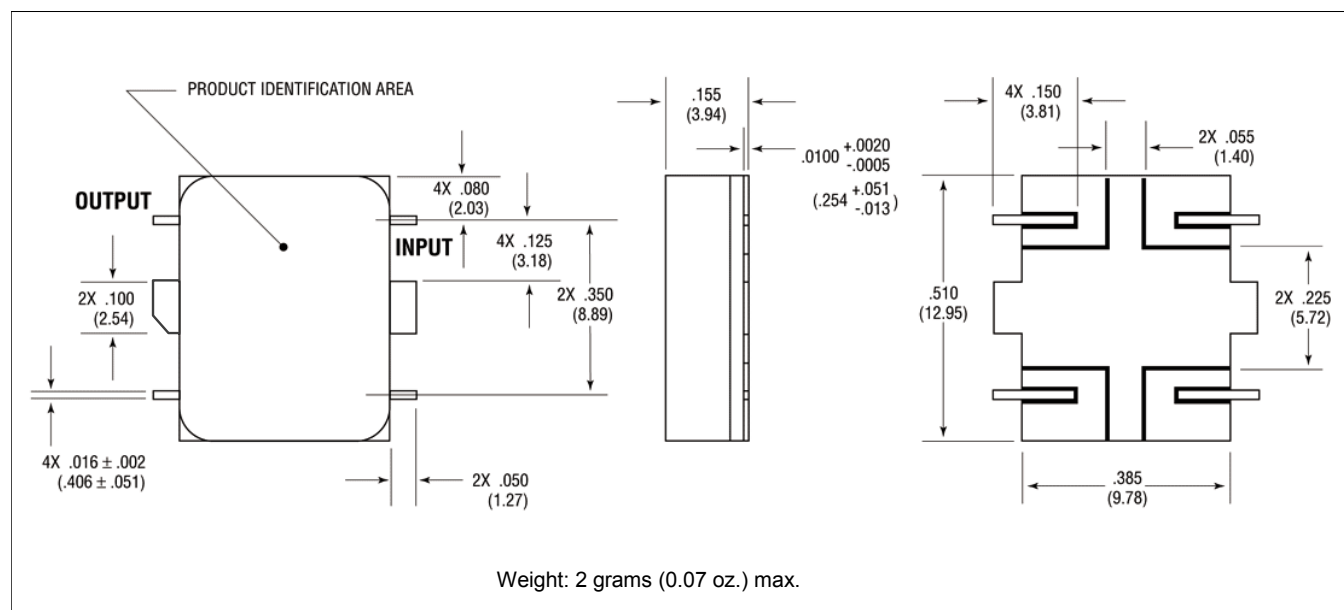
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DC-0007716

Outline Drawing*: Flatpack



Outline Drawing*: Surface Mount



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

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