# FD93H / FD93HC

## **Frequency Doubler**



Rev. V4

#### Features

- INPUT: 2 TO 9 GHz
- OUTPUT: 4 TO 18 GHz
- INPUT DRIVE LEVEL: +19 dBm (NOMINAL)
- HERMETICALLY-SEALED PACKAGE

#### Description

The FD93H 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.

### **Ordering Information**

Part Number	Package
FD93H	Versapac
FD93HC	SMA Connectorized



## Electrical Specifications: $Z_0 = 50\Omega$ $P_{in} = +19$ dBm

Parameter	Test Conditions	Units	Typical	Guaranteed	
Farameter	Test Conditions			+25ºC	-54º to +85ºC
SSB Conversion Loss (max)	f <sub>in</sub> = 2 to 4 GHz f <sub>in</sub> = 4 to 9 GHz	dB dB	10.0 12.0	13.0 14.0	13.3 14.3
Fundamental Suppression (min)	f <sub>in</sub> = 2 to 9 GHz	dBc	25	18	17
Third Harmonic Suppression	f <sub>in</sub> = 2 to 6 GHz	dBc	25	16	15
Input VSWR	f <sub>in</sub> = 2 to 9 GHz		1.5:1		

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Commitment to produce in volume is not guaranteed.

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### **Typical Performance Curves**

#### Conversion Loss Vs. LO Drive Power



Suppression vs. Input Frequency



Isolation vs. Frequency



#### VSWR vs. Frequency



#### Conversion Loss vs. Input Frequency



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### **Absolute Maximum Ratings**

Parameter	Absolute Maximum
Operating Temperature	-54°C to +100°C
Storage Temperature	-65ºC to +100ºC
Peak Input Power	+26 dBm max @ +25⁰C +23 dBm max @ +100⁰C

## Outline Drawing: Versapac



# Outline Drawing: SMA Connectorized \*



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

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<sup>3</sup> 

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