

# 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

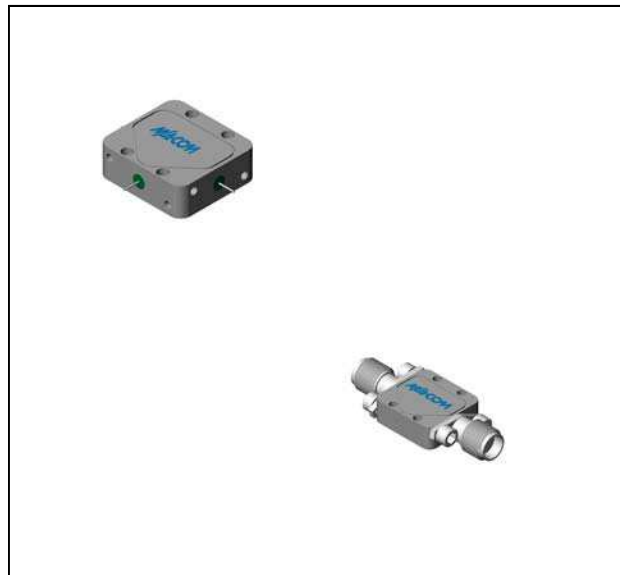
### Description

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 |

### Product Image

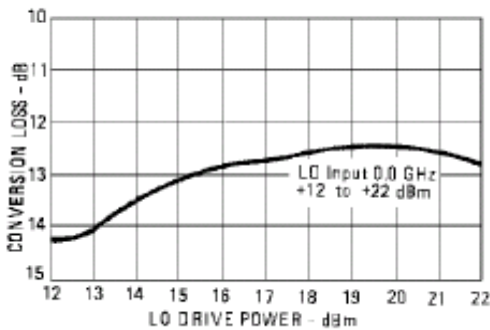


### Electrical Specifications: $Z_0 = 50\Omega$ $P_{in} = +19$ dBm

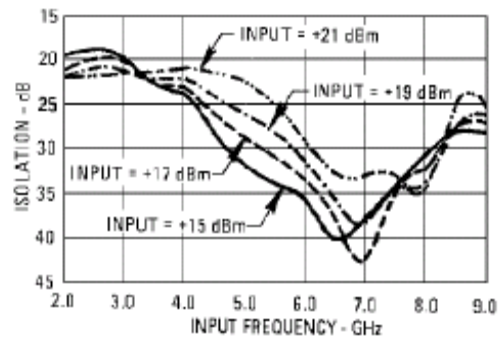
| Parameter                     | Test Conditions       | Units | Typical | Guaranteed |               |
|-------------------------------|-----------------------|-------|---------|------------|---------------|
|                               |                       |       |         | +25°C      | -54° to +85°C |
| SSB Conversion Loss (max)     | $f_{in} = 2$ to 4 GHz | dB    | 10.0    | 13.0       | 13.3          |
|                               | $f_{in} = 4$ to 9 GHz | dB    | 12.0    | 14.0       | 14.3          |
| Fundamental Suppression (min) | $f_{in} = 2$ to 9 GHz | dBc   | 25      | 18         | 17            |
| Third Harmonic Suppression    | $f_{in} = 2$ to 6 GHz | dBc   | 25      | 16         | 15            |
| Input VSWR                    | $f_{in} = 2$ to 9 GHz |       | 1.5:1   |            |               |

### Typical Performance Curves

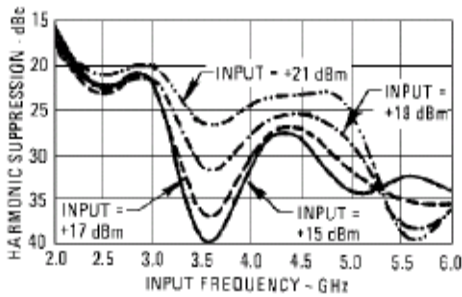
Conversion Loss Vs. LO Drive Power



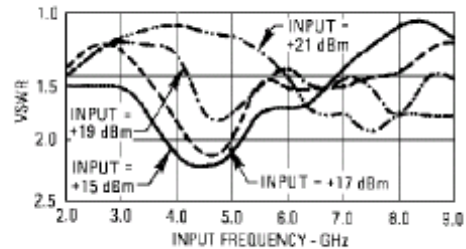
Isolation vs. Frequency



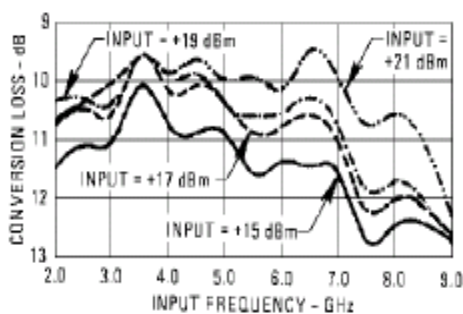
Suppression vs. Input Frequency



VSWR vs. Frequency



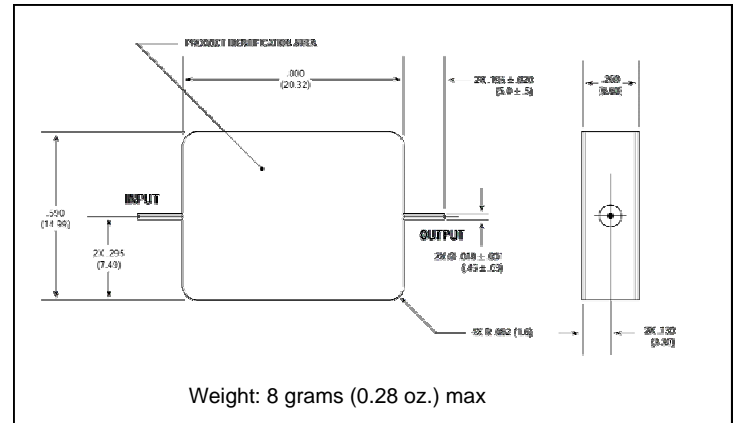
Conversion Loss vs. Input Frequency



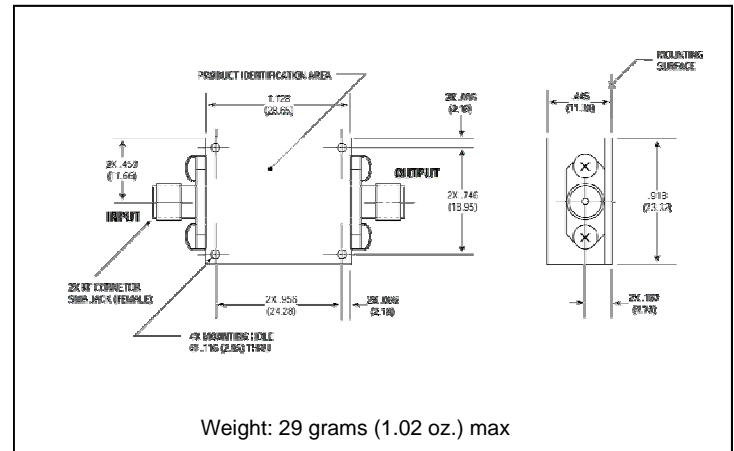
### Absolute Maximum Ratings

| Parameter             | Absolute Maximum                            |
|-----------------------|---|
| Operating Temperature | -54°C to +100°C                             |
| Storage Temperature   | -65°C to +100°C                             |
| Peak Input Power      | +26 dBm max @ +25°C<br>+23 dBm max @ +100°C |

### Outline Drawing: Versapac \*



### Outline Drawing: SMA Connectorized \*



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