# FDZ5013 / FDZ5013C



## **Frequency Doubler**

Rev. V2

#### **Features**

- Input 3 to 12 GHz
- Output 6 to 24 GHz
- Input Drive Level +13 dBm (nominal)
- Hermetically-Sealed Package

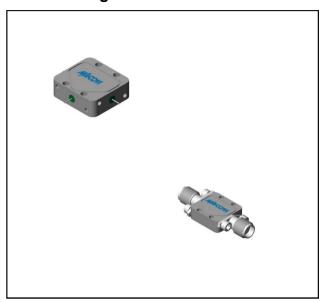
### **Description**

The FDZ5013 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.

### **Ordering Information**

Part Number	Package
FDZ5013	Versapac
FDZ5013C	SMA Connectorized

## **Product Image**



# lectrical Specifications: $Z_0 = 50\Omega$ $P_{in} = +13$ dBm

Parameter	Test Conditions	Units	Typical	pical Guaranteed	
				+25°C	-54° to +85°C
SSB Conversion Loss (max)	f <sub>in</sub> = 3 to 12 GHz	dB	12	14.5	15
Fundamental Suppression (min)	$f_{in}$ = 5 to 8 GHz $f_{in}$ = 3 to 9 GHz $f_{in}$ = 3 to 12 GHz	dBc	15.0 13.0 11.0	11.0 9.5 8.0	9.0 7.5 6.0
Third Harmonic Suppression	f <sub>in</sub> = 3.0 to 5.0 GHz f <sub>in</sub> = 5.0 to 8.5 GHz	dBc	25 22	20 17	18 15
Input VSWR	f <sub>in</sub> = 5 to 10 GHz f <sub>in</sub> = 3 to 12 GHz		1.7:1 2.0:1		

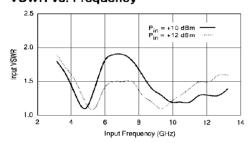


# **Frequency Doubler**

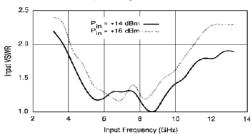
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### **Typical Performance Curves**

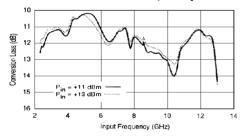
#### VSWR vs. Frequency



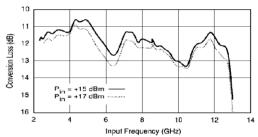
### VSWR vs. Frequency



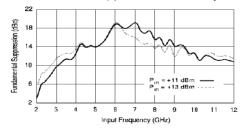
#### Conversion Loss vs. Frequency



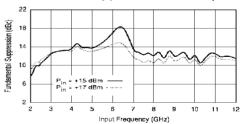
#### Conversion Loss vs. Frequency



#### Fundamental Suppression vs. Frequency



#### Fundamental Suppression vs. Frequency



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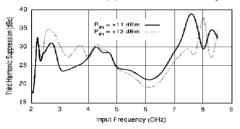
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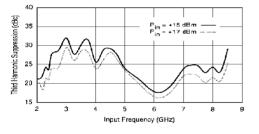
### **Absolute Maximum Ratings**

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

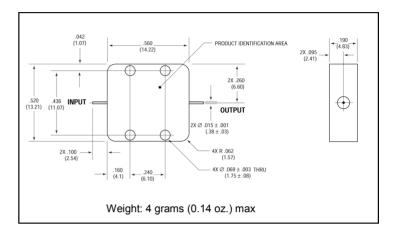
#### 3rd Harmonic Suppression vs. Frequency



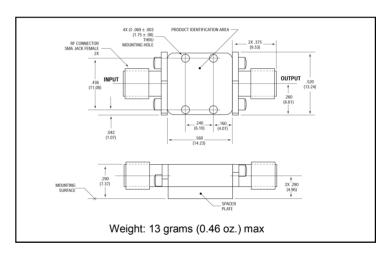
#### 3rd Harmonic Suppression vs. Frequency



# Outline Drawing: Versapac \*



# Outline Drawing: SMA Connectorized \*



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

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