FDZ5013 / FDZ5013C

Frequency Doubler



Rev. V2

Features

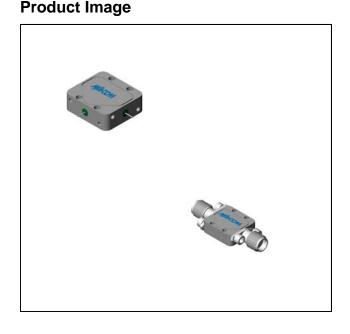
- Input 3 to 12 GHz
- Output 6 to 24 GHz
- Input Drive Level +13 dBm (nominal)
- Hermetically-Sealed Package

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 semiautomated 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



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

Parameter	Test Conditions	Units	Typical	Guaranteed	
Farameter				+25⁰C	-54º to +85ºC
SSB Conversion Loss (max)	$f_{in} = 3$ 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	$f_{in} = 3.0 \text{ to } 5.0 \text{ GHz}$ $f_{in} = 5.0 \text{ to } 8.5 \text{ GHz}$	dBc	25 22	20 17	18 15
Input VSWR	f_{in} = 5 to 10 GHz f_{in} = 3 to 12 GHz		1.7:1 2.0:1		

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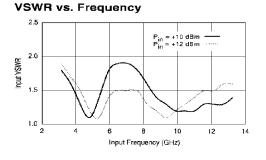
FDZ5013 / FDZ5013C

Frequency Doubler

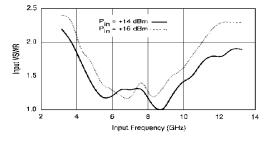


Rev. V2

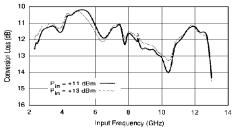
Typical Performance Curves





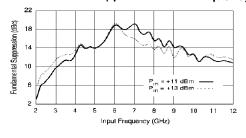


Conversion Loss vs. Frequency



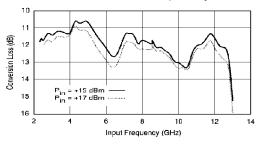
conversion Loss vs. I requency

Fundamental Suppression vs. Frequency

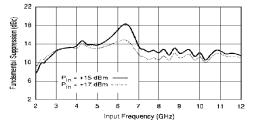


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Conversion Loss vs. Frequency



Fundamental Suppression vs. Frequency



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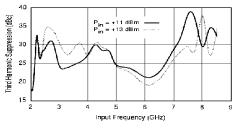


Rev. V2

Absolute Maximum Ratings

Parameter	Absolute Maximum		
Operating Temperature	-54ºC to +100ºC		
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

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Commitment to produce in volume is not guaranteed.

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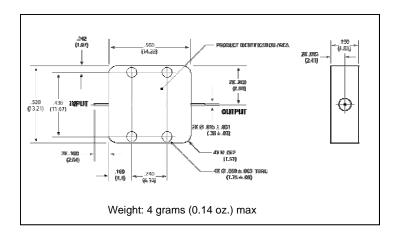
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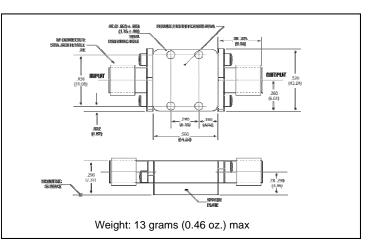
Input Frequency (GHz)

Third Harmonic Suppression (dBc)

Outline Drawing: Versapac



Outline Drawing: SMA Connectorized



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

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