

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

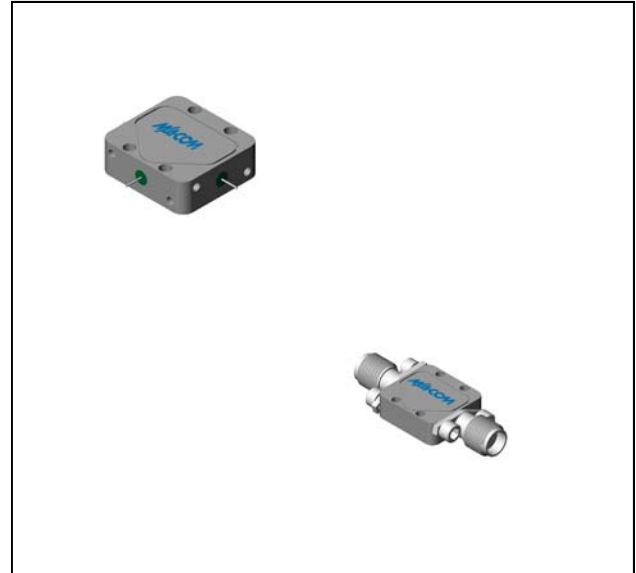
Description

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

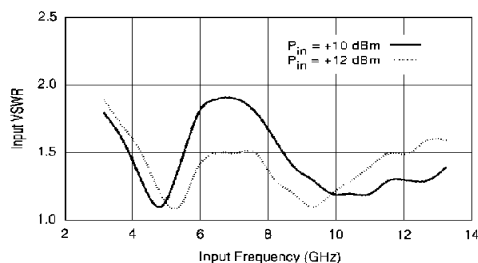


Electrical Specifications: $Z_0 = 50\Omega$ $P_{in} = +13$ dBm

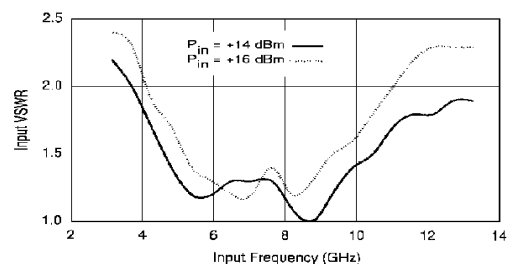
| Parameter | Test Conditions | Units | Typical | Guaranteed | |
|-------------------------------|---------------------------|-------|---------|------------|---------------|
| | | | | +25°C | -54° to +85°C |
| SSB Conversion Loss (max) | $f_{in} = 3$ to 12 GHz | dB | 12 | 14.5 | 15 |
| Fundamental Suppression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

Typical Performance Curves

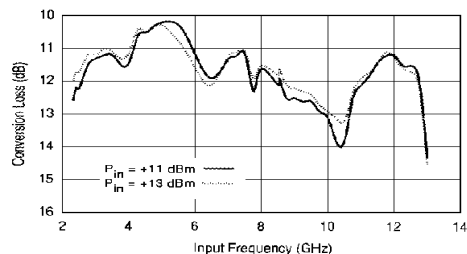
VSWR vs. Frequency



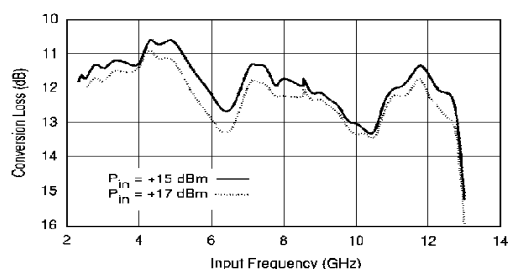
VSWR vs. Frequency



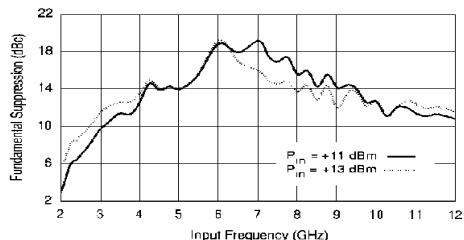
Conversion Loss vs. Frequency



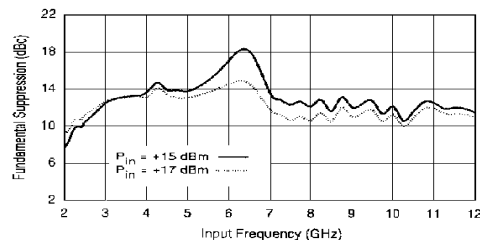
Conversion Loss vs. Frequency



Fundamental Suppression vs. Frequency



Fundamental Suppression vs. Frequency



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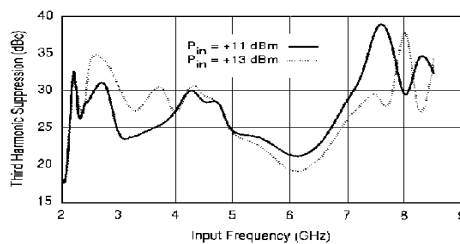
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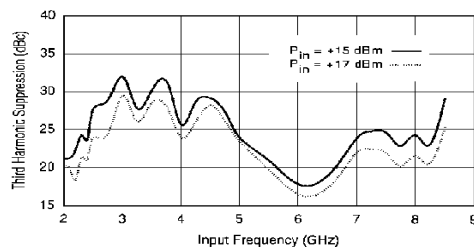
Absolute Maximum Ratings

| 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 |

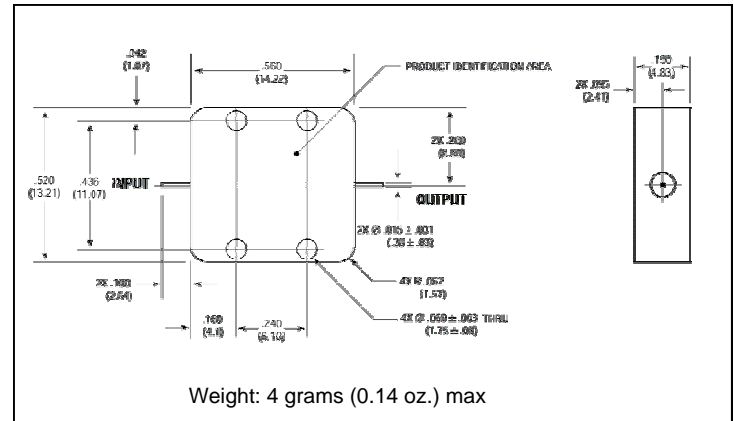
3rd Harmonic Suppression vs. Frequency



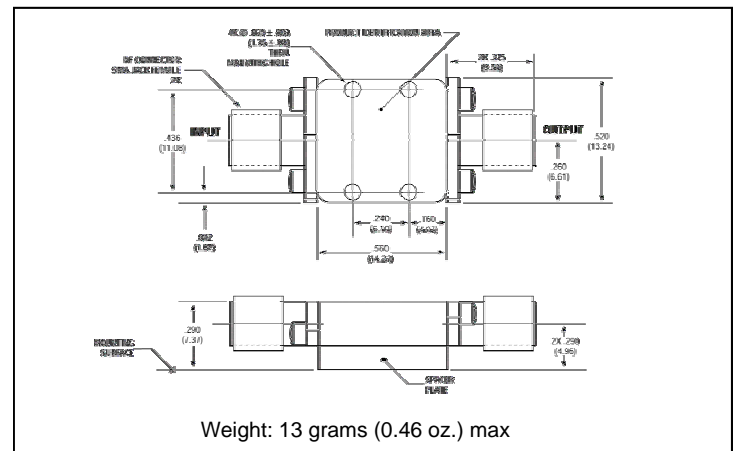
3rd Harmonic Suppression vs. Frequency



Outline Drawing: Versapac *



Outline Drawing: SMA Connectorized *



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

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