

Broadband Frequency Doubler, 150 - 3000 MHz Output

Rev. V3

Features

- n Hermetic Flatpack
- n Multioctave Frequency Coverage
- n Conversion Loss: 10 dB Midband
- n Impedance: 50 Ohms Nominal
- n Maximum Input Power: 300 mW Max.
- n MIL-STD-202 Screening Available

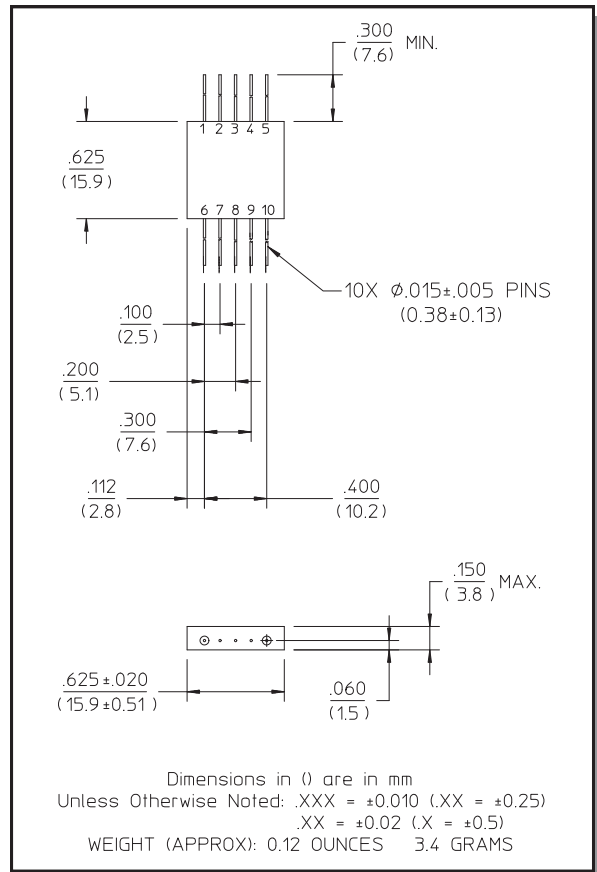
Description

A transmission line balun transformer connects to Schottky diodes arranged in a bridge configuration. This design allows balanced activation of all diodes, and yields excellent conversion loss, and odd-order term suppression.

Pin Configuration

| Pin No. | Function | Pin No. | Function |
|---------|----------|---------|----------|
| 1 | GND | 6 | GND |
| 2 | GND | 7 | GND |
| 3 | Input | 8 | Output |
| 4 | GND | 9 | GND |
| 5 | GND | 10 | GND |

FP-3



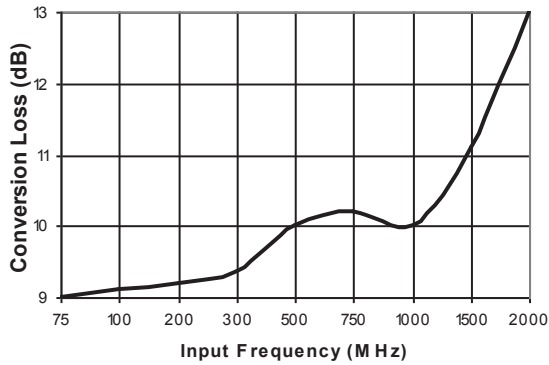
Electrical Specifications¹: T_A = -55°C to +85°C

| Parameter | Test Conditions | Frequency | Units | Min | Typ | Max |
|--|-----------------|-----------------|-------|-----|--------|-----|
| Frequency Range | Input | 75 - 1500 | MHz | — | — | — |
| | Output | 150 - 3000 | MHz | — | — | — |
| Conversion Loss | | 75 - 1000 MHz | dB | — | — | 12 |
| | | 1000 - 1500 MHz | dB | — | — | 14 |
| Spurious (Referred to Output F ₂ Level) | F ₁ | 75 - 1000 MHz | dB | 20 | — | — |
| | | 1000 - 1500 MHz | dB | 17 | — | — |
| | F ₃ | 225 - 3000 MHz | dB | 20 | — | — |
| | | 3000 - 4500 MHz | dB | 17 | — | — |
| VSWR | Input | — | Ratio | — | <2.5:1 | — |
| Conversion Loss as Quadrupler | — | — | dB | — | 26 | — |

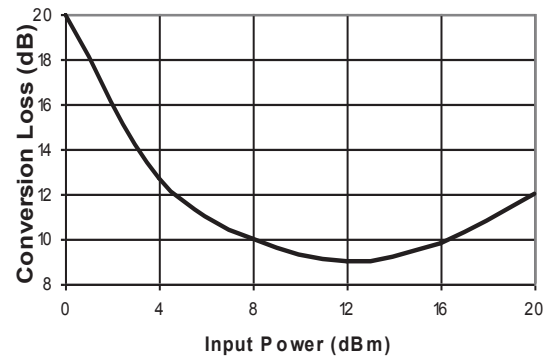
1. All specifications apply when operated at +13 dBm input power with 50 ohm source and load impedance.

Typical Performance Curves

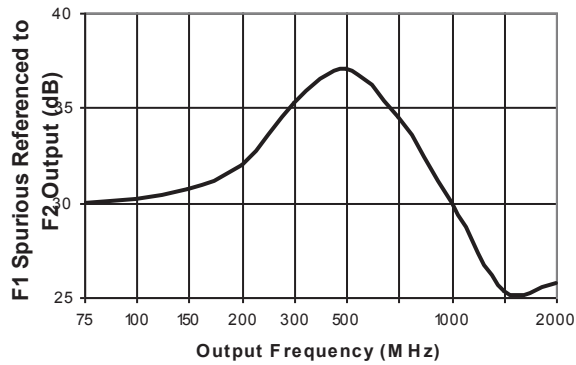
Conversion Loss



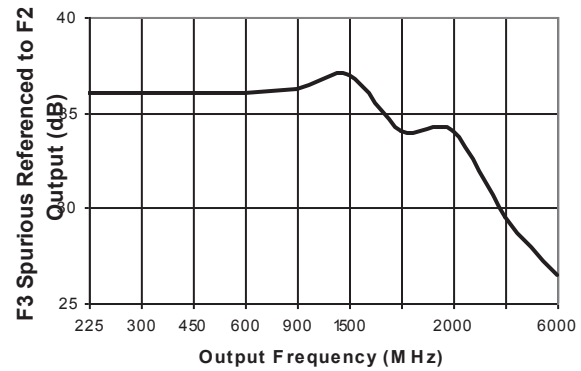
Conversion Loss vs. Input Power



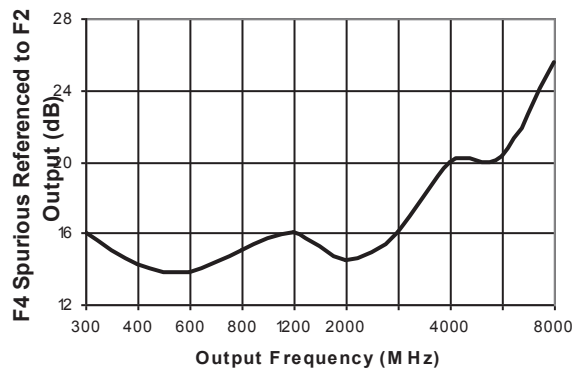
Spurious Response



Spurious Response



Spurious Response



Ordering Information

| Part Number | Package |
|-------------|---------|
| FM-104 PIN | FP-3 |

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