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

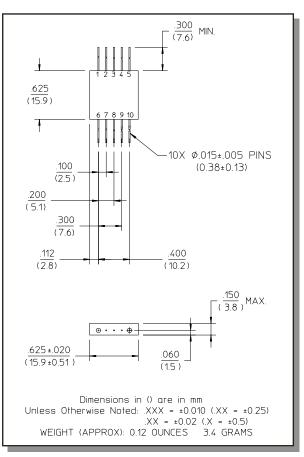
Description

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: $T_A = -55^{\circ}C$ to $+85^{\circ}C$

| Parameter | Test Conditions | Frequency | Units | Min | Тур | Мах |
|---|-----------------|-----------------------------------|------------|----------|--------|----------|
| Frequency Range | Input Output | 75 - 1500 150 - 3000 | MHz MHz | | | _ |
| Conversion Loss | | 75 - 1000 MHz 1000 - 1500 MHz | dB dB | | | 12 14 |
| Spurious (Referred to Output F ₂ Level) | F ₁ | 75 - 1000 MHz 1000 - 1500 MHz | dB dB | 20 17 | _ | _ |
| | F ₃ | 225 - 3000 MHz 3000 - 4500 MHz | dB dB | 20 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.

1

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 Europe Tel: +353.21.244.6400
 India Tel: +91.80.43537383
 China Tel: +86.21.2407.1588
- Visit www.macomtech.com for additional data sheets and product information.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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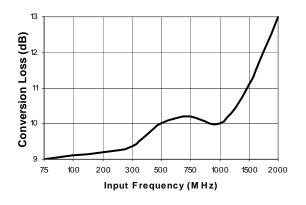
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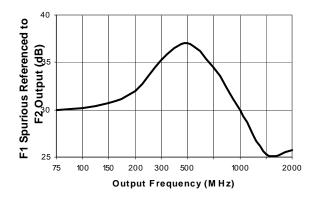
Rev. V3

Typical Performance Curves

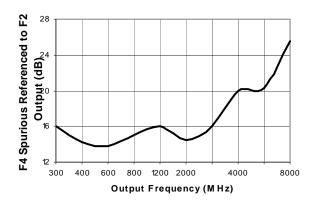
Conversion Loss



Spurious Response



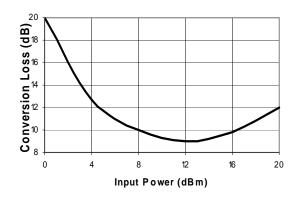
Spurious Response



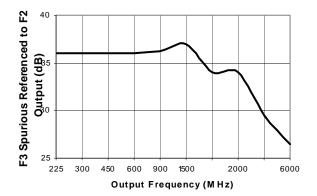
2

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Spurious Response



Ordering Information

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

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