

## Plug-In Frequency Doubler, 20 - 1500 MHz Output

Rev. V3

#### **Features**

Relay Header Case

Multioctave Frequency Coverage Conversion Loss: 12 dB Midband

Impedance: 50 Ohms Nominal

Maximum Input Power: 300 mW Max.

MIL-STD-883 Screening Available

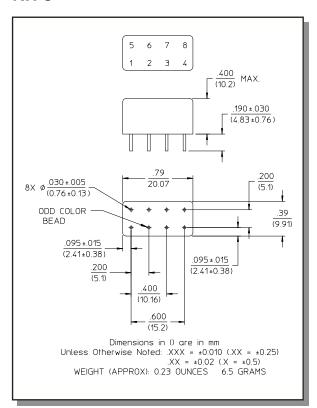
## **Description**

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       | Input    | 5       | GND      |  |
| 2       | GND      | 6       | GND      |  |
| 3       | GND      | 7       | GND      |  |
| 4       | GND      | 8       | Output   |  |

### RH-3



# Electrical Specifications<sup>1</sup>: $T_A = -55$ °C to +85°C

| Parameter   | Test Conditions | Frequency  | Units                 | Min                  | Тур              | Max              |
|---|-----------------|--|-----------------------|----------------------|------------------|------------------|
| Frequency Range                                       | Input<br>Output | 10 - 750<br>20 - 1500  | MHz<br>MHz            | _                    | _                | _                |
| Conversion Loss                                       |                 | 10 - 500 MHz<br>500 - 750 MHz                                      | dB<br>dB              | _                    | _                | 14.5<br>15.5     |
| Spurious (Referred to<br>Output F <sub>2</sub> Level) | F <sub>1</sub>  | 10 - 100 MHz<br>100 - 300 MHz<br>300 - 500 MHz<br>500 - 750 MHz    | dB<br>dB<br>dB<br>dB  | 25<br>20<br>15<br>10 |                  | _<br>_<br>_<br>_ |
|   | F <sub>3</sub>  | 30 - 300 MHz<br>300 - 900 MHz<br>900 - 1500 MHz<br>1500 - 2250 MHz | dB<br>dB<br>dB<br>dB+ | 35<br>30<br>25<br>20 | _<br>_<br>_<br>_ | _<br>_<br>_<br>_ |
| VSWR  | Input           | _  | Ratio                 | _                    | <2.0:1           | _                |
| Conversion Loss as<br>Quadrupler                      | _               | _  | dB                    | _                    | 30               | _                |

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

1

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

<sup>•</sup> North America Tel: 800.366.2266 • Europe Tel: +353.21.244.6400

<sup>•</sup> **India** Tel: +91.80.43537383 Visit www.macomtech.com for additional data sheets and product information.

<sup>•</sup> China Tel: +86.21.2407.1588

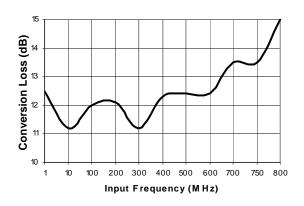


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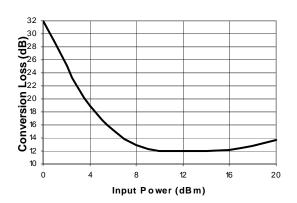
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## **Typical Performance Curves**

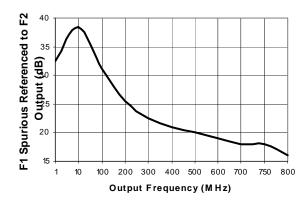
#### **Conversion Loss**



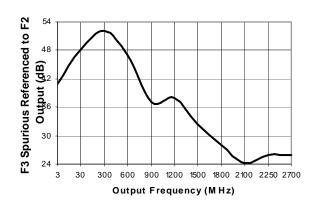
### Conversion Loss vs. Input Power



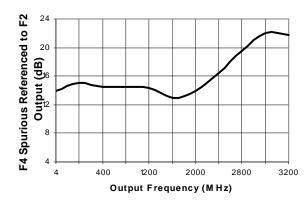
### Spurious Response



### Spurious Response



### Spurious Response



## **Ordering Information**

| Part Number | Package |  |  |
|-------------|---------|--|--|
| FM-105 PIN  | RH-3    |  |  |

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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