

## Broadband Frequency Doubler 10 - 4800 MHZ Output

Rev. V5

### Features

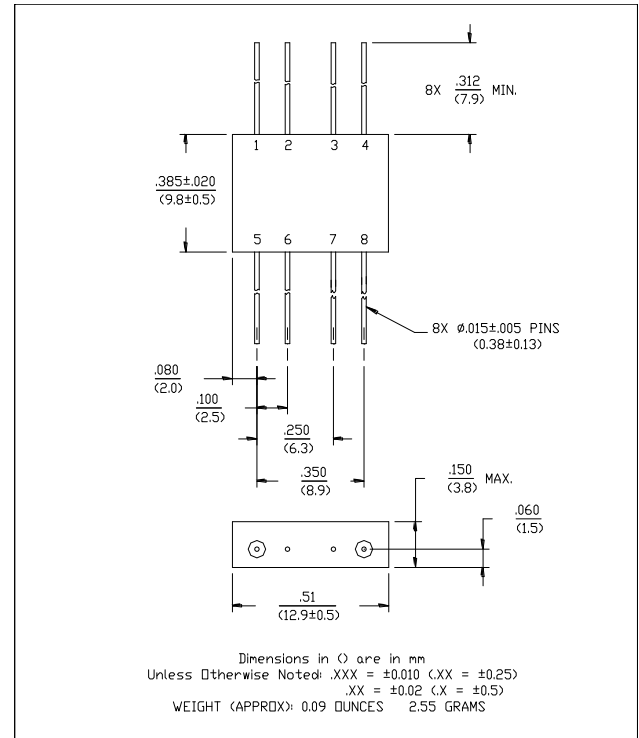
- Operates Over Full AMPS/PCN PCS/PHS Bands
- Low Conversion Loss
- Two Hermetic Package Options
- Typical Midband VSWR 1.5:1
- High Fundamental and Third Order Suppression

### Description

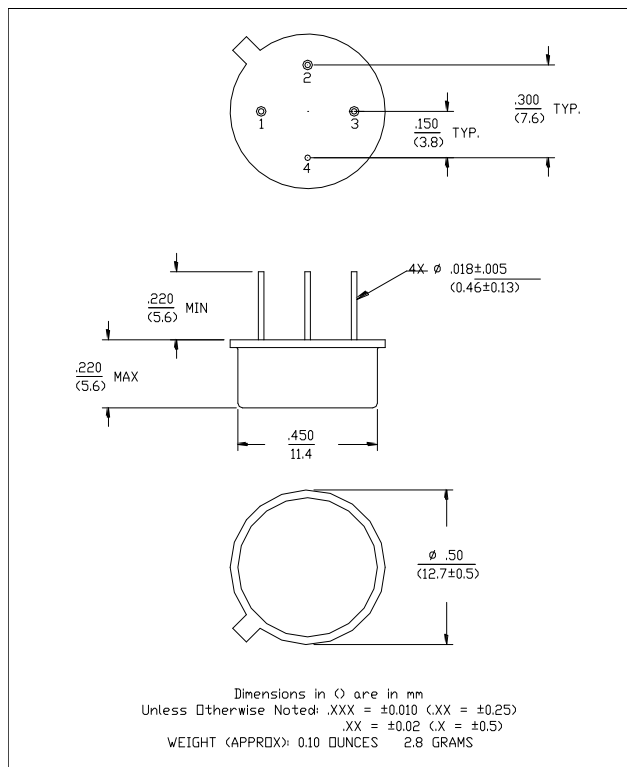
The FM-107, FM-108 and FMS-109 are broadband RF frequency doublers. These devices are available in three hermetic packages and offer excellent frequency multiplication performance, flat conversion loss and high spurious signal rejection.

The FM-107, FM-108 and FMS-109 offer affordable solutions to system applications where frequency multiplication is required.

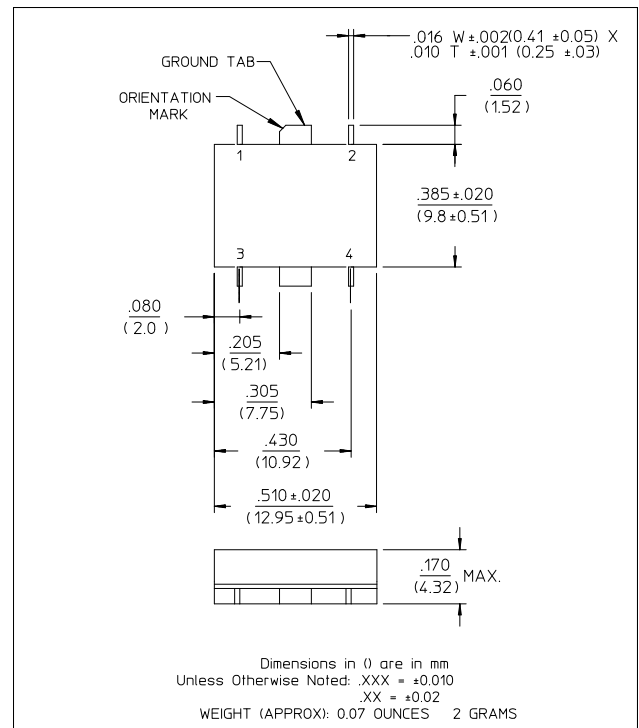
### FP-2 (FM-107)



### TO-8-1 (FM-108)



### SF-1 (FMS-109)



## Broadband Frequency Doubler 10 - 4800 MHz Output

Rev. V5

**Electrical Specifications:  $T_A = 25^\circ\text{C}$ , Input Frequency: 5-2400 MHz,  
Output Frequency: 10-4800 MHz, Input Power: +10 dBm**

Parameter	Test Conditions	Frequency	Units	Min.	Typ.	Max.
Conversion Loss	Input: +10 dBm		dB	—	11	13
F1 Suppression	Input: +10 dBm	5-750 MHz	dB	30	40	—
		750-1000 MHz	dB	25	30	—
		1000-2400 MHz	dB	20	25	—
F3 Suppression	Input: +10 dBm	15-1500 MHz	dB	35	40	—
		1500-3000 MHz	dB	25	35	—
		3000-7200 MHz	dB	20	25	—
VSWR	Input: +10 dBm		Ratio	—	1.5:1	2.0:1
Loss as Quadrupler	Input: +10 dBm		dB	—	27	—

### Pin Configuration (FM-107)

Pin No.	Function	Pin No.	Function
1	GND	5	GND
2	GND	6	GND
3	GND	7	GND
4	RF IN	8	RF OUT

### Pin Configuration (FM-108)

Pin No.	Function	Pin No.	Function
1	RF IN	3	RF OUT
2	N/C	4	GND

### Pin Configuration (FMS-109)

Pin No.	Function	Pin No.	Function
1	GND	3	GND
2	RF OUT	4	RF IN

### Absolute Maximum Ratings <sup>1</sup>

Parameter	Absolute Maximum
Max Input Power <sup>2</sup>	
Total Power	300 mW Max. Derated to 85°C @ 3.2 mW/°C

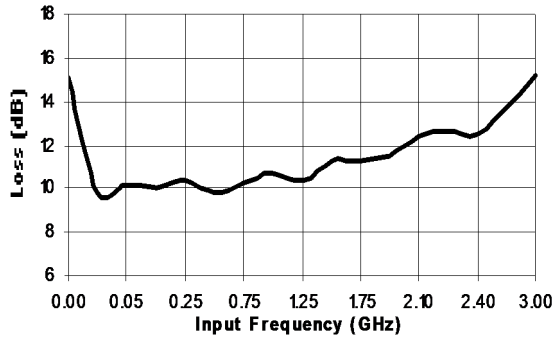
1. Operation of this device above any one of these parameters may cause permanent damage.
2. Ambient Temperature ( $T_A$ ) = +25°C

### Ordering Information

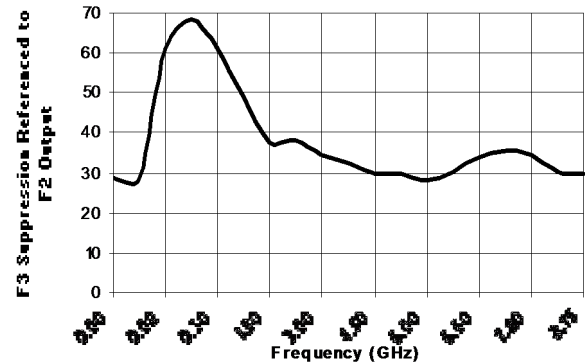
Part Number	Package
FM-107-PIN	Hermetic Flatpack Package (FP-2)
FM-108-PIN	Hermetic Package (TO-8-1)
FMS-109-PIN	Hermetic Surface Mount package (SF-1)

## Typical Performance Curves

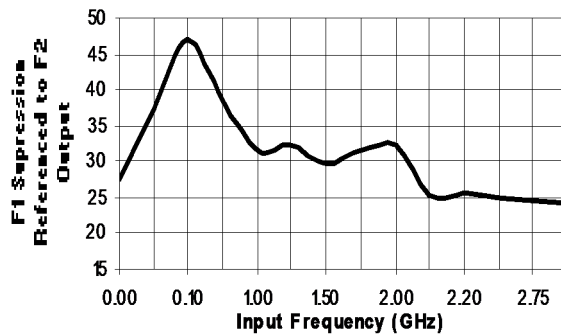
*Conversion Loss vs. Input Freq.*



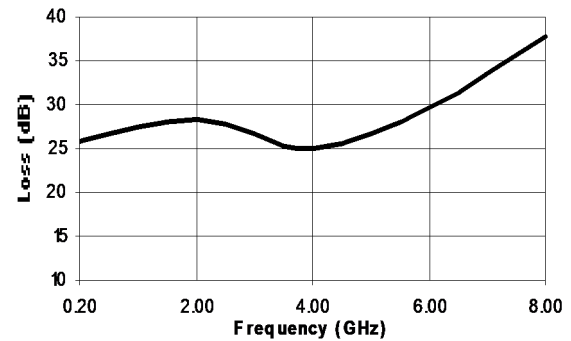
*Spurious Response: F3 Suppression*



*Spurious Response: F1 Suppression*



*Loss as a Quadrupler*



M/A-COM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with M/A-COM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.