Broadband Frequency Doubler, 10 - 4800 MHz Output

V 5

FM-107/FM-108/FMS-109

Features

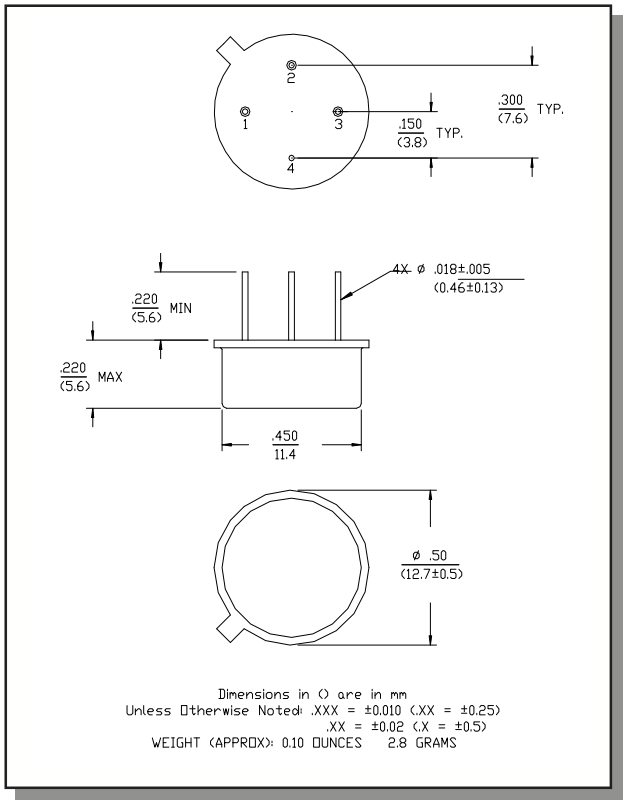
- Operates Over Full AMPS/PCN PCS/PHS Bands
- Low Conversion Loss
- Two Hermetic Package Options
- Typical Midband VSWR 1.5:1
- High Fundamental and Third Order Suppression

Description

M/A-COM's 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.

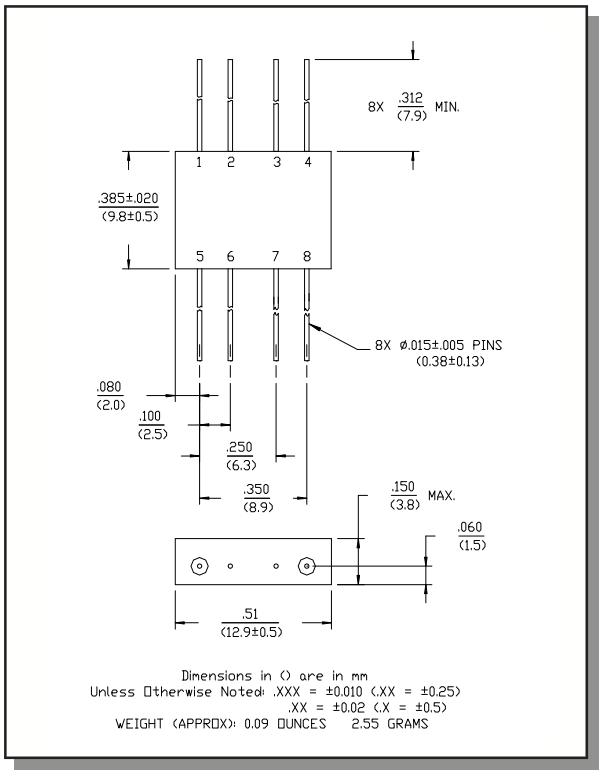
The FM-107, FM-108 and FMS-109 offer affordable solutions to system applications where frequency multiplication is required.

TO-8-1 (FM-108)



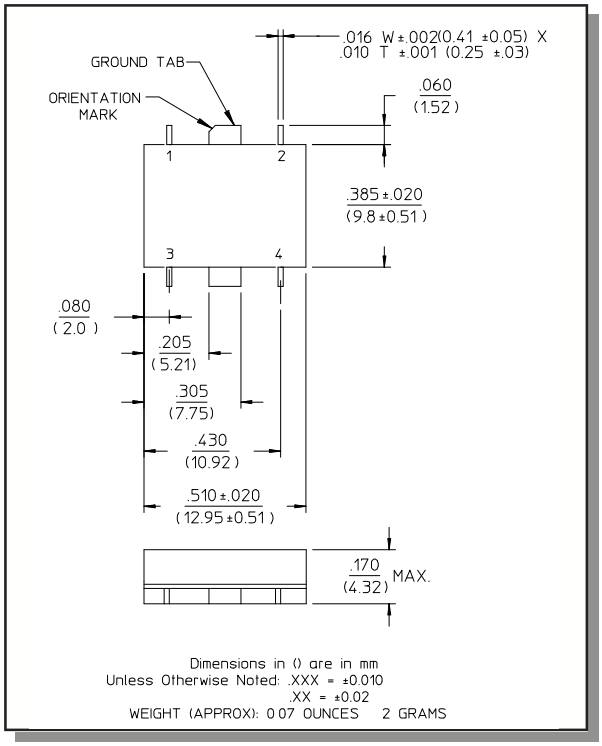
Dimensions in () are in mm
Unless Otherwise Noted: .XXX = ±0.010 (.XX = ±0.25)
.XX = ±0.02 (.X = ±0.5)
WEIGHT (APPROX): 0.10 OUNCES 2.8 GRAMS

FP-2 (FM-107)



Dimensions in () are in mm
Unless Otherwise Noted: .XXX = ±0.010 (.XX = ±0.25)
.XX = ±0.02 (.X = ±0.5)
WEIGHT (APPROX): 0.09 OUNCES 2.55 GRAMS

SF-1 (FMS-109)



Dimensions in () are in mm
Unless Otherwise Noted: .XXX = ±0.010
.XX = ±0.02
WEIGHT (APPROX): 0.07 OUNCES 2 GRAMS

Electrical Specifications: T_A = 25°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 750-1000 MHz 1000-2400 MHz	dB dB dB	30 25 20	40 30 25	— — —
F3 Suppression	Input: +10 dBm	15-1500 MHz 1500-3000 MHz 3000-7200 MHz	dB dB dB	35 25 20	40 35 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 [1]

Parameter	Absolute Maximum
Max Input Power [2]	
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

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■ **Europe:** Tel. +44 (1344) 869 595, Fax+44 (1344) 300 020

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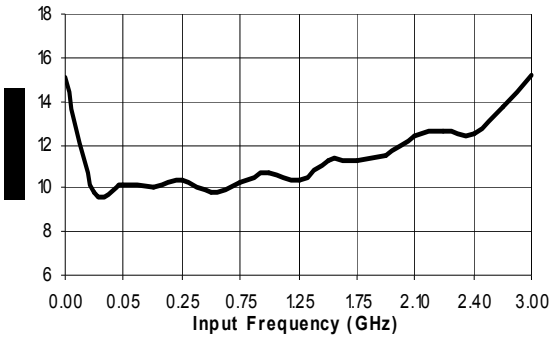
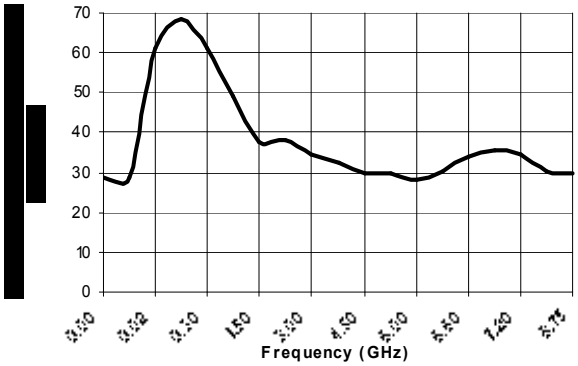
Typical Performance Curves

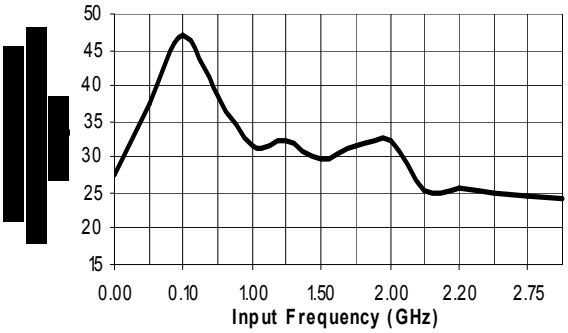
Conversion Loss vs. Input Freq.



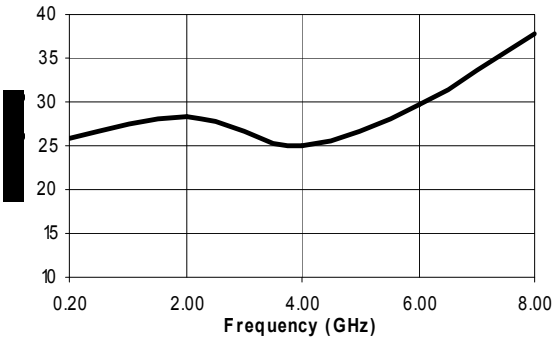
Spurious Response: F3 Suppression



Spurious Response: F1 Suppression



Loss as a Quadrupler



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)

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