

Frequency Doubler

Rev. V5

Features

- Input 5 - 2400 MHz
- Output 10 - 4800 MHz
- Input Drive Level = 10 dBm (nominal)
- Hermetically-Sealed Package

Description

The FD25 is a passive bridge diode frequency doubler, designed for use in military, commercial and test equipment applications. The design utilizes Schottky bridge quad diodes and broadband soft dielectric and/or ferrite baluns to attain excellent performance. The use of high temperature solder assembly processes used internally makes it ideal for use in manual and semi-automated assembly. Environmental screening available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.



TO-8



Flatpack



Surface Mount



SMA Connectorized

Electrical Specifications: $Z_0 = 50 \Omega$, $P_{IN} = 10 \text{ dBm}$

Parameter	Test Conditions Input Frequency (MHz)	Units	Typical	Guaranteed	
			+25°C	+25°C	-54°C - +85°C ¹
SSB Conversion Loss (max.)	5 - 30	dB	12.0	13.0	15.0
	30 - 2400		11.5	13.0	13.5
Fundamental Suppression (min.)	5 - 1000	dBc	35	25	23
	1000 - 2000		25	20	18
	2000 - 2400		20	16	14
Third Harmonic Suppression	5 - 500	dBc	50	40	38
	500 - 1000		40	30	28
	1000 - 2400		35	25	23
Input VSWR	5 - 2400	ratio	1.5:1	—	—

1. The FD25C specification limits apply at 0°C to +50°C.

Ordering Information

Part Number	Package
FD25	TO-8
FD25C	SMA Connectorized
FD25E	Flatpack
SFD25	Surface Mount

Absolute Maximum Ratings

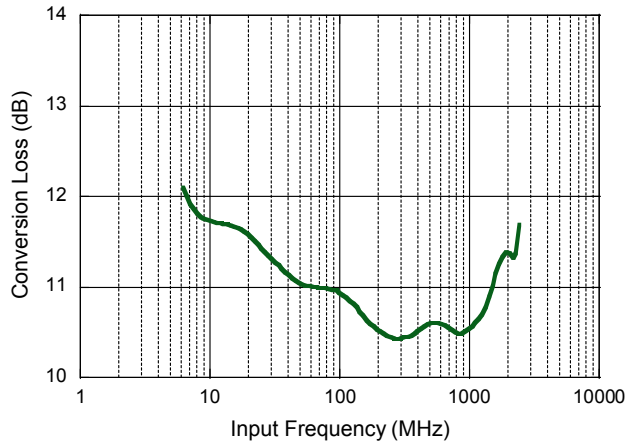
Parameter	Absolute Maximum
Peak Input Power	23 dBm @ +25°C 20 dBm @ +100°C
Peak Input Current	50 mA DC
Operating Temperature	-54°C to +100°C
Storage Temperature	-65°C to +100°C

Frequency Doubler

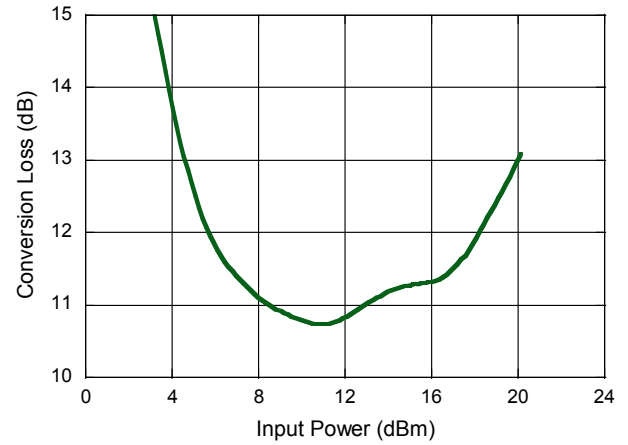
Rev. V5

Typical Performance Curves

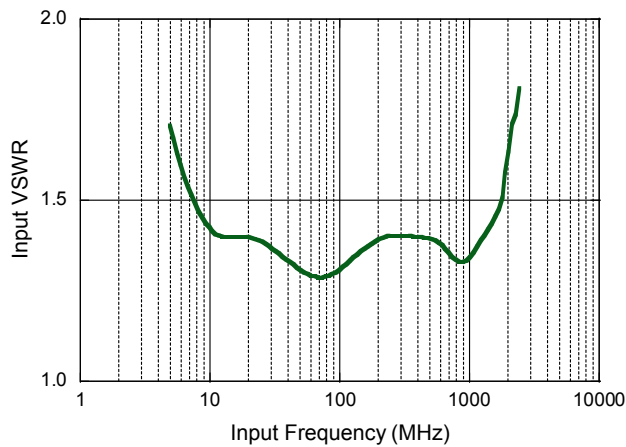
Conversion Loss vs. Input Frequency ($P_{IN} = 10$ dBm)



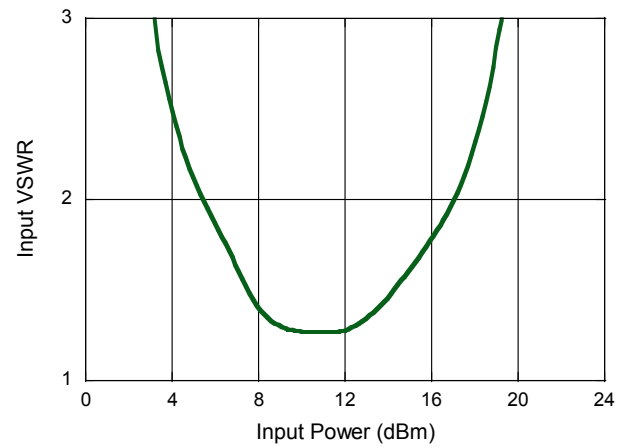
Conversion Loss vs. Input Power



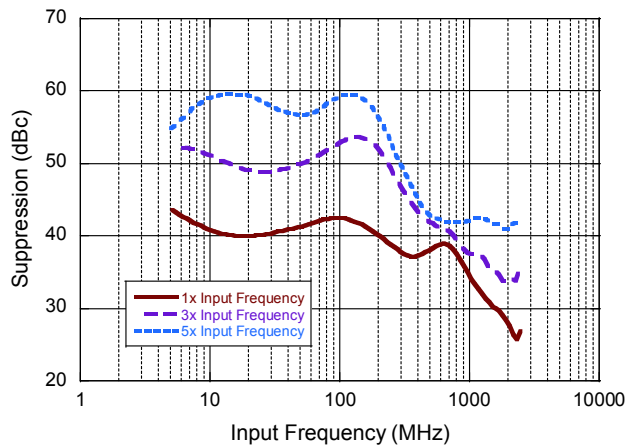
Input VSWR vs. Input Frequency ($P_{IN} = 10$ dBm)



Input VSWR vs. Input Power



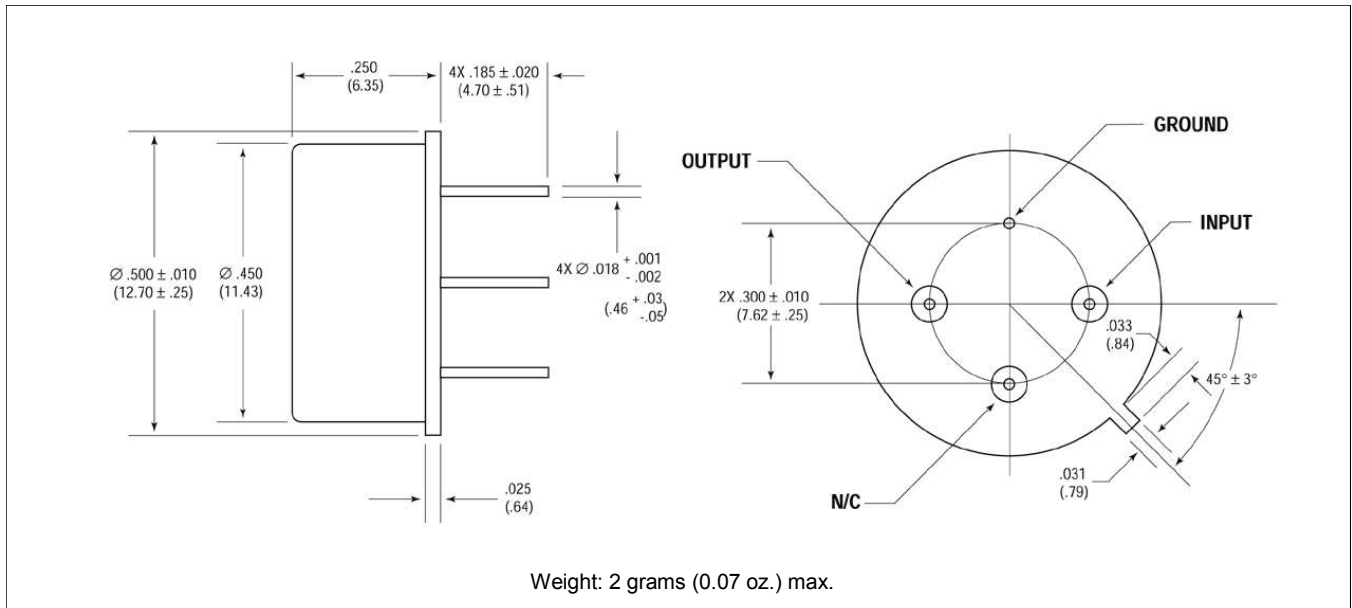
Suppression vs. Input Frequency



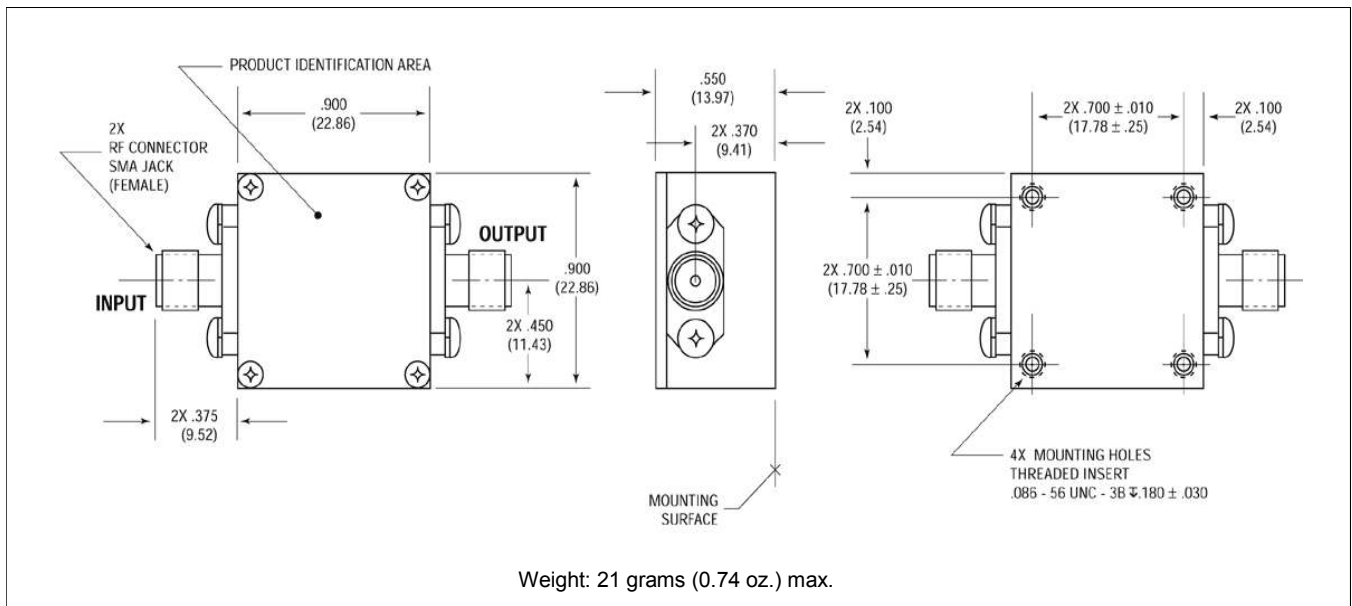
Frequency Doubler

Rev. V5

Outline Drawing*: TO-8

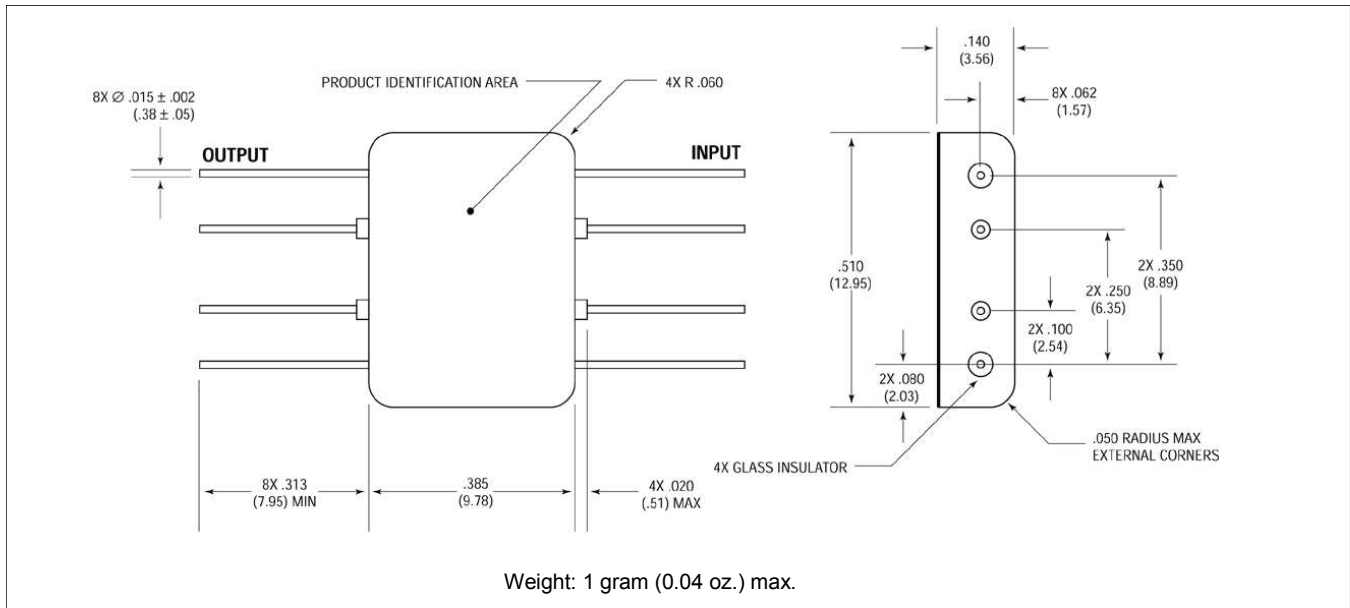


Outline Drawing*: SMA Connectorized

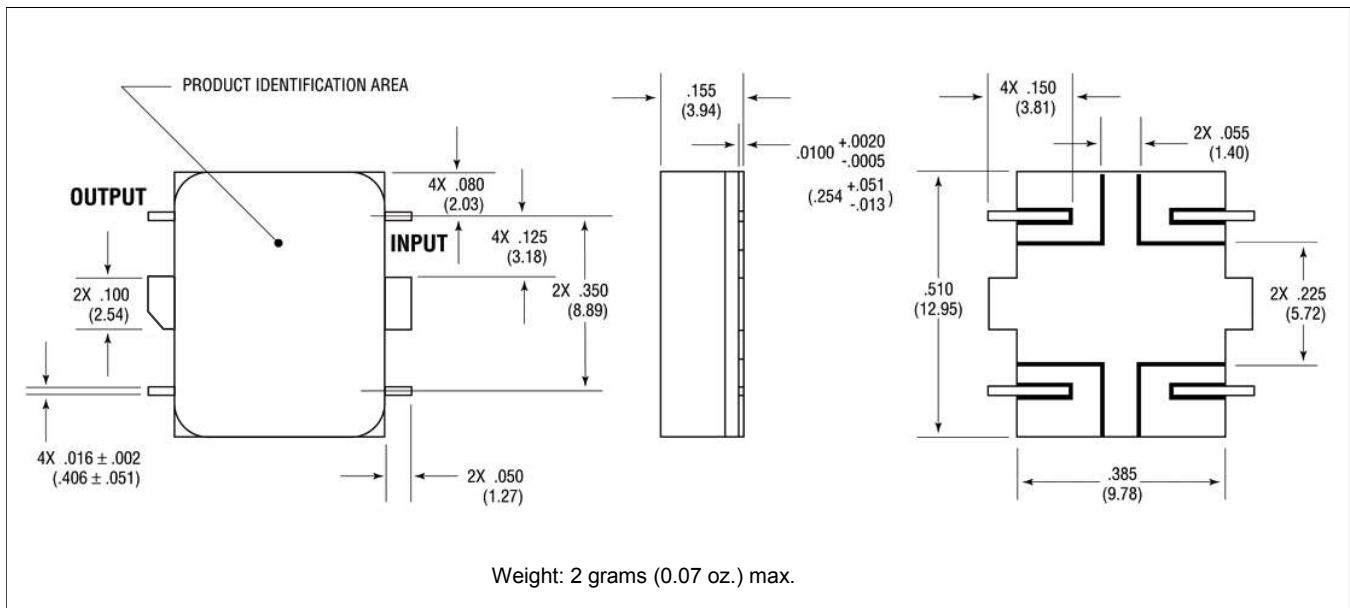


* Dimensions are inches (millimeters) ± 0.015 (0.38) unless otherwise specified.

Outline Drawing*: Flatpack



Outline Drawing*: Surface Mount



* Dimensions are inches (millimeters) ± 0.015 (0.38) unless otherwise specified.

MACOM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with MACOM 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.