

Frequency Doubler

Rev. V4

Features

- Input 5 - 2400 MHz
- Output 10 - 4800 MHz
- Input Drive Level = 23 dBm (nominal)
- Hermetically-Sealed Package

Description

The FD25H is a passive bridge diode frequency doubler, designed for use in the high volume commercial and test equipment applications. The design utilizes Schottky bridge quad diodes and broadband baluns to attain excellent performance. The use of high temperature solder and welded assembly processes used internally makes it ideal for use in semi-automated and 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: $Z_0 = 50 \Omega$, $P_{IN} = 23 \text{ dBm}$

Parameter	Test Conditions Input Frequency (MHz)	Units	Typical	Guaranteed	
			+25°C	+25°C	-54°C - +85°C ¹
SSB Conversion Loss (max.)	5 - 2400	dB	12.0	13.5	13.8
Fundamental Suppression (min.)	5 - 1000	dBc	35	25	24
	1000 - 2000		25	20	19
	2000 - 2400		20	16	15
Third Harmonic Suppression	5 - 500	dBc	40	30	29
	500 - 2400		35	25	24
Input VSWR	5 - 2400	ratio	1.5:1	—	—

1. The FD25HC specification limits apply at 0°C to +50°C.

Ordering Information

Part Number	Package
FD25H	TO-8
FD25HC	SMA Connectorized
SFD25H	Surface Mount
MAUC-010499-SFD25H	Surface Mount Screened

Absolute Maximum Ratings

Parameter	Absolute Maximum
Peak Input Power	27.6 dBm @ +25°C 25.0 dBm @ +100°C
Peak Input Current	50 mA DC
Operating Temperature	-54°C to +100°C
Storage Temperature	-65°C to +100°C

Typical Performance Curves

Conversion Loss vs. Input Frequency ($P_{IN} = 23 \text{ dBm}$)



Conversion Loss vs. Input Power



Input VSWR vs. Input Frequency ($P_{IN} = 23 \text{ dBm}$)



Suppression vs. Input Frequency



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) \pm 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.