# FD25 / FD25C / FD25E / SFD25



# Frequency Doubler

Rev. V4

#### **Features**

- Input 5 to 2400 MHz
- Output 10 to 4800 MHz
- Input Drive level +10 dBm (nominal)
- Hermetically-Sealed Package

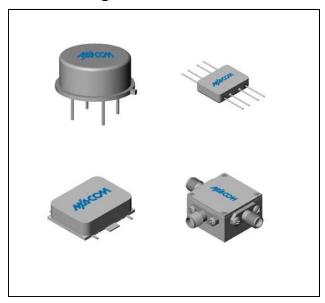
### **Description**

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.

### **Ordering Information**

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

### **Product Image**



## Electrical Specifications: $Z_0 = 50\Omega$ $P_{in} = +10$ dBm

_	Test Conditions	Units	Typical	Guaranteed	
Parameter				+25°C	-54º to +85ºC*
SSB Conversion Loss (max)	$f_{in}$ = 5 to 30 MHz $f_{in}$ = 30 to 2400 MHz	dB	12.0 11.5	13.0 13.0	15.0 13.5
Fundamental Suppression (min)	$f_{in} = 5 \text{ to } 1000 \text{ MHz}$ $f_{in} = 1000 \text{ to } 2000 \text{ MHz}$ $f_{in} = 2000 \text{ to } 2400 \text{ MHz}$	dBc	35 25 20	25 20 16	23 18 14
Third Harmonic Suppression	$f_{in} = 5 \text{ to } 500 \text{ MHz}$ $f_{in} = 500 \text{ to } 1000 \text{ MHz}$ $f_{in} = 1000 \text{ to } 2400 \text{ MHz}$	dBc	50 40 35	40 30 25	38 28 23
Input VSWR	f <sub>in</sub> = 5 to 2400 MHz		1.5:1		

<sup>\*</sup> The FD25C specification limits apply at 0°C to +50°C.

Commitment to produce in volume is not guaranteed.

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

<sup>•</sup> India Tel: +91.80.4155721

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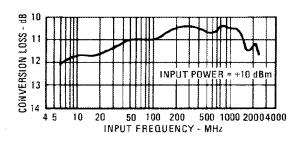


# **Frequency Doubler**

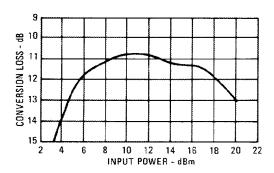
Rev. V4

### **Typical Performance Curves**

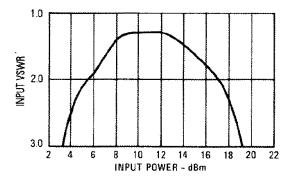
#### Conversion Loss vs. Frequency



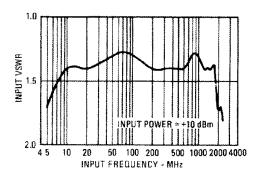
#### Conversion Loss vs. Input Power



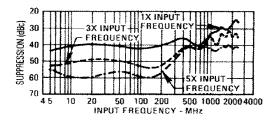
#### Input VSWR vs. Input Power



#### Input VSWR vs. Input Frequency



#### Suppression vs. Input Frequency



- is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed. 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. M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make Commitment to produce in volume is not guaranteed.
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  - India Tel: +91.80.4155721 • China Tel: +86.21.2407.1588 Visit www.macomtech.com for additional data sheets and product information.

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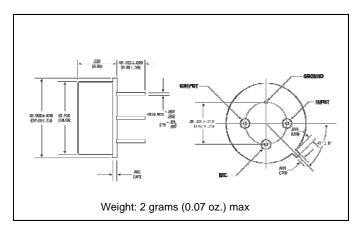
## **Frequency Doubler**

Rev. V4

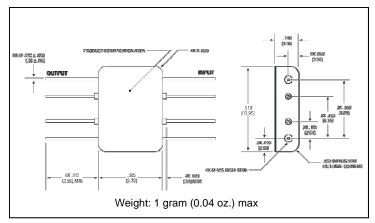
### **Absolute Maximum Ratings**

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

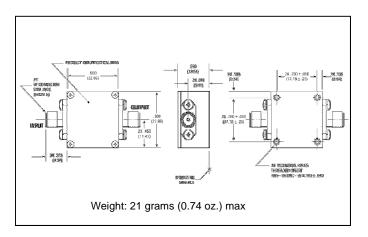
### Outline Drawing: TO-8



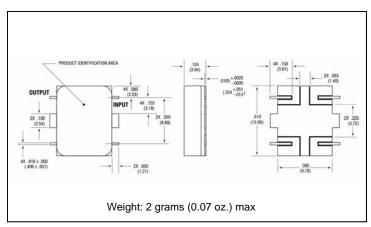
## Outline Drawing: Flatpack \*



# Outline Drawing: SMA Connectorized \*



## Outline Drawing: Surface Mount



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

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