

# Frequency Doubler

## High Isolation, In-line Output

# Model FD9xMS-1

Input 2.0 to 10.0 GHz  
Output 4.0 to 20.0 GHz

### Electrical Specifications <sup>(1)</sup>:

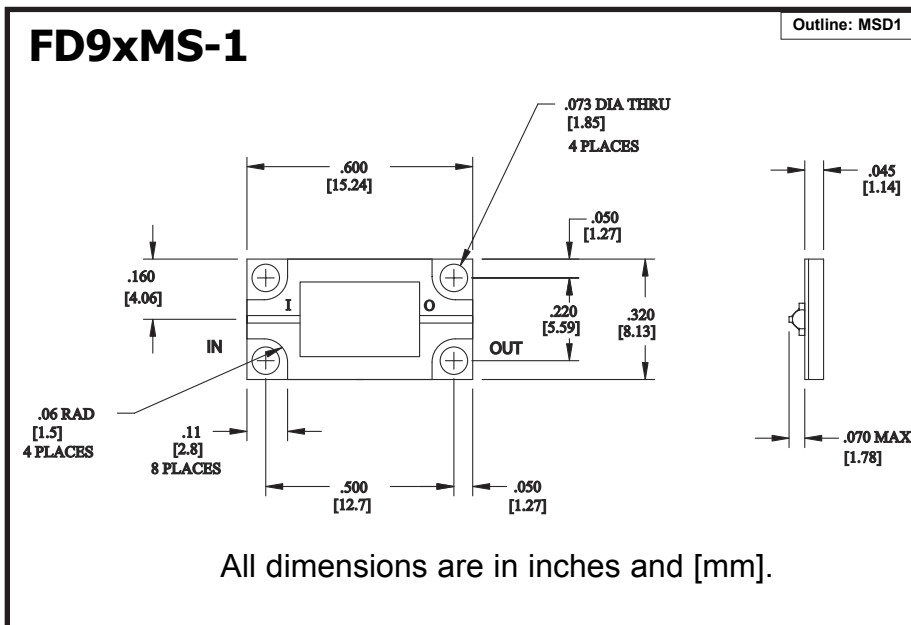
Parameter	Conditions		Specifications		
	Input (GHz)	Output (GHz)	Min	Typical	Max
Insertion Loss: <sup>(2)</sup>	2.0-9.0	4.0-18.0		11.0 dB	13.0 dB
	1.5-10.0	3.0-20.0		11.5 dB	15.0 dB
Fundamental Isolation: <sup>(3)</sup>	2.0-10.0	2.0-10.0	25 dB	33 dB	
Third Harmonic Suppression: <sup>(4)</sup>	2.0-7.0	6.0-21.0	20 dBc	33 dBc	
Input VSWR:	1.5-5.0	3.0-10.0		2.2:1	
	5.0-10.0	10.0-20.0		1.75:1	
Input Power:	1.5-10.0	3.0-20.0		+11 dBm	FD96
				+17 dBm	FD97

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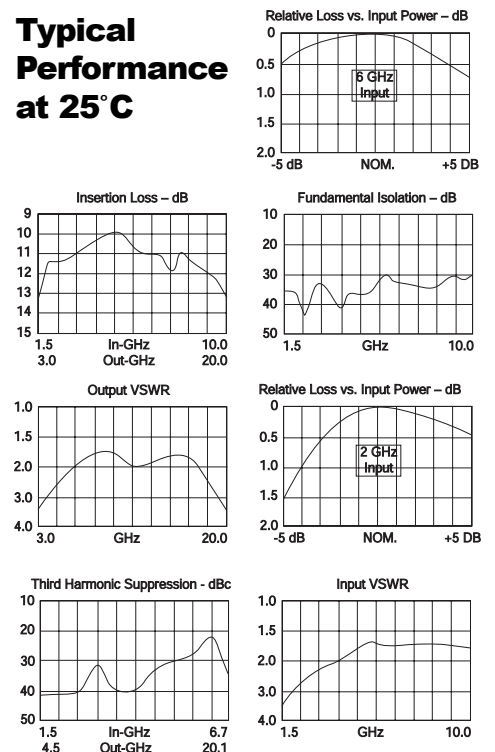
**Input Power**  
6 = +11 dBm  
7 = +17 dBm

#### Notes:

- Specifications are guaranteed when tested as a doubler in a 50 Ohm system at +25 °C with nominal input power. Specifications indicated as typical are not guaranteed.
- Insertion loss typically degrades less than 0.5 dB at +100°C and improves less than 0.5 dB at -55°C.
- Fundamental isolation is referenced to the fundamental input.
- Third Harmonic Suppression is referenced to the second harmonic output.



### Typical Performance at 25 °C



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