

# FREQUENCY DOUBLER

## MODEL FD9xxN-1

Available as: FD9xxN-1, Connectorized Housing (ND)  
 FD9xMN-1, Without Connectors  
 FD9xPN-1, With Removable Connectors

### Features

- Input Power: +11 dBm
- Operating Temperature: -55 °C to +85°C

**RF Input: 1.5 to 10.0 GHz**  
**RF Output: 3.0 to 20.0 GHz**

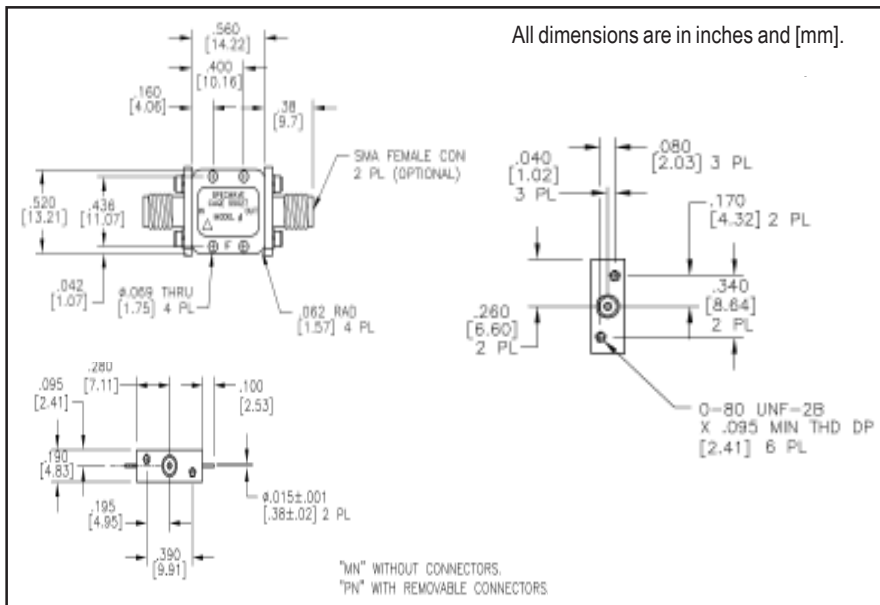
### Electrical Specifications<sup>(1)</sup>:

Parameter	Conditions		Specifications		
	Input (GHz)	Output (GHz)	Min	Typical	Max
Insertion Loss: <sup>(2)</sup>	2.5 - 9.0	5.0 - 18.0	—	11.0 dB	12.5 dB
	1.5 - 10.0	3.0 - 20.0	—	12.0 dB	14.0 dB
Fundamental Isolation: <sup>(3)</sup>	1.5 - 7.0	1.5 - 7.0	22 dB	30 dB	—
Third Harmonic Suppression: <sup>(4)</sup>	7.0 - 10.0	7.0 - 10.0	19 dBc	25 dBc	—
	1.5 - 10.0	3.0 - 20.0	20 dBc	33 dBc	—
Input VSWR:	1.5 - 5.0	3.0 - 10.0	—	2.0:1	—
	5.0 - 10.0	10.0 - 20.0	—	1.5:1	—
Input Power Range:	1.5 - 10.0	3.0 - 10.0	—	+11 dBm	FD96
	—	—	—	+17 dBm	FD97

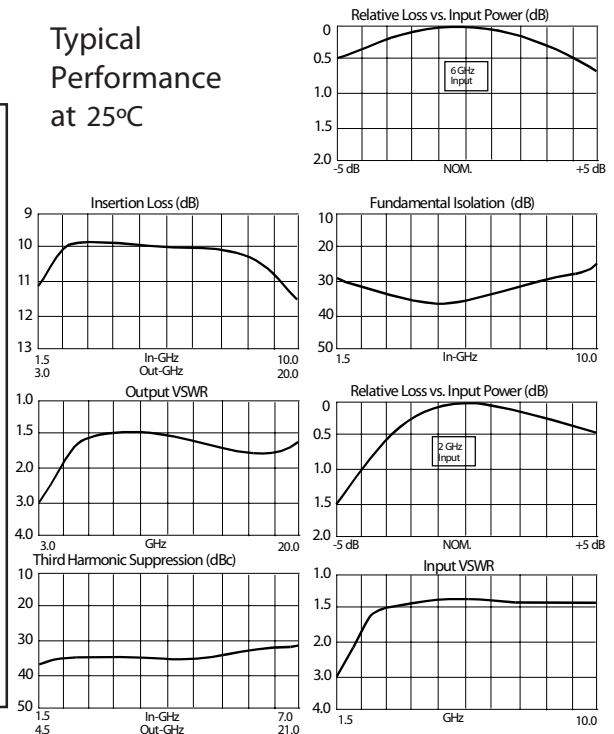
### Notes:

- Specifications are guaranteed when tested as a doubler in a 50 Ohm system at +25°C with the 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.

### Case Outline (FD9xxN-1)



### Typical Performance at 25°C



Spectrum Microwave · 2144 Franklin Drive N.E. · Palm Bay, FL 32905 · PH (888) 553-7531 · Fax (888) 553-7532 12/21/05

www.SpectrumMicrowave.com Spectrum Microwave (Europe) · 2707 Black Lake Place · Philadelphia, PA 19154 · PH (215) 464-4000 · Fax (215) 464-4001