SWD-2040H-22-SB

Rev. 1.2

Q-Band Waveguide Directional Coupler, 20 dB

Description:

Model SWD-2040H-22-SB is a Q band, three-port waveguide directional coupler that delivers a 20 dB nominal coupling level and 35 dB minimum directivity across the full waveguide band from 33 to 50 GHz. The three-port coupler uses a traditional multi-hole and split block design to a achieve flat coupling level, high directivity, and low insertion loss. The interfaces of the coupler are WR-22 waveguides with UG-383/U anti-cocking flanges. Custom coupling levels are available under different model numbers.

Features:

- Full Band Operation
- Low Insertion Loss
- High Directivity

Applications:

- Test Labs
- Instrumentation
- Sub-assemblies

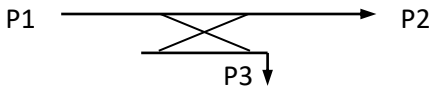
Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	33 GHz		50 GHz
Insertion Loss*		0.6 dB	
Coupling*		20 dB	
Directivity*	35 dB		
VSWR			1.10:1
Specification Temperature		+25˚C	
Operating Temperature	-40˚C		+85˚C

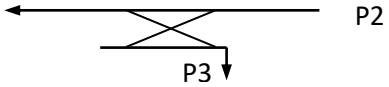
* The definition of the insertion loss, coupling and directivity is show as following.

Insertion Loss = $-10 \log_{10}[(P2+P3)/P1]$

Coupling Value = $-10 \log_{10}[P3/P1]$



Directivity = $-10 \log_{10}[P3/P2]$



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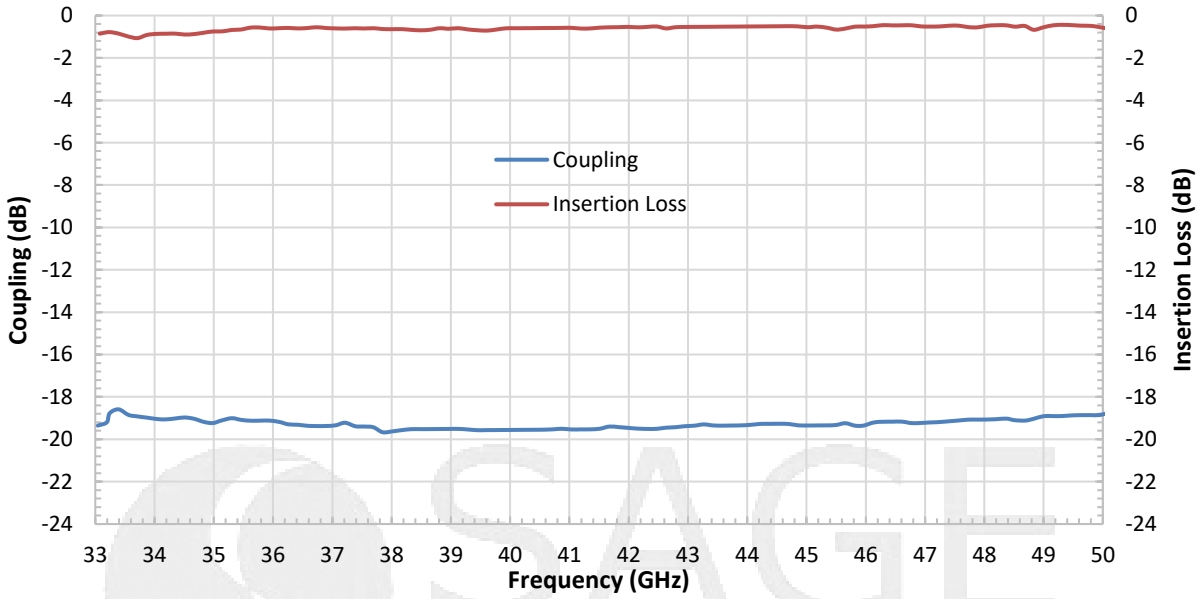
Mechanical Specifications:

Item	Specification
Through Ports	WR-22 Waveguide with UG-383/U Anti-Cocking Flange
Coupled Port	WR-22 Waveguide with UG-383/U Anti-Cocking Flange
Size	5.50” (L) X 1.30” (W) x 1.25” (H)
Material	Brass
Finish	Gold Plated
Weight	1.58 Lb
Outline	WD-SB-Q-A

Typical Coupling and Insertion Loss vs. Frequency



*Insertion loss includes circuit loss

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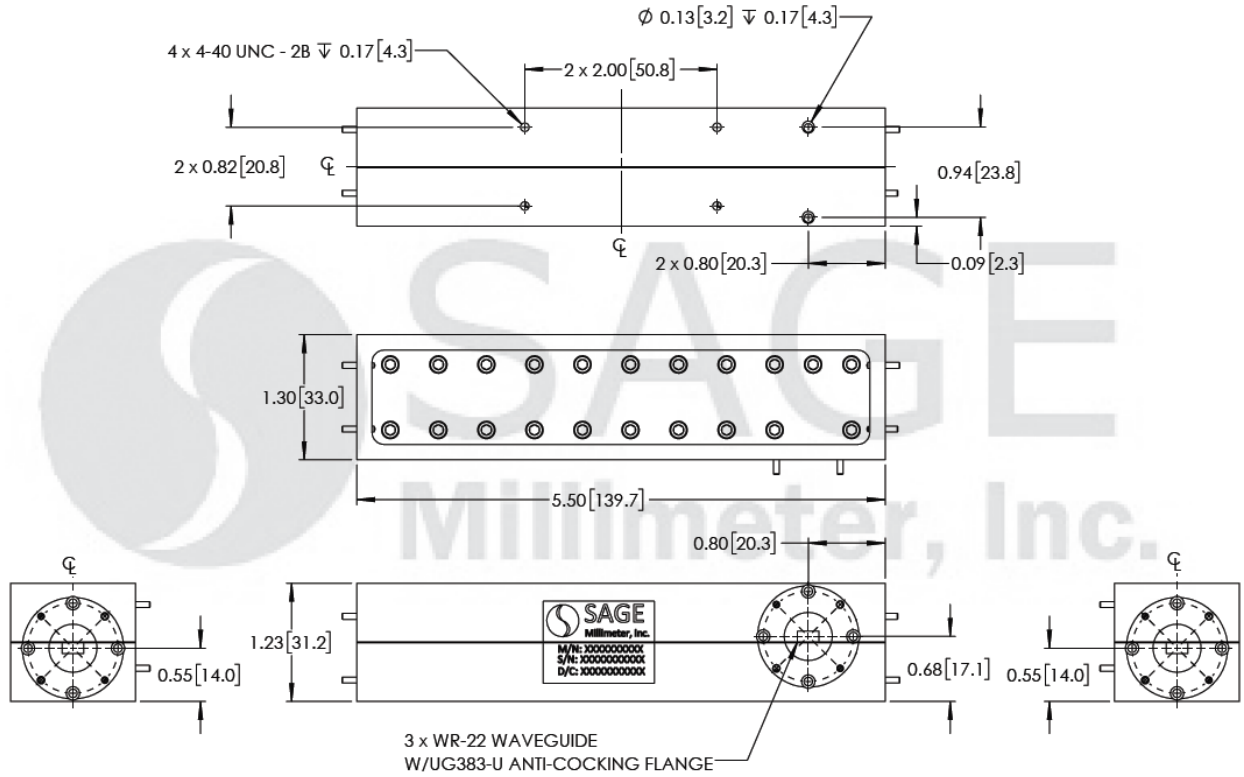
Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



Note:

- All data presented is collected from a sample lot. Actual data may vary unit to unit, slightly.
- All testing was performed under +25 °C case temperature.
- The insertion loss shown includes the loss due to coupling.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

Caution:

- Any foreign objects in the waveguide will degrade performance and/or damage the device.

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