

SWD-1040H-10-SB-WPC

W-Band Waveguide Directional Coupler, 10 dB

SWD-1040H-10-SB-WPC is a W band, three-port waveguide directional coupler that delivers a 10 dB nominal coupling level and 30 dB minimum directivity across the full waveguide band from 75 to 110 GHz. The three-port coupler uses a traditional multi-hole and split block design to achieve a flat coupling level, high directivity, and low insertion loss. The interfaces of the coupler are WR-10 waveguides with UG-387/U-M anti-cocking flanges. Custom coupling levels are available under different model numbers.



Electrical Specifications:

| Parameter | Minimum | Typical | Maximum |
|---------------------------|---------|---------|---------|
| Frequency | 75 GHz | | 110 GHz |
| Insertion Loss* | | 1.0 dB | |
| Coupling* | | 10 dB | |
| Directivity* | 30 dB | 40 dB | |
| Main Line Return Loss | | 27 dB | |
| Specification Temperature | | +25°C | |
| Operating Temperature | -40°C | | +85°C |

*The definition of the insertion loss, coupling and directivity is show as following. The required termination on the waveguide port is 30 dB or better for accurate measurement.

ECCN

EAR99

FEATURES

- Full Band Operation
- Low Insertion Loss
- High Directivity

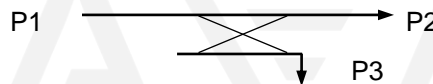
APPLICATIONS

- Test Labs
- Instrumentations
- Sub-assemblies

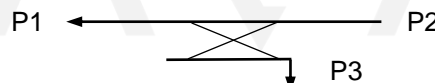
SUPPLEMENTAL DETAILS

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

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



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



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Mechanical Specifications:

| Item | Specification |
|---------------|---|
| Through Ports | WR-10 Waveguide with UG-387/U-M Anti-Cocking Flange |
| Coupled Port | WR-10 Waveguide with UG-387/U-M Anti-Cocking Flange |
| Size | 3.60" (L) X 0.95" (W) x 0.83" (H) |
| Material | Brass |
| Finish | Gold Plated |
| Weight | 7.7 Oz |
| Outline | WD-SB-W-A |

Typical Insertion Loss and Coupling vs. Frequency

