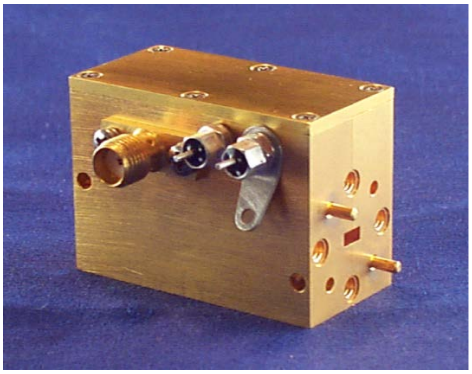
Millimeter Wave Products

A Wholly-Owned Subsidiary of Renaissance Electronics Corp.

Series HSW and HSWM SPST & SPDT PIN Switches

Revised May 2018



Description

The HSW and HSWM series of broadband PIN Diode switches cover frequency ranges from 18 to 65+ GHz. The HSW switches utilize a low loss finline structure with silicon or GaAs beam lead diodes, while the HSWM switches utilize GaAs MMIC switches in a microstrip configuration with launch to either 2.9/2.4 connectors or waveguide. Superior performance in a compact size is featured in these designs. Gold plated housings are used to achieve maximum performance and reliability.

Applications

- Attenuators
- AM Modulators
- General RF Switching
- Receiver Protection
- Integrated Systems

Features

- Switching Options
- Driver Options
- Compact Design
- Low Loss
- High Isolation

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Specifications @ 25^{0}C T_{CSE}, Specifications subject to change w/o notice.

SPST Switches

Part Number	Frequency (GHz)	RF Interface	Maximum Bandwidth	Insertion Loss (dB) (typical)	Isolation (dB) (typical)	Switching Speed (ns)	
						10-90%	90-10%
HSW4201-XXX	18.0 – 26.5	WR-42	Full	1.0	30	15	7
HSW4203-XXX	18.0 – 26.5	WR-42	Full	2.5	55	20	8
HSWM4201/2.9-320	18.0 – 26.5	2.9 mm female	Full	1.2	35	10	10
HSW2801-XXX	26.5 – 40.0	WR-28	Full	1.0	30	15	7
HSW2803-XXX	26.5 – 40.0	WR-28	Full	2.8	55	20	8
HSWM2801/2.9-176	26.5 – 40.0	2.9 mm female	Full	2.8	35	10	10
HSWM21502-164	58.0 - 62.0	WR-15	4 GHz	3.0	25	20	20

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Note: “XXX” Implies part numbers assigned to customer specific frequency ranges

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SPDT Switches (100-200 mW Power Handling)

Part Number	Frequency (GHz)	RF Interface	Maximum Bandwidth	Insertion Loss dB (typical)	Isolation dB (typical)	Switching Speed (ns) 10-90%	Switching Speed (ns) 90-10%
HSWM4201/2.9-238	18.0 - 26.5	2.9 mm female	Full	3.0	30	10	10
HSW22801-XXX	26.5 – 40.0	WR-28, UG-599/U	10 GHz	1.6	23	15	7
HSWM2801/2.9-239	26.5 – 40.0	2.9 mm female	Full	3.5	28	10	10
HSWM22801/2.9-180	26.5 – 40.0	2.9 female	Full	3.2	28	10	10

SPDT Switches (10W Power Handling)

Part Number	Frequency (GHz)	RF Interface	Maximum Bandwidth	Insertion Loss dB (typical)	Isolation dB (typical)	Switching Speed (ns) [1,4] 10-90%	Switching Speed (ns) [1,4] 90-10%
HSWM22801-324	26.5 – 40.0	WR-28, UG-599/U	Full	2.0	38	30	30
HSWM22801/2.9-309	26.5 – 40.0	2.9 mm female	Full	1.3	38	30	30

Specifications @ 25^{0}C T_{CSE}, Specifications subject to change w/o notice.

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General Specifications

Power Handling	Spec compliant to +20 dBm Operates to +23 dBm without damage 10 watt 26.5 to 40.0 GHz SPDT models are available
VSWR	2.0:1 (typ)
Driver Delay, TTL Driver	25 ns typical

Notes

1. Other on/off ratios, drivers, and switching speed options available.
2. Other flange options available.
3. Operating temperature 0 to +50^{0}C.
4. Specifications shown are for reflective switches. Contact factory for available non-reflective switch configurations.

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Requesting quotes

When requesting a quote for HSW and HSWM PIN Switches, please specify required frequency range, isolation level and any other required specifications. HSW and HSWM switches are built to order and will be optimized for the bandwidth specified by the customer. The HSW and HSWM part number guides below can also be used as a reference for requesting quotes.

HSW 2 28 03 / 383 - XXX

- XXX — Assigned by factory
- 383 — Option: Add flange # for non-standard flange
- 03 — Attenuation Option (See table below)
- 28 — Frequency Band (WR #)
- 2 — Number of switch arms: Use 2 for SPDT, leave blank for SPST
- HSW — HXI Model #

HSW On/Off Ratio and Driver Options

Option #	Insertion Loss / Isolation	Logic States
01	Standard Unit (low loss)	Logic 1 = Low Loss State
02	Standard Unit (low loss)	Logic 1 = Isolation State
03	High Isolation	Logic 1 = Low Loss State
04	High Isolation	Logic 1 = Isolation State

HSWM 2 28 01 / 383 - XXX

- XXX — Assigned by factory
- 383 — Option: Add flange # for non-standard flange
- Option: Add 2.4 or 2.9 for coaxial connectors
- 01 — Attenuation Option (See table below)
- 28 — Frequency Band (WR #)
- 2 — Number of switch arms: Use 2 for SPDT, leave blank for SPST
- HSWM — HXI Model #

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