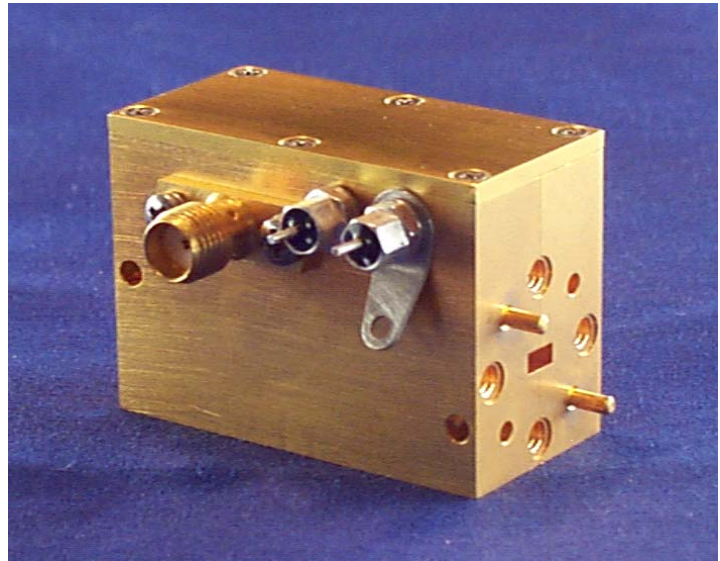


DESCRIPTION

The HSW series of broadband PIN Diode switches covers the waveguide bands from 18 - 110 GHz. The switches utilize a low loss finline structure with silicon or GaAs beam lead diodes for minimum insertion loss and maximum isolation. Superior performance in a compact size is featured in these designs. Gold plated housings are used to achieve maximum performance and reliability. Full waveguide band SPST units can be provided up to 60 GHz and 10 GHz bandwidths to 110 GHz. SPDT units have up to 10 GHz bandwidth.

Many options of on/off ratio values are offered with low loss versions and isolation levels up to 60 dB. Switches are available with or without drivers; TTL drivers are standard and ECL drivers are available as an option.



Applications

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

Features

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

Specifications @ 35°C T_{CASE}; Specifications subject to change w/o notice.

SPST Switches							
Part Number	Frequency (GHz)	WG / Flange ₂ (WR# / UG#)	Maximum Bandwidth	Insertion Loss (dB) ₁	Isolation (dB) ₁	Switching Speed (ns) _{1,4} 10-90% 90-10%	
HSW4201	18.0 – 26.5	42 595/U	Full	1.0	30	15	7
HSW4203	18.0 – 26.5	42 595/U	Full	2.5	55	20	8
HSW3401	22.0 - 33.0	34 595/U	Full	1.0	30	15	7
HSW3403	22.0 - 33.0	34 595/U	Full	2.6	55	20	8
HSW2801	26.5 – 40.0	28 599/U	Full	1.0	30	15	7
HSW2803	26.5 – 40.0	28 599/U	Full	2.8	55	20	8
HSW2201	33.0 – 50.0	22 599/U-M	Full	1.3	27	15	7
HSW2203	33.0 – 50.0	22 599/U-M	Full	3.0	53	20	8
HSW1901	40.0 – 60.0	19 599/U-M	Full	1.5	25	15	7
HSW1903	40.0 – 60.0	19 599/U-M	Full	3.5	50	20	8
HSW1501	50.0 – 75.0	15 385/U	10 GHz	1.6	25	15	7
HSW1503	50.0 – 75.0	15 385/U	10 GHz	3.5	50	20	8
HSW1201	60.0 – 90.0	12 387/U	10 GHz	2.0	18	150	25
HSW1203	60.0 – 90.0	12 387/U	10 GHz	3.5	45	175	30
HSW1001	75.0 – 110.0	10 387/U-M	10 GHz	2.2	18	150	25
HSW1003	75.0 – 110.0	10 387/U-M	10 GHz	3.5	40	175	30

Notes

1. Other on/off ratios, drivers, and switching speed options < 2ns available.
2. Other flange options available.
3. Operating temperature 0 to +50°C.
4. E & W Band speeds can be improved to 70 ns with a –20 V driver option.

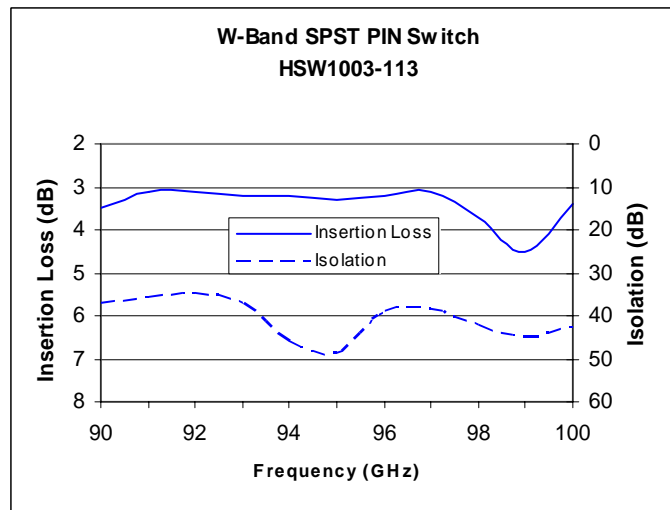
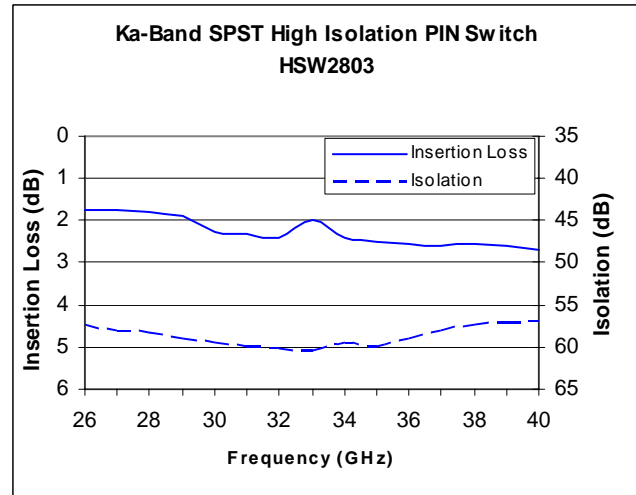
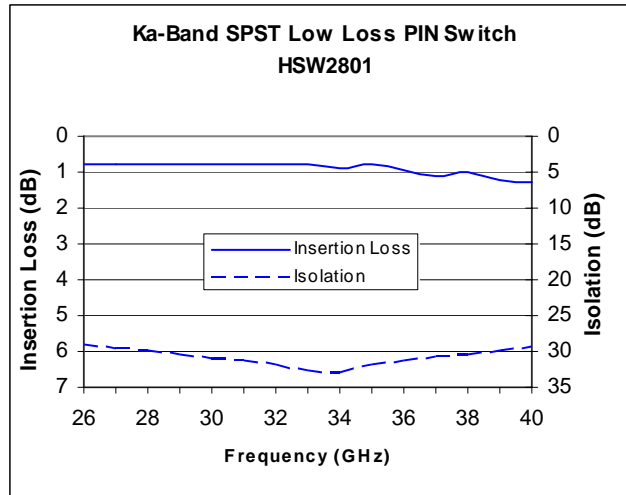
Specifications @ 35°C T_{CASE}; Specifications subject to change w/o notice.

SPDT Switches						
Part Number	Frequency (GHz)	WG / Flange ₂ (WR# / UG#)	Bandwidth	Insertion Loss dB ₁	Isolation dB ₁	Switching Speed (ns) ^{1,4} 10-90% 90-10%
HSW24201	18.0 – 26.5	42 595/U	10 GHz	1.6	23	15 7
HSW22801	26.5 – 40.0	28 599/U	10 GHz	1.6	23	15 7
HSW22201	33.0 – 50.0	22 599/U-M	10 GHz	1.7	22	15 7
HSW21901	40.0 – 60.0	19 599/U-M	10 GHz	1.7	22	15 7
HSW21501	50.0 – 75.0	15 385/U	10 GHz	2.5	20	15 7
HSW21201	60.0 – 90.0	12 387/U	10 GHz	2.7	20	150 25
HSW21001	75.0 – 110.0	10 387/U-M	10 GHz	3.0	20	150 25

Notes

1. Other on/off ratios, drivers, and switching speed options < 2ns available.
2. Other flange options available.
3. Operating temperature 0 to +50°C.
4. E & W Band speeds can be improved to 70 ns with a -20 V driver option.

Typical Data for HSW PIN Switches

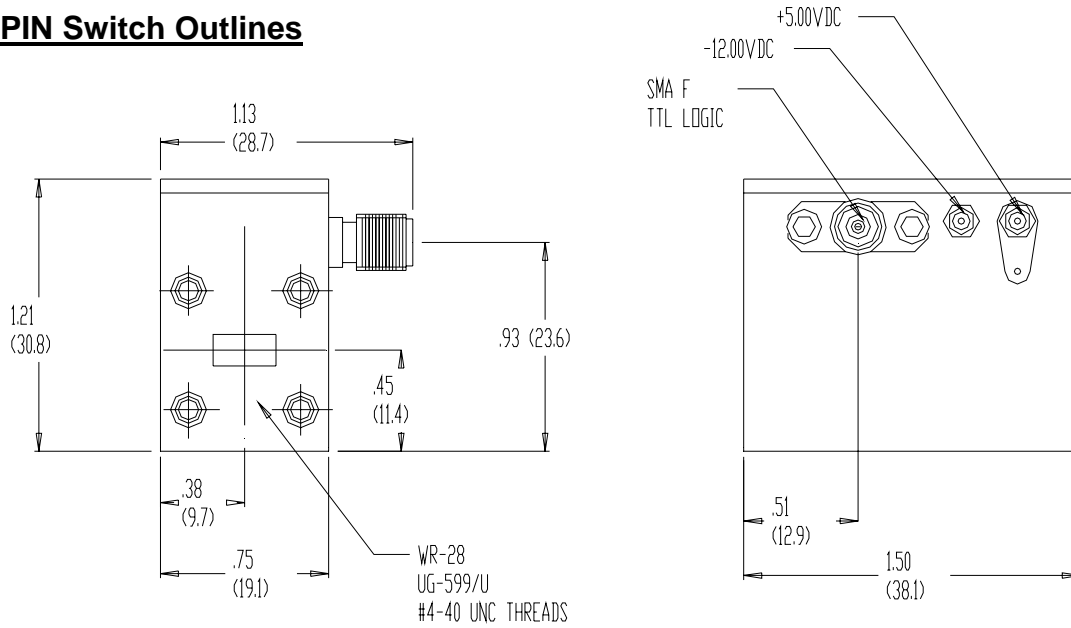


General Specifications

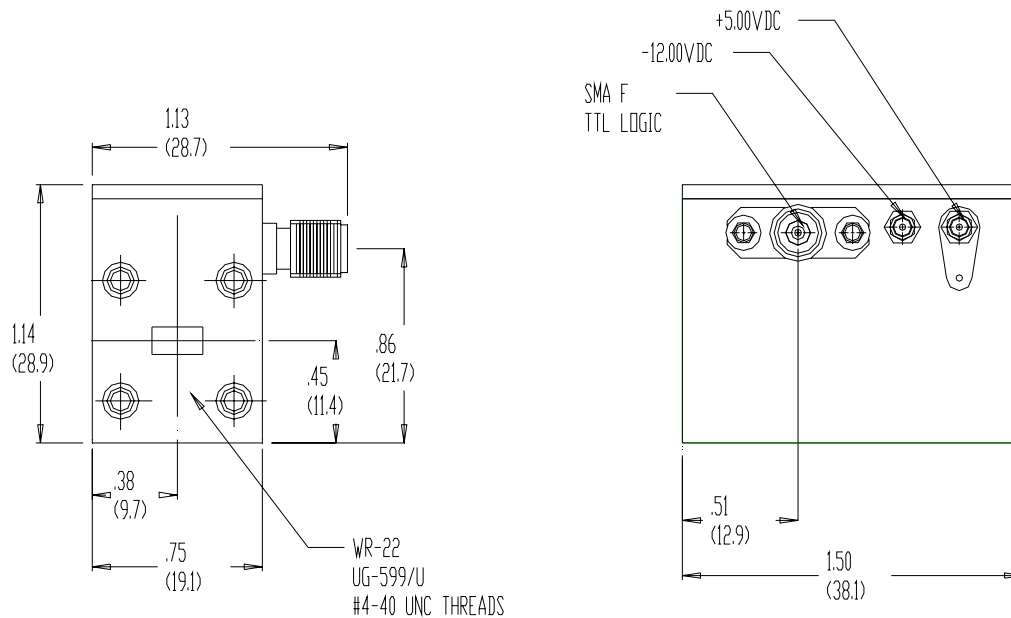
Power Handling	Spec compliant to +20 dBm Operates to +25 dBm without damage*
VSWR	2.0:1 (typ), 2.5: E & W Band
Bias	+5.0 VDC @ 10 mA, -15.0 VDC @ 2 mA
Driver Delay, TTL Driver	25 ns typical

*See Series HSWM PIN switches for higher power handling.

SPST PIN Switch Outlines

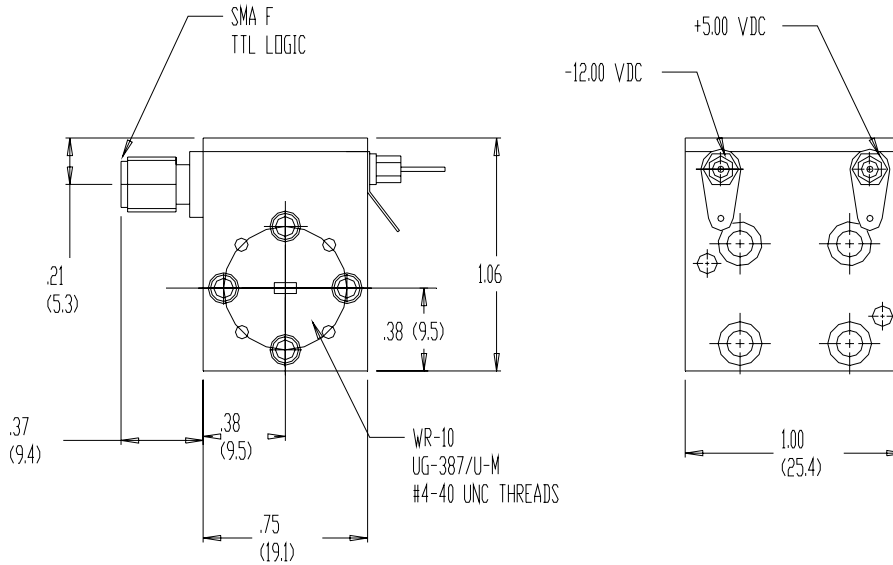


Ka-Band SPST PIN Diode Switch

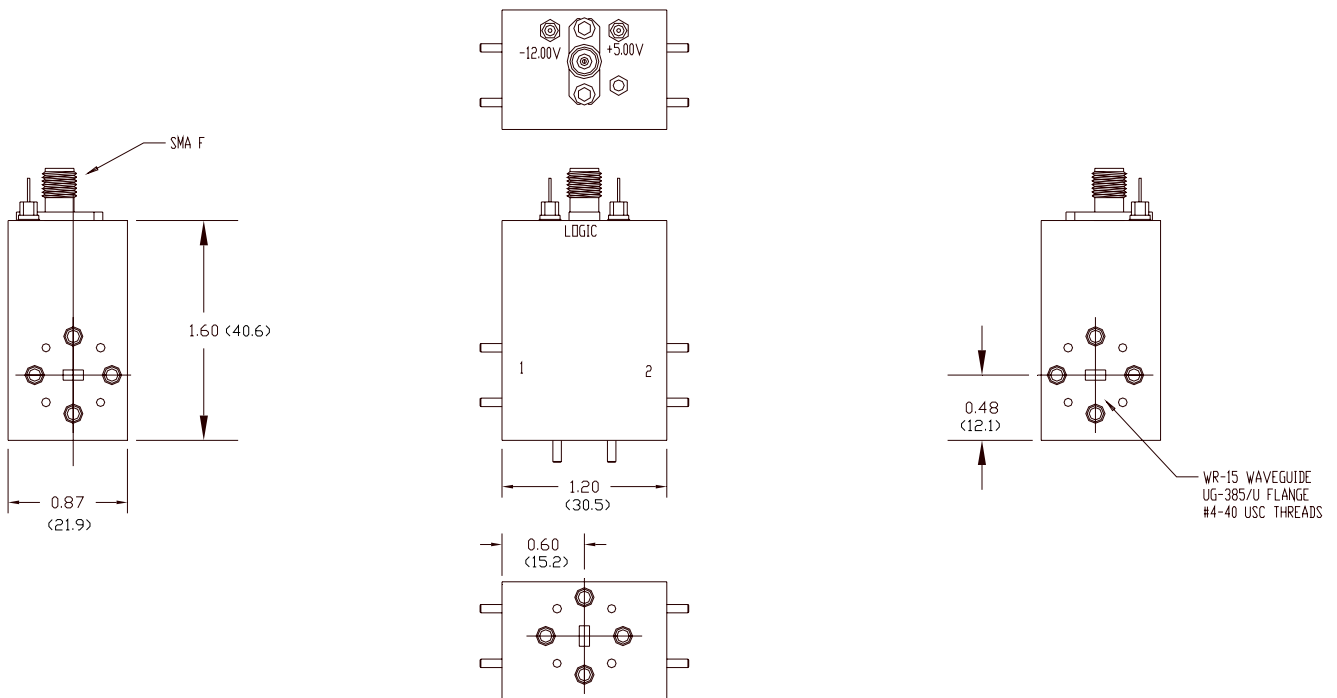


B-Band (Q-Band) SPST PIN Diode Switch

SPST & SPDT PIN Switch Outlines



W-Band SPST PIN Diode Switch

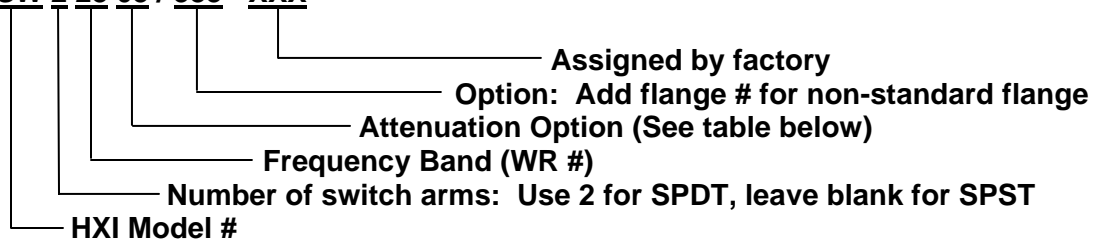


V-Band SPDT PIN Diode Switch

Requesting quotes

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

HSW 2 28 03 / 383 - XXX



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
05	Option Deleted	Option Deleted
06	Option Deleted	Option Deleted
07	Low Loss, Faster Switching	Logic 1 = Low Loss State
08	Low Loss, Faster Switching	Logic 1 = Isolation State
09	High Isolation, Faster Switching	Logic 1 = Low Loss State
10	High Isolation, Faster Switching	Logic 1 = Isolation State
11	Custom	