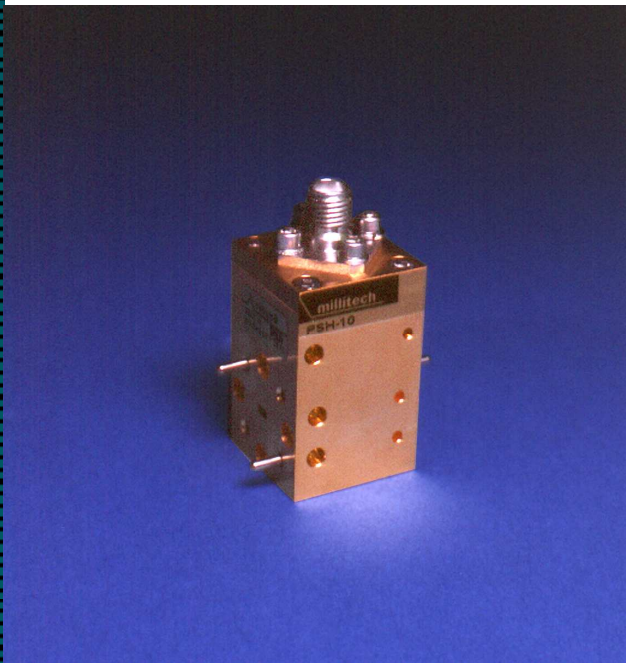


SERIES PSH HIGH SPEED PIN SWITCHES



FEATURES:

- Extremely high switching speed (<2 ns)
- Coverage from 18 to 95 GHz
- Optional TTL drive

APPLICATIONS:

- Pulse modulation
- Receiver protection
- Radar duplexers

DESCRIPTION

Millitech series PSH high speed PIN switches are single-pole, single-throw (SPST) reflective millimeter-wave switches covering eight waveguide bands from 18 to 95 GHz. Switching speeds of less than 2 ns are achieved, with a driver propagation delay of less than 8 ns.

Series PSH switches are available with or without a driver. The switching speed is driver dependent. To assure high speed operation, Millitech can provide an appropriate integral driver. The standard models offer isolation levels ranging from 30 dB at 18 GHz to 20 dB at 50 GHz and beyond. Greater isolation may be obtained by using multiple PIN switches in series.

A dual PIN switch with an isolator between each switch is also offered. It has a 40 to 60 dB ON/OFF ratio with insertion loss varying between 5.5 and 6.5 dB, depending on the band.

These switches are particularly useful in combination with Millitech pulse power sources for variable pulse width applications or as receiver protectors in pulse radar applications. They can also be used as double-throw switches in conjunction with Millitech circulators. For nominal high speed switches (switching time greater than 100 ns) and general purpose applications, please refer to series PSP (SPST) and series PDT (SPDT) switches.

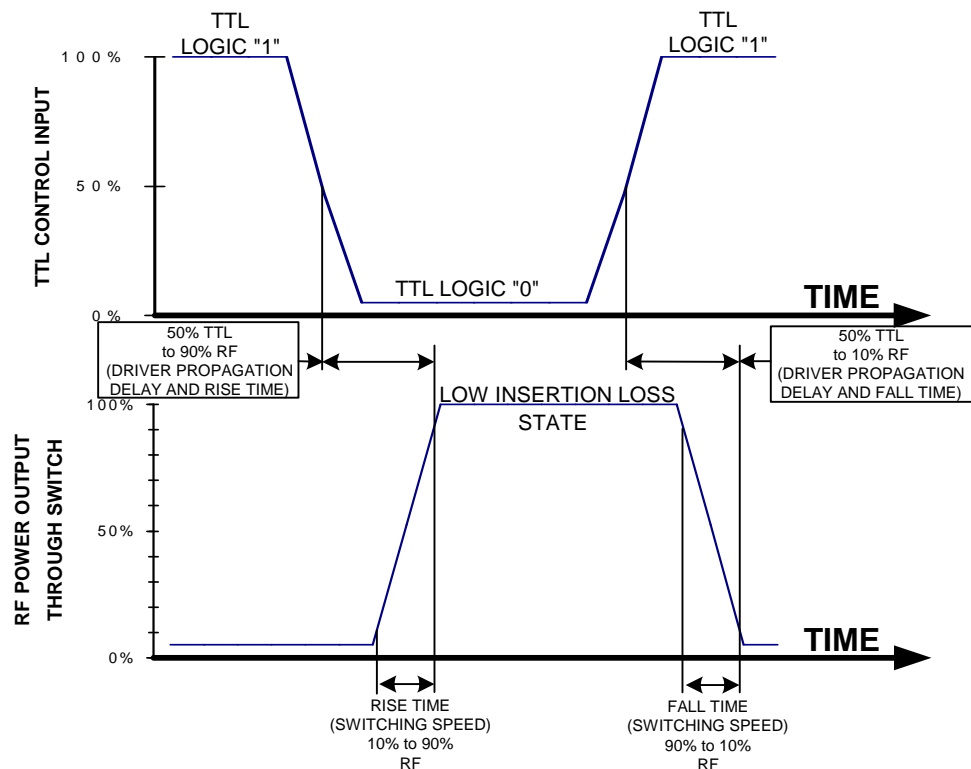
ELECTRICAL SPECIFICATIONS

Model Number	PSH-42	PSH-28	PSH-22	PSH-19	PSH-15	PSH-12	PSH-10
Frequency band and range (GHz)	K 18-26.5	Ka 26.5-40	Q 33-50	U 40-60	V 50-75	E 60-90	W 75-95
Bandwidth (GHz) (max)	Full	10	10	6	6	5	5
Insertion loss (dB) (max)	2.0	2.0	2.5	2.5	2.5	3	3.5
Isolation (dB) (min)	30	30	30	25	20	20	18
Switching speed (ns) (typ) ^{*1}	2	2	2	2	2	2	2
Driver propagation delays (ns) (max)	8	8	8	8	8	8	8
VSWR (max) ^{*2}	2:1	2:1	2:1	2:1	2:1	2:1	2:1
Power handling (CW/peak, W) (max)	0.25/5	0.25/5	0.25/5	0.25/5	0.25/5	0.25/5	0.25/5
DC bias input (V/mA) ^{*3}	Positive supply	+5/20	+5/20	+5/20	+5/20	+5/20	+5/20
	Negative supply	-5/5	-5/5	-5/5	-5/5	-5/5	-5/5

^{*1} – Switching speed specifications apply to any switch/driver combination. Driver propagation delay not included. Switching speed is driver dependent. See figure 1 below for explanation of switching speeds.

^{*2} – Measured in PASS state only.

^{*3} – Driver control input is TTL compatible with an SMA connector.

Switching Speed and Driver Propagation Delay Measurement


MECHANICAL SPECIFICATIONS

Model Number	PSH-42	PSH-28	PSH-22	PSH-19	PSH-15	PSH-12	PSH-10
Flange MIL.F-3922	/54-001*	/54-003*	/67B-006	/67B-007	/67B-008	/67B-009	/67B-010

*With #4-40 threaded holes.

HOW TO ORDER

Specify Model Number PSH-XX-ABCDØ
XX = Waveguide Band WR – number
A = Flange Type R – round (WR-22 through WR-10 only) S – square (WR-42 and WR-28 only)
B = Driver I – internal driver W – without driver
C = TTL Options A – TTL low corresponds to insertion loss B – TTL high corresponds to insertion loss
D = Bandwidth* N – narrowband (other than Fullband) F – fullband (WR-42 through WR-28 only)
Ø = Additional Options N – nonstandard (please specify requirements)
* Please specify frequency range when ordering narrowband units

*With # 4-40 threaded holes.

EXAMPLE:

To Order: A narrowband single PSH switch (43-45 GHz) in WR-22 with a round flange and an internal driver, where TTL “high” produces low insertion loss state

Specify: PSH-22-RINBØ