



## DATASHEET

### WR-10 full waveguide band 75 to 110 GHz

Isolation, dB: 28 (typ.)  
 Insertion loss, dB: 3.2 (typ.)  
 Rise/Fall Time: 1 ns  
 Time of switching after the  
 triggering: ON 3 ns, OFF 1.5 ns

## Single Pole Single Throw (SPST) WR-10 switch key features:

### Full WR-10 Spectrum

ELVA-1 SPST-10 switch is available in full WR-10 waveguide band 75 to 110 GHz. This mm-wave switch provides you with the versatility and flexibility that you need from this component.

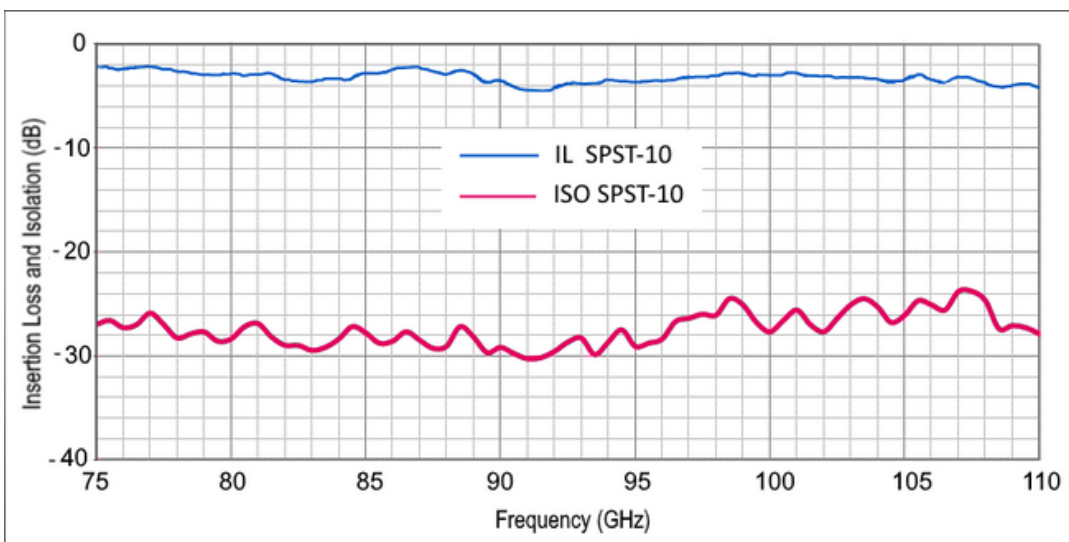
### Lightning-fast Switching

What sets our SPST-10 switch apart from others on the market is its lightning fast switching speed with steep signal switching fronts of 1 ns. This ensures that you can keep up with even the most demanding of SPST applications.

### High Performance

The high performance of SPST-10 switch is confirmed by the following:  
 Rise/Fall Time: 1 ns  
 Time of switching after the triggering: ON 3 ns, OFF 1.5 ns  
 Insertion loss, dB: 3.2 (typ.)  
 Isolation, dB: 28 (typ.)

## Typical Insertion Loss and Isolation vs. Frequency



### Applications

- 6G Systems
- Test Set
- Radar & Astronomy Systems
- RF Communication Systems
- Test Equipment & Labs
- Switching Networks

## How to order

Please specify SPST-10/FB (Full band) model in your enquiry

- This datasheet describes SPST-10/FB (Full band) model.
- Customization of the SPST-10 switch in a more narrow band can lead to a reduction in insertion loss less than typical 3.2 dB value.

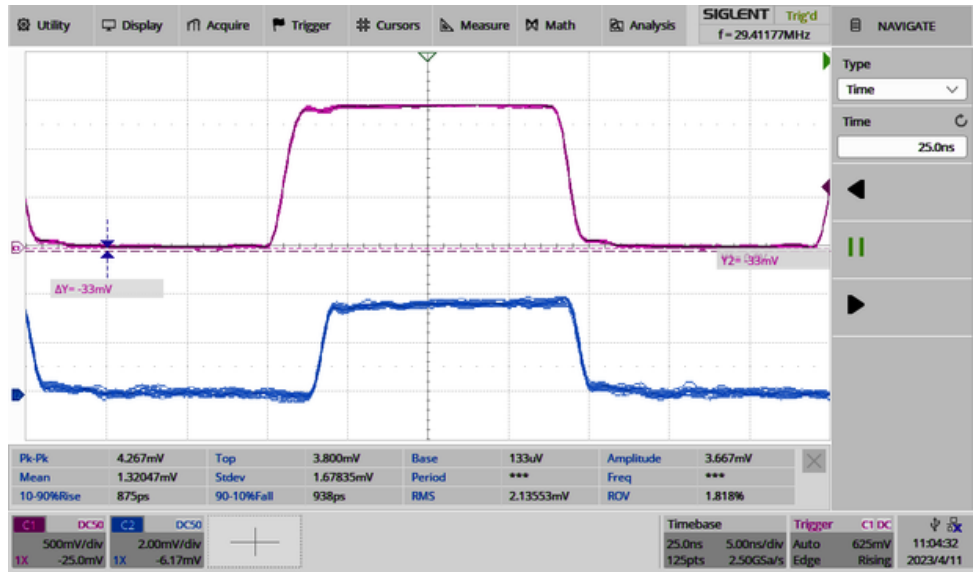
Please feel free to contact ELVA-1 for detail.

## SPST-10 SPECIFICATIONS

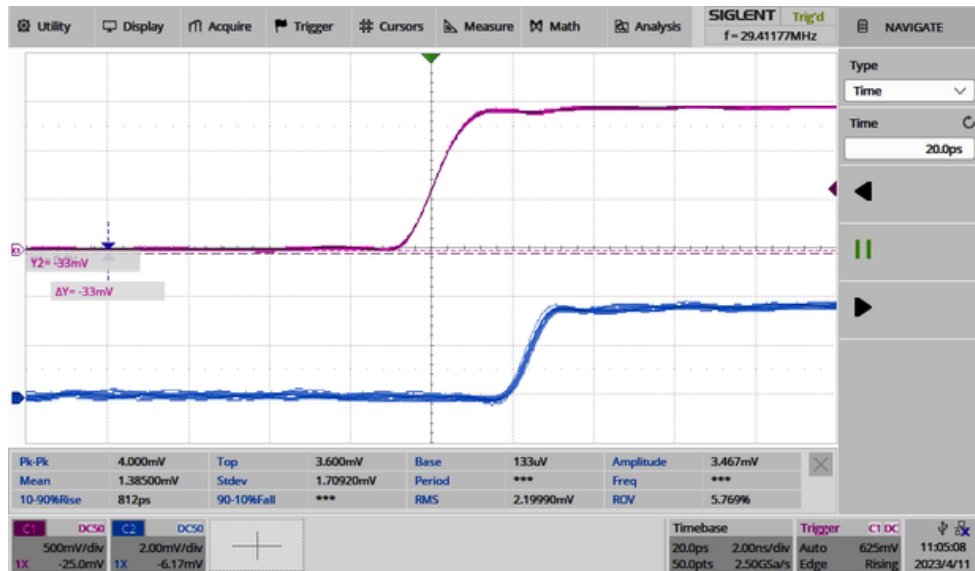
Parameter	Value
Frequency (min to max), GHz	75 to 110
Insertion loss (typ.), dB	3.2
Insertion loss (max.), dB	4.2
Isolation, dB (min/typ)	24 / 28
Switch Type	Reflective
Normal position closed	Voff = 0 V, Von = +5 V (TTL)
Time of switching after the triggering	ON - 3 ns (typ); OFF 1.5 ns (typ)
Rise/Fall Time 10%/90%	1 ns
TTL port	SMA-F
VSWR	1.65:1 (typ)
Max continuous power	100 mW
Waveguide and flanges	WR-10, UG387/U-M Anti-Cocking Flanges
Power	+5..12V @1 mA
Dimensions, mm	49 x 36 x 24
Weight	200 g

# SPST-10 TYPICAL DATA

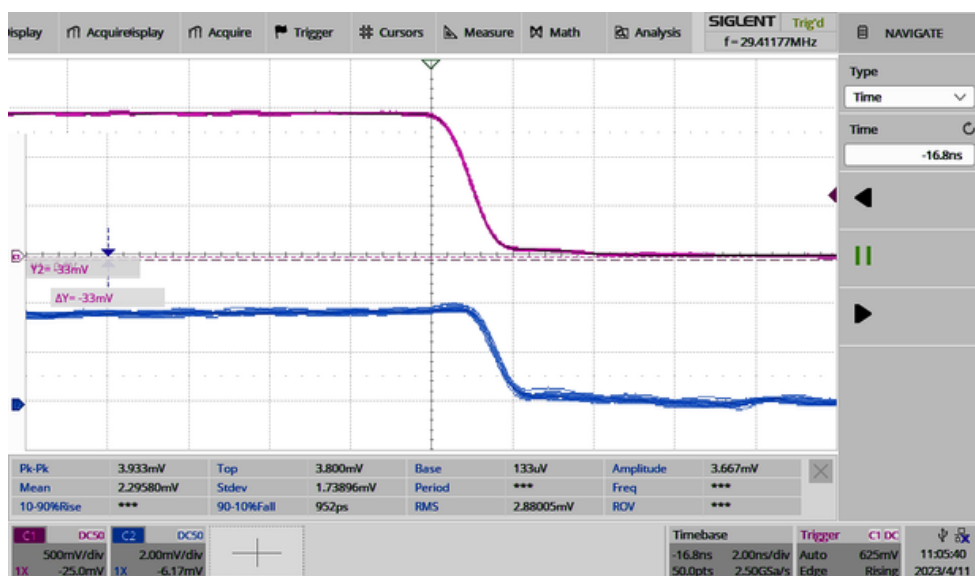
Switching time measurements,  
Top curve – TTL input, down curve – detector output



Long-term settling time. (5 ns/div)



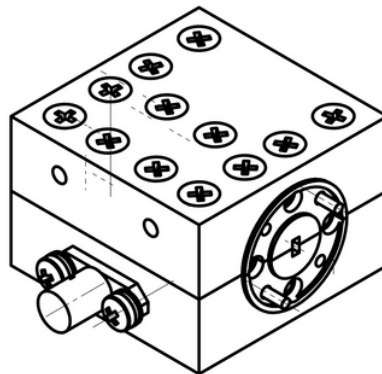
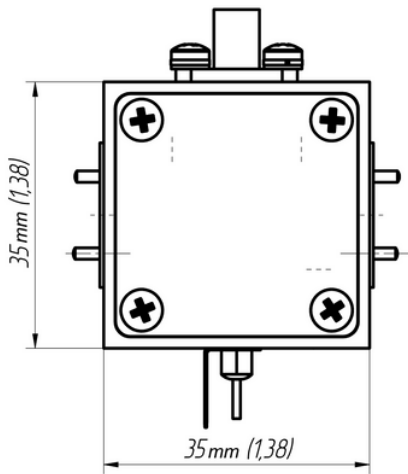
Turn-On time (2 ns/div)



Turn-Off time (2 ns/div)

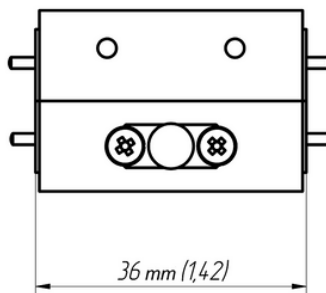
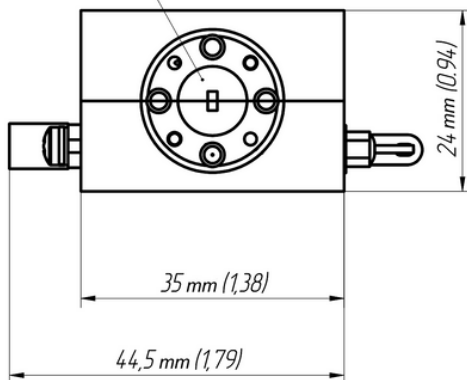
# SPST-10 MECHANICAL OUTLINE

All dimensions are in millimeters (inches in brackets)

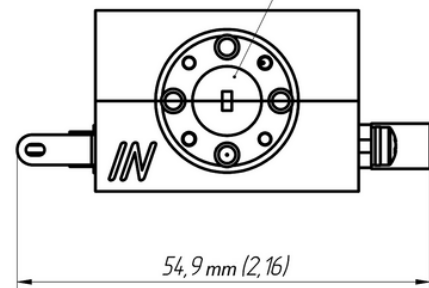


\*The type of flange depends on frequency range

WR-10 UG-387/U-M Anti-Cocking Flange



WR-10 UG-387/U-M Anti-Cocking Flange

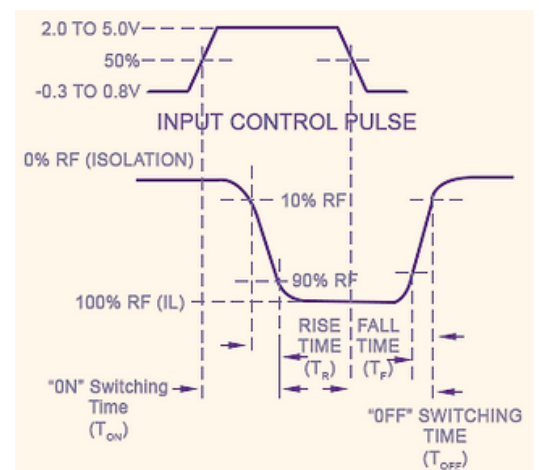


**Note:**

- 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.
- ELVA-1 reserves the right to change the information presented in this datasheet without notice.

**Caution:**

- The switch is a static sensitive device. Always follow ESD rules when working with the switch.
- Any foreign objects in the waveguide will result in reduced performance and possible device failure.
- Proper torque of not more than  $0.90 \pm 0.06$  Nm must be applied to the flange screws.



Rise/Fall Time legend

**ORDER NOW**