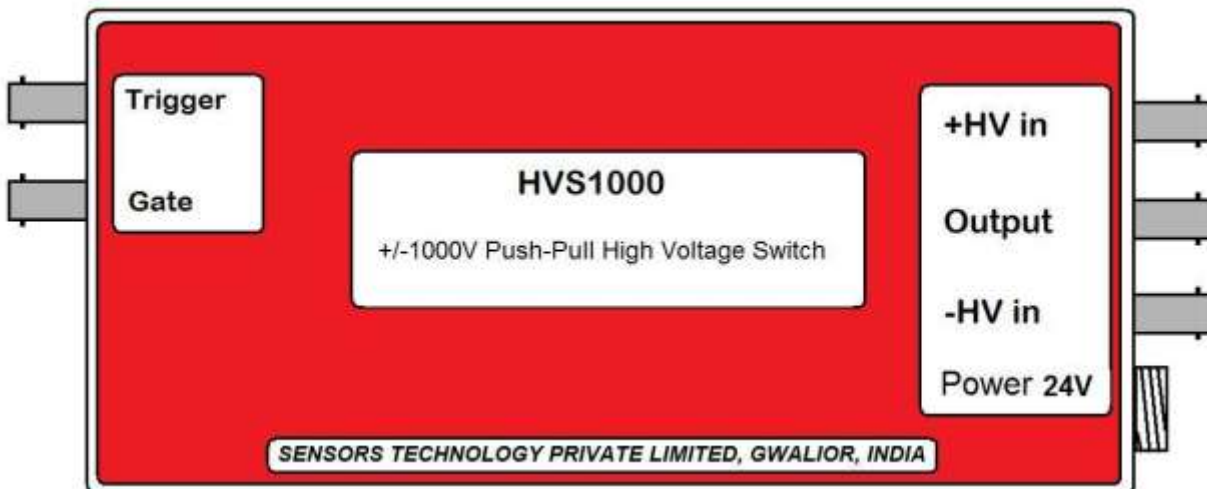

1kV HIGH VOLTAGE PUSH PULL MOSFET SWITCH

Version 1.2 April 25, 2011

Specifications: Model HVS1000 is 1000V version (HVS650 is 650V version)

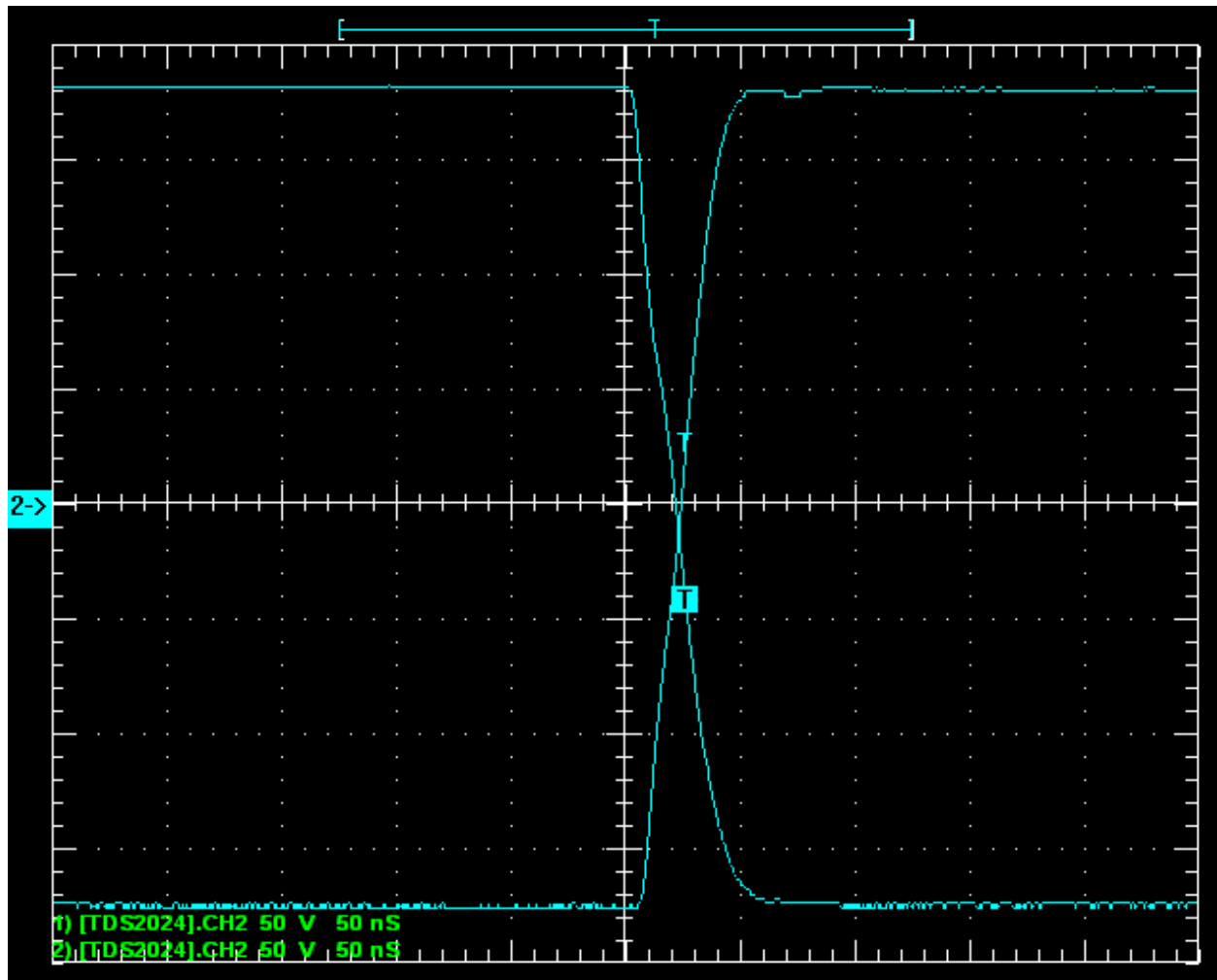
- External High Voltage Input HV1: 0-1000V Positive Polarity
- External High Voltage Input HV2: 0-1000V Negative Polarity
- Total Differential High Voltage Input / Output: HV1 - HV2 = 1000V Maximum
- Peak Output Current: 1A for <50ns for fast 100pF capacitor charging
- Trigger Input: TTL
- Trigger Time: 300ns to DC
- Trigger Rate: DC to 10 kHz
- Gate Input: TTL
- High Voltage Output: 1000V Maximum
- Load: 100pF || 1M Ohms
- Output Rise Time: <50ns
- Output Fall Time: <50ns
- Output Delay: 300ns
- Output Start Jitter: <1ns
- Trigger to High Voltage Isolation: 5000V DC
- Power Supply: 24V DC 500mA
- Applications: Ion Gate Pulser

Applications: Ion gate, IMS, TOF, Ion Filters, Nuclear Detectors, Electron Multipliers



High voltage output pulse rise time and fall time

HVS1000 for switching 1000V output into 100pF||1MOhms load has fast <50ns rise time and <50ns fall time. Output ranges are many as long as differential 1kV power is maintained between positive and negative terminals of HV Supplies. Popular ranges are +/-1000V or -100V & 0V or 0V & +1000V or 500V & -500V, all having 1000V maximum. Standard test load is 100pF|| 1M Ohms. As shown in the figure below, 45ns on both edges with no overshoot or undershoot on rising and falling edges.



Data was recorded for 2 μ s pulse at 10kHz repeat rate. Power requirement for high voltage power supplies for these switches is 20W for 10kHz repeat rate due to fast rising and falling edges and high repeat rate. However, HV supply of 5W can be used for 1kHz repeat rates. These High Voltage fast push-pull switches are available in miniature housing HVS650 and HVS1000 and require external HV Supplies. Switches are also integrated in multiples in numbers into single 19" wide 2U high module. Each switch can be triggered independently or by a single trigger.