

Fast High Voltage Switch (REGEN driver) Model: RPR...HV

- ✓ **Compact design**
- ✓ **High repetition rate up to 20kHz**
- ✓ **Adjustable voltage up to 3.8kV**
- ✓ **Fast switching time “on” and “off” <5ns, <3.5ns typical**
- ✓ **HV power supply included**
- ✓ **Easy Pockels cell pin connection**
- ✓ **No active cooling required**
- ✓ **Fast transitions, leading and trailing edge**

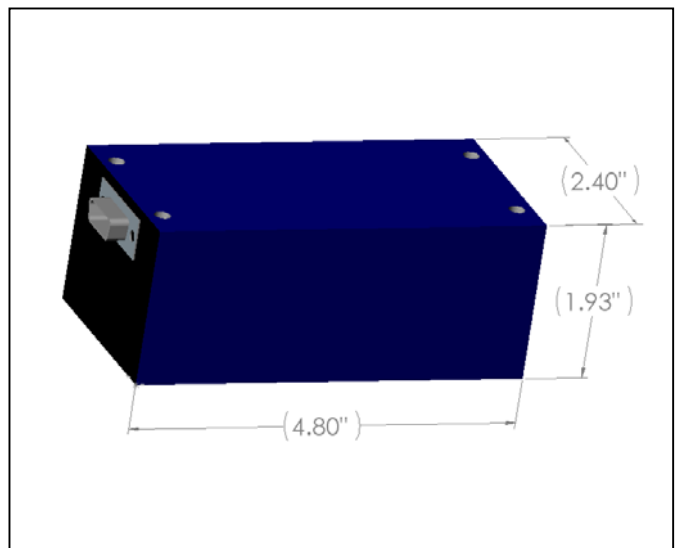


The RPR...HV. are a series of fast, high voltage drivers that operate at repetition rates up to 20 kHz without the need for forced air or water cooling. Typical rise and fall times, which are independently triggered, are 3.5 ns. The drivers, which can be used for powering Pockels cells in regenerative amplifiers, operate at a high voltage that is user adjustable up to -3.8 kV. The “on” time corresponds to the time interval between two trigger pulses; it can be varied from 50 ns up to 1.5 μs. Good thermal design of all high power components results in a reliable driver with a long lifetime. Easy to use HV pin connections and various mounting features permit simple mounting of the switch module to a variety of Pockels-Cell mounts and laser housings. The driver consists of a high voltage power supply and a gold-plated switching module; a 24 VDC power supply for powering the driver is available as an option.

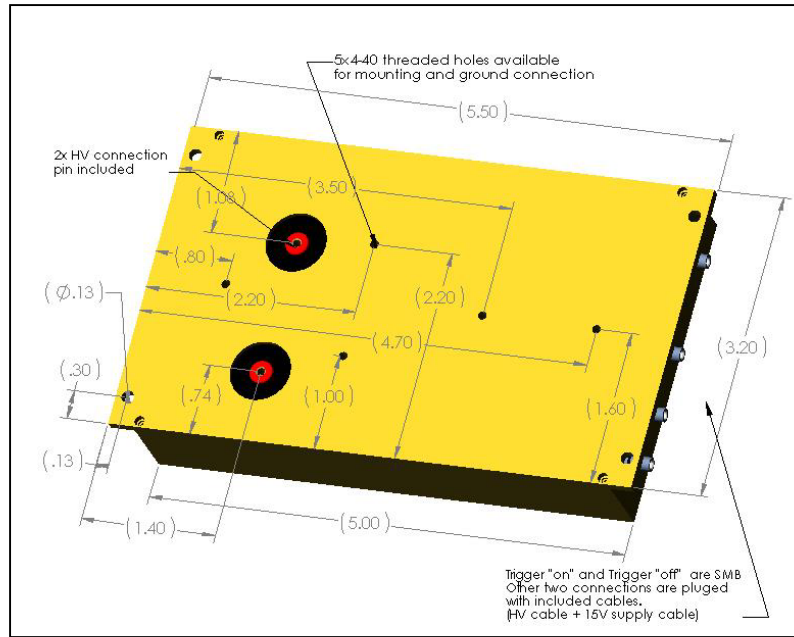
Operating characteristics:

- Voltage pulse 1.2kV-3.8kV adjustable depending on model
- Electrical switch time 10%-90% <5ns for the on and off transition (<3.5ns typical)
- Voltage holding on time 50ns to 1.5μs
- Repetition rate: single shot to 10kHz or 20kHz.
- 2x TTL trigger input, SMB connection
- Jitter < 300ps pulse to pulse <100ps RMS

HV-POWER SUPPLY MODULE (10kHz version)



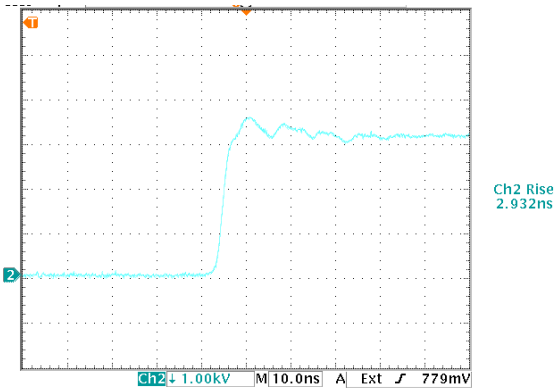
SWITCH BOX MODULE



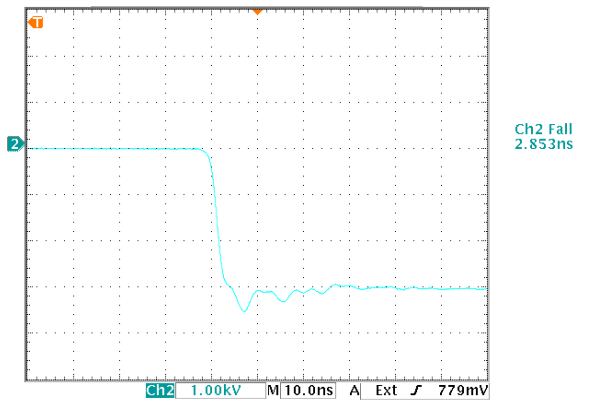
TEST DIAGRAMS at 3-4 kV, Load 5pF, 5kHz, $T_{switchbox} = 20^{\circ}C$

Measured with HV-probe: 200MHz, 3pF

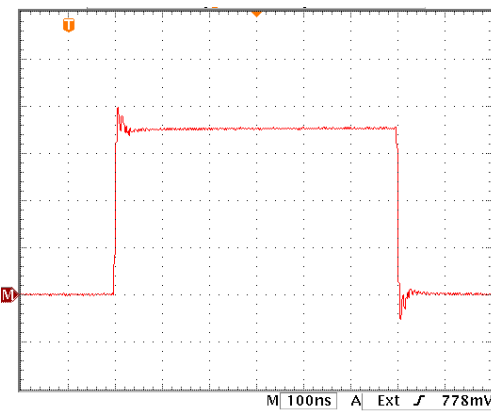
rising edge



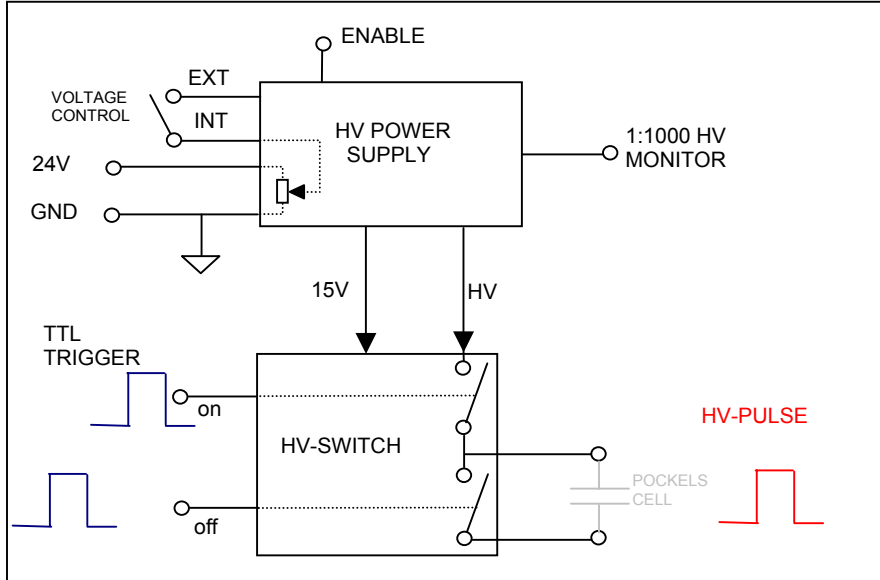
falling edge



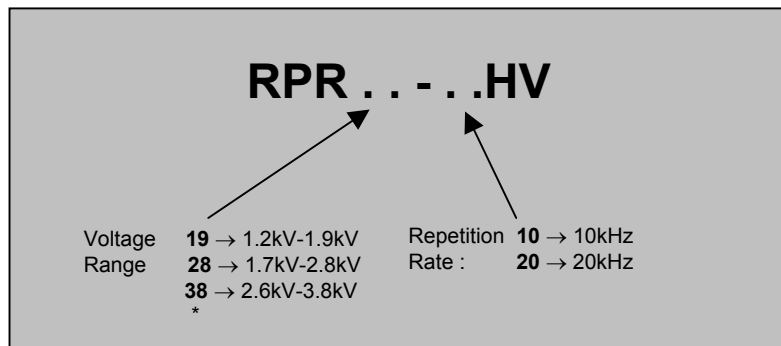
complete cycle



SIMPLIFIED CIRCUIT



Models:



* higher and lower voltages available on request

Optional: 24 VDC power supply, which runs off 110 VAC – 240 VAC, and test cable for the HV power supply. **P/N: RP24TC**