HIGH REPETITION RATE POCKELS CELL DRIVER FOR Q-SWITCHING OF DIODE PUMPED LASERS – DQ

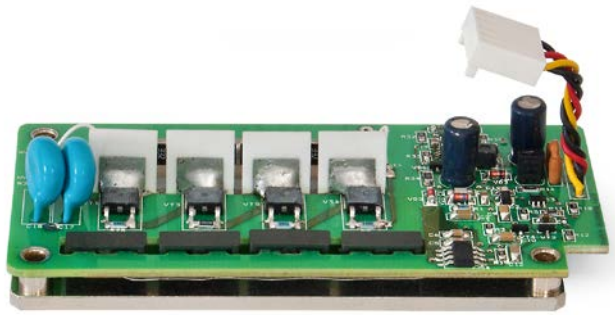
Features

- Pulse repetition rate up to 100 kHz
- Fast HV rise time <7 ns for 4 kV pulse
- HV pulse amplitude up to 4 kV

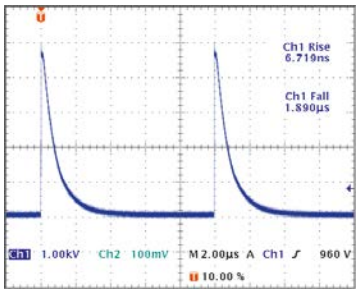
DQ series high repetition rate Pockels cell driver has been designed for use in mode-locked lasers for cavity dumping or for cavity Q-switching of solid-state nanosecond lasers. Fast HV edge ensures excellent pre- and post-pulse contrast.

Ability to operate at high pulse repetition rates makes this driver perfect fit for most of diode-pumped nanosecond lasers. For pulse repetition rates up to 10 kHz heatsink is not required. For high repetition rates the driver should be attached to the heatsink with thermal resistance of at least 0.4 °C/W for room temperature (25 °C) operation.

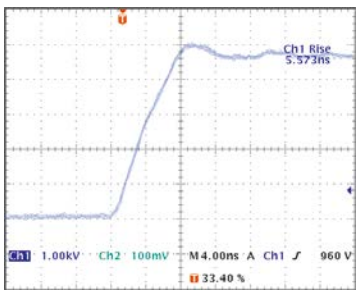
The driver should be mounted into dielectric box (not provided) providing electrical insulation. Low voltage power supply is required to internal triggering circuit, while tuning of HV power supply voltage.



DQ series Pockels cell driver



Oscillogram of DQ-100-4 driver operation



Fast edge of HV pulse in detail

Specifications

CATALOGUE NUMBER	DQ-100-4
Maximum high voltage (HV) pulse amplitude	4.0 kV
Polarity	Positive
HV pulse rise time	< 7 ns
HV pulse fall time	~2 µs [1]
HV pulse duration	180 ns [1]
Maximum HV pulse repetition rate	100 kHz
HV pulse jitter	< 0.5 ns
External triggering pulse duration requirement	100 – 1000 ns
External triggering pulse amplitude requirement	3 – 5 V (50 Ω)
External triggering pulse rise & fall time	< 10 ns
HV pulse delay	35 – 40 ns
External powering requirements:	
high voltage supply	0 – 4.0 kV, 9 mA max [2]
low voltage DC supply	9 – 24 V, 500 mA max [2]
Operating temperature	0 – 35 °C [3]
Size	104 × 52 × 25 mm

[1] Typical value.

[2] Test conditions: PRR = 100 kHz, C = 6 pF, U = 4 kV.

[3] Heat sink temperature must not exceed 35 °C (95 °F) in all regimes of operation.