新特光电
Sintec Optronics

QDP-50 DOUBLE PULSE OEM

Pockels Cell Driver for Flash Lamp Pumped Lasers

Q-DRIVE™ PRODUCT DATASHEET

The G&H QDP-50 is a compact double pulse OEM Pockels cell driver for inclusion in flash lamp pumped lasers.

The driver is designed for Q-switching of lasers without the need for phase retardation plates. Once triggered, high voltage is applied to inhibit the laser output.

After an adjustable delay, the Pockels cell is opened by a fast negative pulse to allow laser output, then it returns to high voltage to inhibit additional lasing.

The Q-Drive Double Pulse has been shown to increase Pockels cell life expectancy and laser output power relative to constant voltage-on scenarios often employed.

Note that for ON times longer than 400 µs or loads greater than 10 pF, the max rep rate may be less than 50 Hz due to internal power limiting.

The compact 140x92x32 mm (5.5x3.6x1.2") circuit features an integrated high voltage power supply which includes remote voltage monitoring (1 V/kV) and remote shutdown.

Key Features

- 1.2-4.0 kV adjustable output voltage
- 0-50 Hz repetition rate
- 300-800 µs nominal on time (adjustable)
- 160-300 µs delayed pulse (adjustable)
- Fall time (delay pulse) less than 10 ns

Benefits

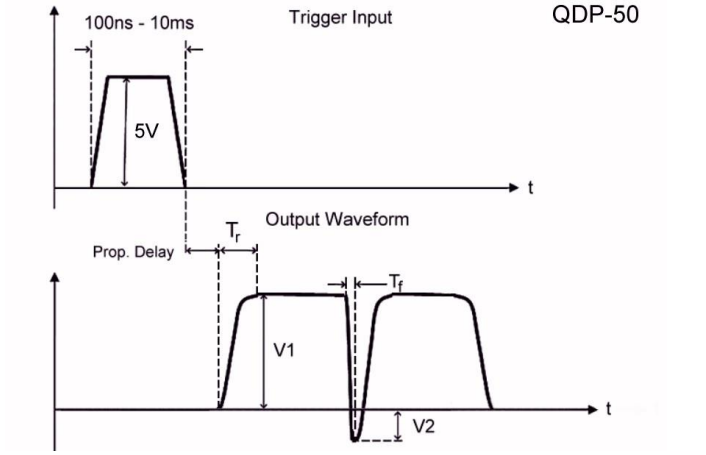
- Increased Pockels cell life
- High performance at a low cost
- Integrated high voltage power supply
- Compact footprint

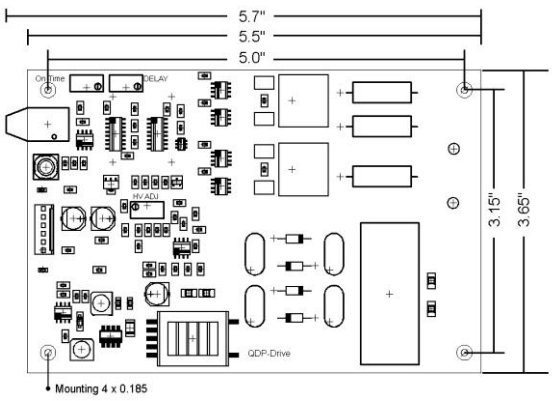
Applications

- Medical lasers
- Industrial lasers
- Etching/marking

Specifications

Parameter	Conditions	Min	Max	Units
OUTPUT PULSE PARAMETERS				
Pulse repetition rate	Same as trigger input	1	50	Hz
Amplitude (V1+V2)	Adjustable (V2 = 10% of V1)	1.2	4.0	kV
Total HV on time	Adjustable or fixed	300	800	µs
Delayed center pulse	Adjustable (range can be modified)	160	300	µs
Fall time	3.5 kV, 6 pF		< 10	ns
Rise time	3.5 kV, 6 pF	1	5	µs
Load capacitance	With Pockels cell leads		30	pF
POWER REQUIREMENTS				
Input voltage	Exceeding 20 VDC will damage driver	15	18	VDC
Input current	4.0 kV, 50 Hz, 10pf load		250	mA
TRIGGER				
Input impedance	Nom. 50 Ω	48	52	ohms
Amplitude	Nom. 5 V	4	10	V
Pulse width	Set by user	100n	10m	sec
Propagation delay	After trailing edge of trigger	80	100	ns
ENVIRONMENTAL				
Ambient air temperature			50	ºC





Mechanical dimensions