

# QDP-DT DOUBLE PULSE OEM

## Pockels Cell Driver for Flash Lamp Pumped Lasers

### Q-DRIVE™ PRODUCT DATASHEET

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

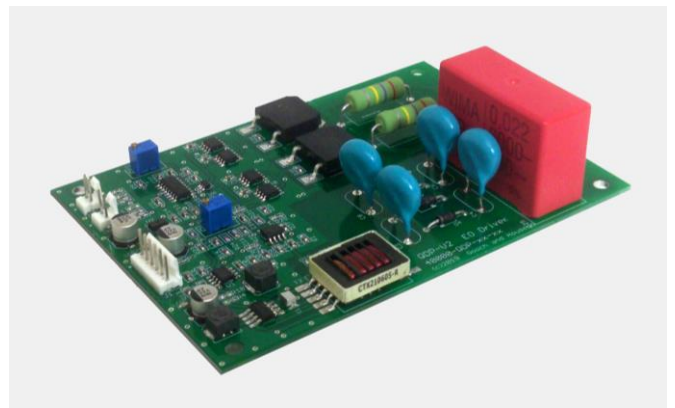
The driver is designed for Q-switching of lasers without the need for phase retardation plates. Once triggered, high voltage is applied to inhibit the laser output.

When the second trigger is applied, 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 QDP-DT has been shown to increase Pockels cell life expectancy and laser output power relative to voltage-on scenarios often employed. It is similar to the QDP-50 except that it requires a separate trigger for the delayed pulse whereas the QDP-50 generates the delayed pulse after a preset time which is adjustable.

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

The compact 127x87x32 mm (5x3.5x1.2") circuit board 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  $\mu$ s nominal on time (adjustable)
- 5-7  $\mu$ s wide delayed pulse (separate trigger)
- Fall time (delayed pulse) less than 12 ns

#### Benefits

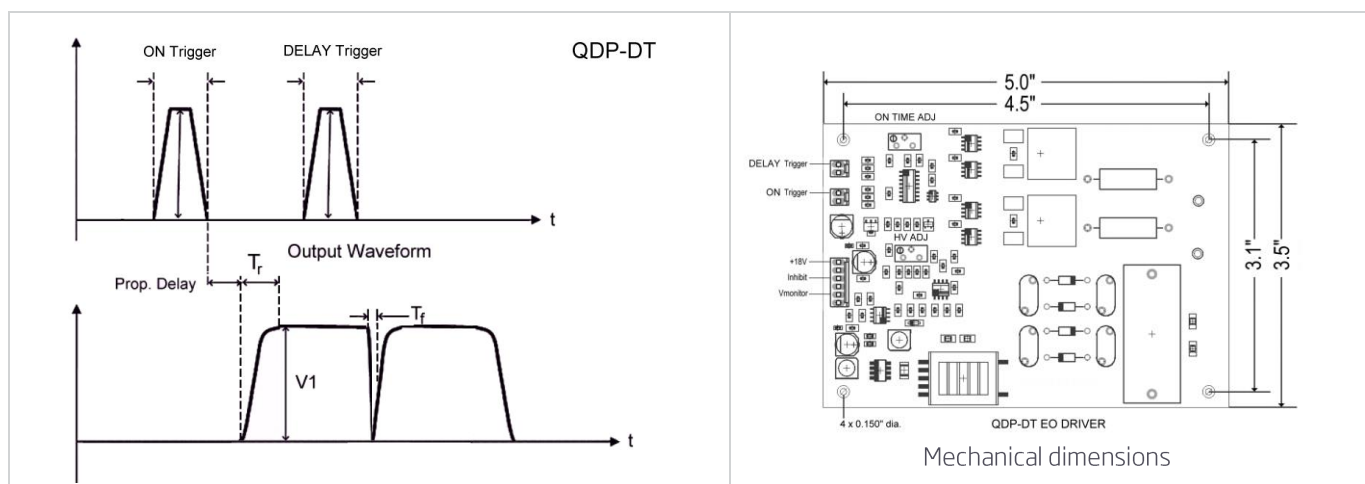
- Increased Pockels cell life
- High performance at a low cost
- Integrated high voltage power supply
- Compact footprint

#### 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                          | 300  | 800       | $\mu$ s      |
| Center pulse width      | Trigger                             | 5    | 7         | $\mu$ s      |
| Fall time               | 3.5 kV, 6 pF                        |      | < 12      | ns           |
| Rise time               | 3.5 kV, 6 pF                        | 1    | 5         | $\mu$ s      |
| 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. 100 $\Omega$                   | 90   | 110       | ohms         |
| Amplitude               | Nom. 5 V                            | 4    | 6         | V            |
| Pulse width             | Set by user                         | 100n | 100 $\mu$ | sec          |
| Propagation delay       | After trailing edge of trigger      | 80   | 100       | ns           |
| ENVIRONMENTAL           |                                     |      |           |              |
| Ambient air temperature |                                     |      | 50        | $^{\circ}$ C |



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