MODEL 825B
SOLID-STATE
POCKELS CELL DRIVERS

SOLID-STATE POCKELS CELL DRIVER

- Adjustable output to -3.5kV
- 30ns rise time, 150µs recovery
- Rugged solid-state design
- Self-contained high voltage power supply
- Compact surface mount construction
- Opto-isolated or TTL trigger options

DESCRIPTION:

The 825B Series Pockels cell drivers are designed for continuous pulsed applications, such as controlled Q-switching of lasers. Solid-state MOSFET technology is used, giving excellent trigger noise immunity and a smooth output waveform. This technique eliminates common problems associated with krytron, avalanche and transformer drivers. Amplitude is continuously variable by adjusting the internal high voltage power supply. Options for triggering include an active high opto-isolator and TTL logic. Pulse amplitudes to -3.5kV are available.

SPECIFICATIONS:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Trigger Input</td>
<td>TTL/CMOS compatible, positive logic, &gt; 3.0V, high impedance, internally limited to +5V via 1kΩ load (825B-1) Opto-isolated, active high current of 2.5mA to 9.0mA, 2kΩ impedance (825B-2)</td>
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<tr>
<td>Pulsewidth</td>
<td>≥ 300ns to 25µs</td>
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<tr>
<td>Repetition Rate</td>
<td>Up to 100Hz at 3.5kV into 47pF load See graph for alternate voltage/load limits Burst mode permissible</td>
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<tr>
<td>Power</td>
<td>+15VDC ± 0.5V at 20mA to 100mA depending on PRF and output voltage</td>
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<tr>
<td>Temperature</td>
<td>Operating: -40°C to +85°C Storage: -55°C to +125°C</td>
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<tr>
<td>Connectors</td>
<td>Input: 4 pin connector Output: 12&quot; flying leads</td>
</tr>
<tr>
<td>Caution</td>
<td>Mounting hardware must be Non-Conductive. Nylon hardware is provided.</td>
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</tbody>
</table>

Output
- Voltage: 0 to -3.5kV
- Load: Tested with 47pF load, 66.7MΩ
- Rise time: ≤ 40ns, 30ns typical at -3.5kV, 25°C
- Recovery: ≤ 150µs
- Pulsewidth: 1 to 3µs at 97%
- T_{delay} in-out: < 300nsec (typical)
- T_{jitter}: < 5nsec (typical)
- Voltage Control: Internal multi-turn trimpot External (add -EXT to part number) When using external mode:
  - 4V control yields 0V output
  - 8.2V control yields -3.5kV output
- Monitor: HV Monitor lead to monitor HV prior to pulse (add -HV to part number)

MTBF: >1,000,000 hours per Bellcore SR-332
- Ground Fixed, Controlled, 25°C

Size: 3.73" L x 1.25" W x 0.48" H
- Weight: 1.8 oz.

Specifications subject to change without notice.

APPLICATIONS:

Driving E-O Q-Switches for Q-Switching Solid-State Lasers, High Voltage Pulser

08/2013
MODEL NUMBER

OUTPUT SWING

<table>
<thead>
<tr>
<th>INPUT VOLTAGE</th>
<th>+15V ± 0.5V</th>
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<tbody>
<tr>
<td>TRIGGER</td>
<td>TTL</td>
</tr>
<tr>
<td>825B-1</td>
<td>825B-2</td>
</tr>
<tr>
<td>TRIGGER</td>
<td>OPTO-ISOLATED</td>
</tr>
<tr>
<td>OUTPUT SWING</td>
<td>0 to -3.5kV</td>
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</table>

Typical Part Number: **825B-2-HV** = Input Voltage: +15V ± 0.5V
Output Voltage: 0 to -3.5kV
Trigger: Opto-isolated, active high current of 2.5mA
Voltage Control: Internal multi-turn trimpot
HV Monitor: HV monitor lead provided to set HV prior to pulsing

* Rotate HV Adjust trimpot counter-clockwise to increase output voltage

CAUTION: Mounting hardware must be Non-Conductive. Nylon hardware is provided.
Output Voltage vs. Maximum Repetition Rate for Various Loads at 25°C, 15VDC Power