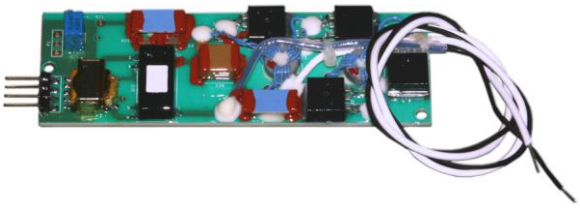
SOLID-STATE POCKELS CELL DRIVER

- **Adjustable Output to -3.5 kV**
- **30 ns Risetime, 150 µs 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 -3.5 kV are available.

SPECIFICATIONS:

Trigger Input	TTL/CMOS compatible, positive logic, >3.0 V, high impedance, internally limited to +5 V via 1 kΩ load (825B-1) Opto-Isolated, active high current of 2.5 mA to 9.0 mA, 2 kΩ impedance (825B-2)
Pulsewidth	≥ 300 ns to 25 µs
Repetition Rate	Up to 100 Hz at 3.5 kV into 47 pF load See graph for alternate voltage/load limits Burst mode permissible
Power	+15 VDC ± 0.5 V at 20 mA to 100 mA depending on PRF and output voltage
Temperature	
Operating	-40° to +85°C
Storage	-55° to +125°C
Connectors	
Input	4 pin connector
Output	12" flying leads

Caution: Mounting hardware must be Non-Conductive. Nylon hardware is provided.

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

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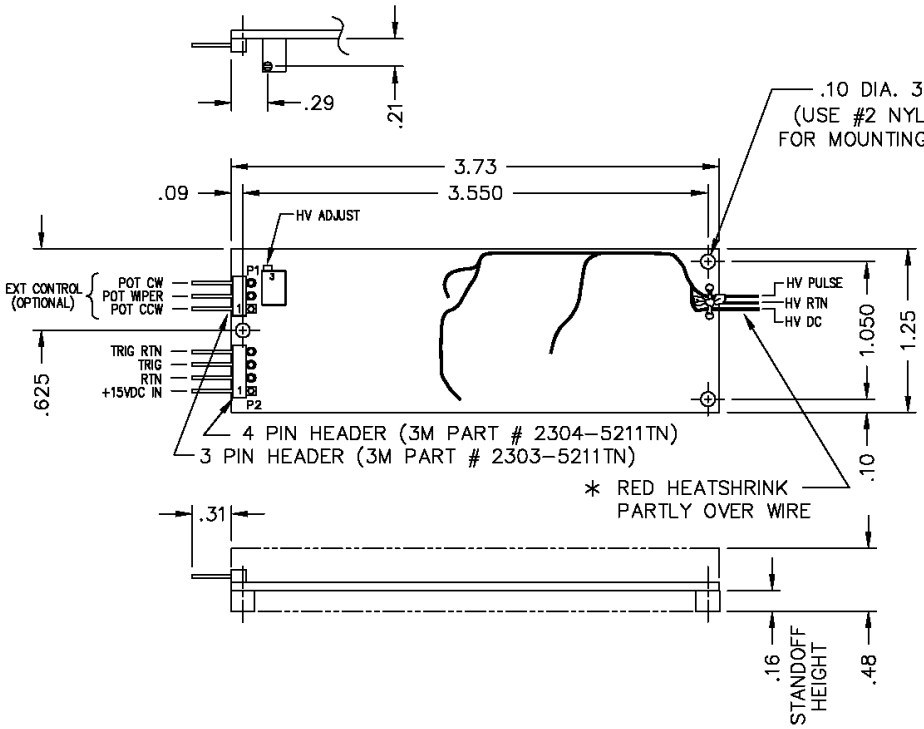
		MODEL NUMBER	
		OUTPUT SWING	
		0 to -3.5 kV	
INPUT VOLTAGE	+15 V ± 0.5 V	**825B-1**	**825B-2**
TRIGGER		TTL	OPTO-ISOLATED

Typical Part Number: ***825B-2-HV*** **=** Input Voltage: +15 V ± 0.5 V
Output Voltage: 0 to -3.5 kV
Trigger: Opto-isolated, active high current of 2.5 mA
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

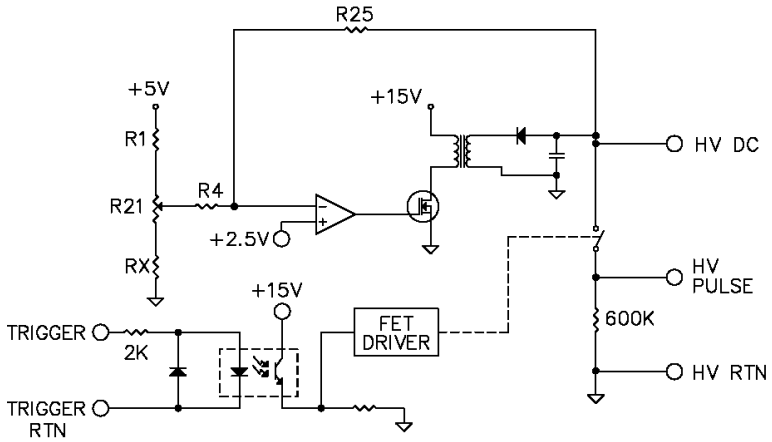


OUTPUT	
SIGNAL NAME	COLOR
HV RTN	BLACK
HV PULSE	WHITE
HV DC	WHT/RED *

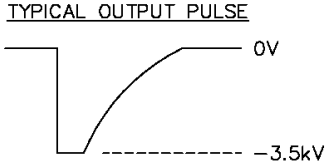
NOTES: UNLESS OTHERWISE SPECIFIED

1. DIMENSIONS ARE IN INCHES.
2. TOL: .XX ± .03, .XXX ± .010
3. .16 LONG MOUNTING SPACERS AND .56 LONG NYLON SCREWS SUPPLIED WITH UNIT.

825B-2 EQUIVALENT SIMPLIFIED CIRCUIT



TYPICAL OUTPUT PULSE



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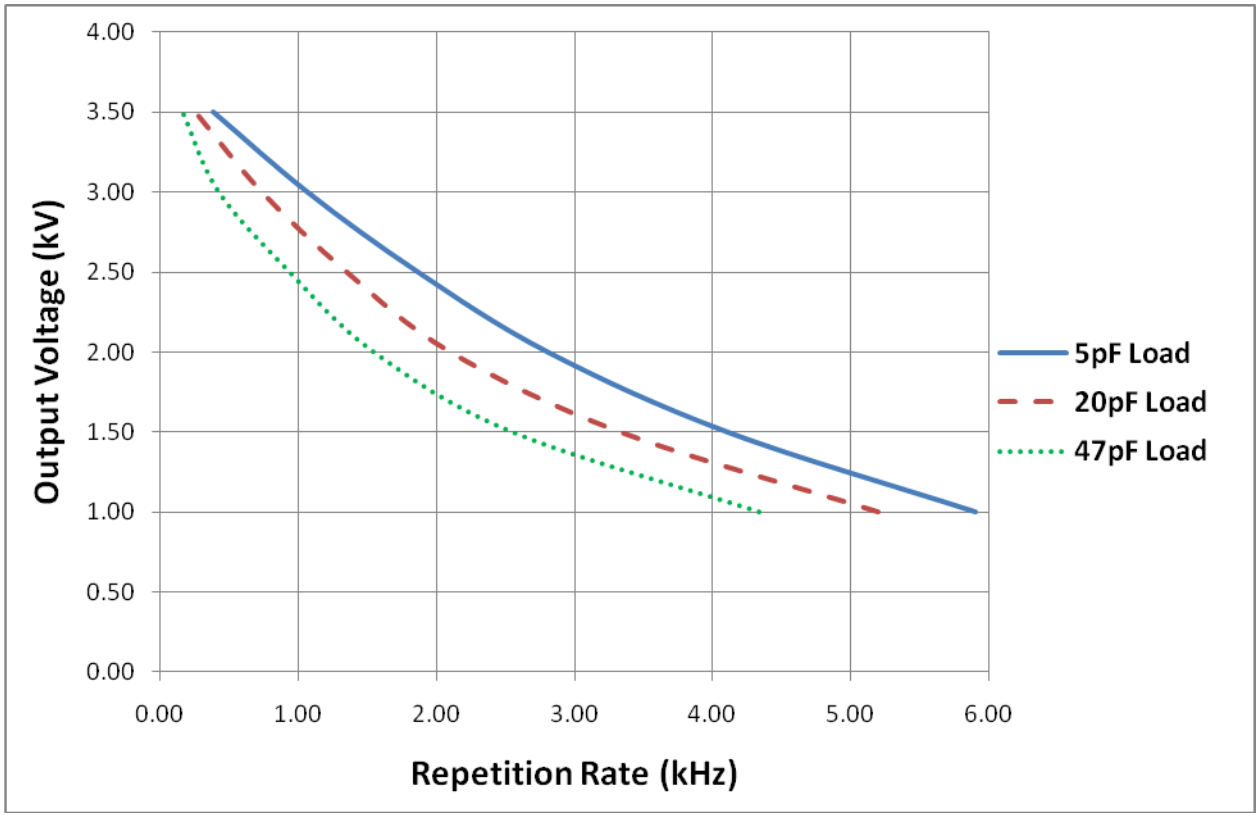
Output Voltage vs. Maximum Repetition Rate for Various Loads at 25°C, 15 VDC Power



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