

# Applied Pulsed Power™

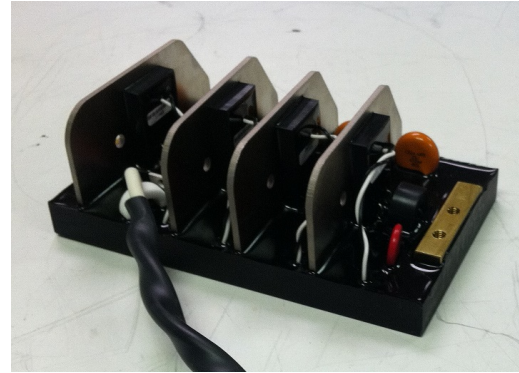
280 Great Valley Parkway  
Malvern, PA 19355-1308

Phone: 610-407-4700  
www.appliedpulsedpower.com

## Model S33B-2-6 Solid State Spark Gap Replacement Switch

A solid state high voltage switch suitable for use in Lithotripters, as a spark gap replacement or to replace thyratrons in lower power applications. This switch features:

- 30kV Peak Off-State Voltage
- 20kA Peak Non-Repetitive Current
- 10kA Ringing Discharge
- 50kA/ $\mu$ S Maximum di/dt



Long Lifetime,  $>2 \times 10^8$  pulses  
Short Turn-on Delay, 150 nsec  
Low Jitter,  $< 2$ nsec

These solid state switches are for applications requiring repetition rates of several hertz. They replace thyratrons eliminating heater requirements, warm-up time, Deuterium and Mercury. Switches for 10kV to 30kV peak off-state voltages are available. Contact [sales@appliedpulsedpower.com](mailto:sales@appliedpulsedpower.com) for more information.

### Operational Ratings (T<sub>j</sub>=80°C, unless otherwise specified)

Peak Off-State Voltage	30000	Volts
Maximum DC Operating Voltage	24000	Volts
Peak Non-Repetitive Current	20000	Amps
Peak Repetitive Current (10 $\mu$ sec pulse)	14000	Amps
Maximum di/dt	50	kA/ $\mu$ Sec
Maximum RMS On-State Current (T <sub>j</sub> =120°C)	200	Amps
Operating Temperature Range	0 to 50	°C
Peak Rate of Reapplication of Off-State Voltage	1000	V/ $\mu$ Sec

### Operational Characteristics

Maximum Leakage Current (T <sub>j</sub> =25°C)	200	$\mu$ Amp
Turn-On Delay	150	nsec
Turn-off Time	1	msec
Jitter	2	nsec

Model S33B-2-6 Solid State Switch Spark Gap Replacement Switch Data Sheet  
Specifications as of May 2017

## Trigger Characteristics

Trigger Voltage	15	Volts
Trigger Current	1	Amps
Trigger Isolation Voltage	40	kV

Along with the S33B-2-6, the model S34B-2 series has 4 other voltage ranges as shown in the following selection guide. All of the S33B-2 series have the same current ratings and trigger characteristics.

### Part Number Selection Guide

Part Number	Peak Off-State Voltage Rating	Maximum DC Voltage Rating	Switch Length	Maximum Thermal Dissipation	On-State Resistance	Off State Resistance
S33B-2-2	10kV	8kV	3.4"	20W	10mΩ	44MΩ
S32B-2-3	15kV	12kV	4.4"	30W	15mΩ	66MΩ
S33B-2-4	20kV	16kV	5.4"	40W	20mΩ	88MΩ
S33B-2-5	25kV	20kV	6.4"	50W	25mΩ	110MΩ
S33B-2-6	30kV	24kV	7.4"	60W	30mΩ	132MΩ

