



# Applied Pulsed Power, Inc.<sup>™</sup>

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## Applied Pulsed Power Solid State Switch Products

We provide solid state switches for many applications with voltages ranging from 4kV to 80kV. Our switches provide fast turn-on, high di/dt, low on-state voltage, low inductance, and can handle ringing discharges. Our switches have been used in commercial, research, medical and defense applications such as Lithotripters, radar, lasers, pulsed electromagnet kicker and injector drivers. Our solid state switches can also be used to replace Thyratrons, Krytrons, and Triggered Spark Gaps. We also make pulsed power systems using our solid state switches.

### Switch Product Summary

Model	S25	S29 or S39	S33	S33A	S34	S38	S46
Peak Current	14kA	Up to 60kA	14kA	14kA	14kA	14kA	14kA
Peak Voltage	8kV	Up to 8kV	Up to 24kV	Up to 48kV	Up to 24kV	4kV	Up to 80kV
Typical Pulse Rate	200Hz	200Hz	10Hz	10Hz	10Hz	200Hz	200Hz
Turn-On Delay	120ns	120ns	200ns	200ns	>1 $\mu$ s	60ns	200ns
On-State Resistance	20m $\Omega$	<2m $\Omega$ [1]	60m $\Omega$ [2]	120 $\Omega$ [3]	60m $\Omega$ [2]	10m $\Omega$	200m $\Omega$ [4]
Turn-Off Time	Up to 5ms	Up to 5ms	Up to 5ms	Up to 5ms	Up to 5ms	Up to 5ms	Up to 5ms
Peak di/dt	40kA/ $\mu$ s	Up to 200kA/ $\mu$ s	40kA/ $\mu$ s	40kA/ $\mu$ s	40kA/ $\mu$ s	40kA/ $\mu$ s	40kA/ $\mu$ s
Peak Temperature	120°C	120°C	120°C	120°C	120°C	120°C	120°C

[1] using a S29-6-1; [2] using a S33-6 or S34-6; [3] using a S33A-12; [4] using a S46-10

### S25 Dual Thyristor Module

- 8kV peak voltage
- 14kA peak current
- Useful for very high power operation
- Uses EA0013 Trigger Circuit



### S29 High Current Module

### S39 High Current Switch

- 4kV or 8kV peak voltage
- 14kA, 20kA, 30kA, 40kA, 50kA, or 60kA peak current
- S29 can be air or liquid cooled
- S39 is air cooled
- Uses EB0046 Trigger Circuit



### S33 Spark Gap Replacement Switch

### S34 Solid State Switch for

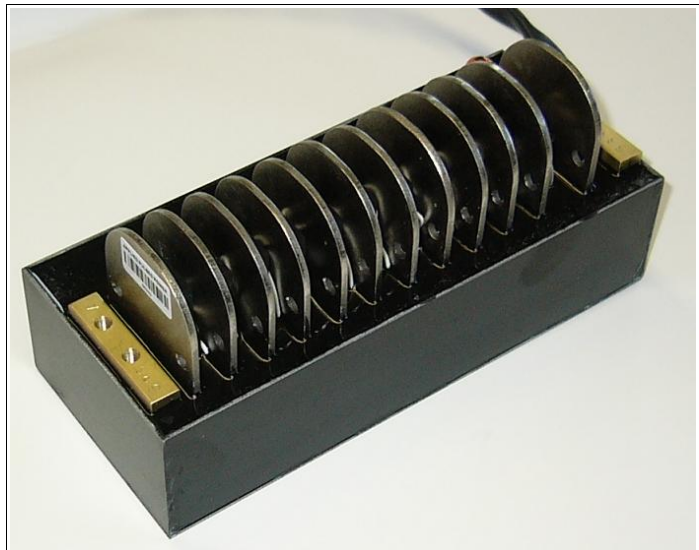
### Lithotripters

- 12kV, 16kV, 20kV, or 24kV peak voltage
- 14kA peak current
- 15V, 1A trigger input
- Can use EA0038 Trigger Circuit
- 24kV switch is 6" long
- Designed for operation with a ringing discharge



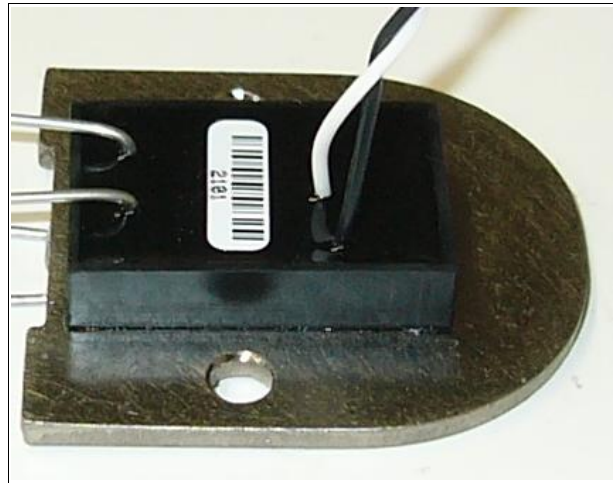
### S33A Compact High Voltage Switch

- 12kV, 16kV, 20kV, 24kV, 28kV, 32kV, 36kV, 40kV, 44kV, 48kV peak voltage
- 14kA peak current
- Electrical or fiber-optic trigger input
- Can use EA0038 Trigger Circuit
- 48kV switch is 7" long



### S38 Module

- 4kV peak voltage
- 14kA peak current
- Can use EA0038 Trigger Circuit
- 40kA/ $\mu$ s peak di/dt



### S46 High Power Switch

- 16kV, 24kV, 32kV, 40kV, 48kV, 56kV, 64kV, 72kV, or 80kV peak voltage
- 14kA Peak Current
- Uses EB0046 Trigger Circuit



### S32 5kV Trigger Generator

### S45 High Voltage Trigger Generator

- Trigger Generators using our solid state switches
- Up to 55kV output trigger voltage



### S50 Custom Switches

Contact [sales@appliedpulsedpower.com](mailto:sales@appliedpulsedpower.com)