



Applied Pulsed Power, Inc.™

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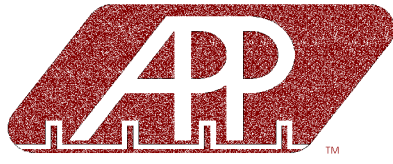
Model S46 Liquid Cooled Solid State Thyatron Replacement

The model S46 is designed to replace a thyatron where liquid cooling is available providing the advantages of a thyristor based solid state switch. APP switches have fast turn on $\sim 100\text{ns}$ and high di/dt capability $>30\text{kA}/\mu\text{s}$ suitable for most pulsed power applications.

This solid state switch consists of multiple APP model S25 Dual Thyristor Modules in series, designed specifically for high di/dt , high voltage, pulsed power applications. The switch uses liquid cooling such as transformer oil or DI water to allow for operation at higher power than our S47 series of switches. An optional trigger control circuit provides the required 1A fast rising pulse required. Switch voltage ratings of up to 80kV are available.

Voltage Ratings ($T_j=80^\circ\text{C}$)

Model	Off-State Voltage	Peak Non-Repetitive Off-State Voltage
S46-2	16kV	20kV
S46-3	24kV	30kV
S46-4	32kV	40kV
S46-5	40kV	50kV
S46-6	48kV	60kV
S46-7	56kV	70kV
S46-8	64kV	80kV
S46-9	72kV	90kV
S46-10	80kV	100kV



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Operational Ratings (T_j=80°C, unless otherwise specified)

Peak Non-Repetitive Current	14000 Amps
Peak Repetitive Current (5μsec pulse, 30pps)	7000 Amps
Peak di/dt	30 kA/μSec
Maximum RMS On-State Current (T _j =120°C)	100 Amps
Operating Temperature Range	0 to 60 °C
Peak Rate of Reapplication of Off-State Voltage	1000 V/μSec

Operational Characteristics

Typical Leakage Current	(T _j =25°C)	200 μAmp
	(T _j =80°C)	200 μAmp
	(T _j =120°C)	800 μAmp
Turn-On Delay (from external trigger)		120 nSec
Turn-On Delay Jitter		<2 nSec
Turn-Off Time	(T _j =25°C)	1 mSec
	(T _j =60°C)	2 mSec
	(T _j =120°C)	5 mSec

Model	Height at 10" (250mm) Diameter
S46-2	5" (125mm)
S46-3	7" (175mm)
S46-4	9" (225mm)
S46-5	11" (275mm)
S46-6	13" (325mm)
S46-7	15" (375 mm)
S46-8	17" (425mm)
S46-9	19" (475mm)
S46-10	21" (525mm)

APP has a wide selection of commercial switches and can also supply custom switches to meet your pulsed power switching needs. APP also provides complete pulsed power systems. Contact sales at sales@appliedpulsedpower.com for more information.