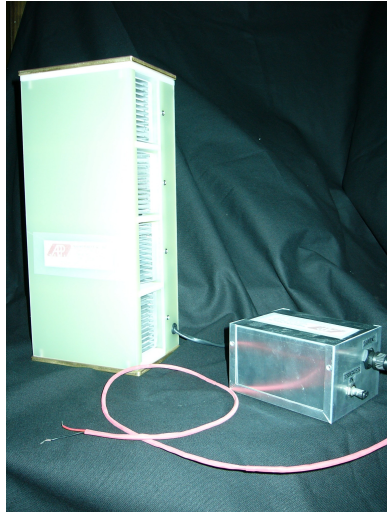




Applied Pulsed Power, Inc.™

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Model S47 Forced Air Cooled Solid State Thyatron Replacement

The model S47 is designed to replace an air cooled thyatron 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 air cooling to allow for operation at higher power than our S33 series of switches. An optional trigger control circuit provides the required 1A fast rising pulse required. Switch voltage ratings of up to 48kV are available.

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

Model	Off-State Voltage	Peak Non-Repetitive Off-State Voltage
S47-2	16kV	20kV
S47-3	24kV	30kV
S47-4	32kV	40kV
S47-5	40kV	50kV
S47-6	48kV	60kV

Operational Ratings ($T_j=80^\circ\text{C}$, unless otherwise specified)

Peak Non-Repetitive Current	14000 Amps
Peak Repetitive Current (5 μsec pulse, 30pps)	7000 Amps
Peak di/dt	30 $\text{kA}/\mu\text{Sec}$
Maximum RMS On-State Current ($T_j=120^\circ\text{C}$)	100 Amps



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Model S47 Forced Air Cooled Solid State Thyatron Replacement Preliminary Data Sheet Page 2 of 2

Operational Ratings (continued)

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 (using APP Trigger Control Circuit)		250	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	Dimensions
S47-2	8" x 7" x 5" (200mm x 170mm x 120mm)
S47-3	12" x 7" x 5" (300mm x 170mm x 120mm)
S47-4	16" x 7" x 5" (400mm x 170mm x 120mm)
S47-5	20" x 7" x 5" (500mm x 170mm x 120mm)
S47-6	24" x 7" x 5" (600mm x 170mm x 120mm)

Trigger Control Circuit Parameters

Trigger Input Options:	Electrical such as TTL or Fiber Optic
Power Options:	24VDC or optionally other voltages such as 120VAC, 12VDC
24VDC Quiescent Current	<100 mAmp
24VDC Peak Current	<1 Amp

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.