

Model SPPS-M1504-D-FC
Compact 4 kV Thyristor Switch Module
With Self-Powered, Fiber-Optic Triggering



Designed for pulsed power applications using a high peak-current thyristor and anti-parallel diode. Self-powered, type ST fiber-optic trigger input allows controls to be isolated from switch. Optimized for fast turn-on, low jitter and low on-state resistance for high peak current applications.

Operational Parameters

Parameter		Test Condition	Rating	Unit
Peak Blocking Voltage	V_{RRM}	25 °C, Transient	4.8	kV
Forward Blocking Voltage	V_R	25 °C, Continuous	4	kV
Peak Leakage Current	I_R	25 °C, $V_{AK}=4$ kV	1	mA
Peak Forward Current	I_{FSM}	25 °C, 1 μ s	15	kA
		25 °C, 10 μ s	6	kA
Peak Reverse Current	I_{RSM}	25 °C, 1 μ s	6	kA
		25 °C, 10 μ s	4	kA
Peak Rate of Current Rise	di/dt_c	25 °C	20	kA/ μ s
Forward slope resistance	r_T	25 °C	10	m Ω
Reverse slope resistance	r_T	25 °C	40	m Ω
Holding Current	I_H	25 °C	200	A
Thyristor Recovery Time	T_{RR}	25 °C	50	μ s
Diode Recovery Time	T_{RR}	25 °C	100	ns
Capacitance	C_{AK}	25 °C, $V_{AK}=4$ kV	2.6	nF
Pulse Frequency	PRR	10 kA, 1 μ s $T_c = 40$ °C	0-4	Hz
Storage Temperature Range	T_{Sig}	$V_{AK}=0$ kV	0-60	°C
Trigger Delay	t_d	25 °C, $V_{AK}=2$ kV	150	ns
Jitter	t_j	25 °C, $V_{AK}=2$ kV	<1.5	ns
Recommended Trigger Power	P_T	850 nm	1	mW
Recommended Trigger Pulse	t_{PW}	25 °C	1	μ s

Features

- High Peak Current Rating
- Fast Recovery
- Easy Triggering
- Low Inductance

Applications

- Pulsed Capacitor Discharge
- Solid-State Crowbar
- Pulsed Electromagnetic Field Therapy (PEMF)
- Extra-corporeal Shock Wave Therapy (ESWT)

PRELIMINARY DATA

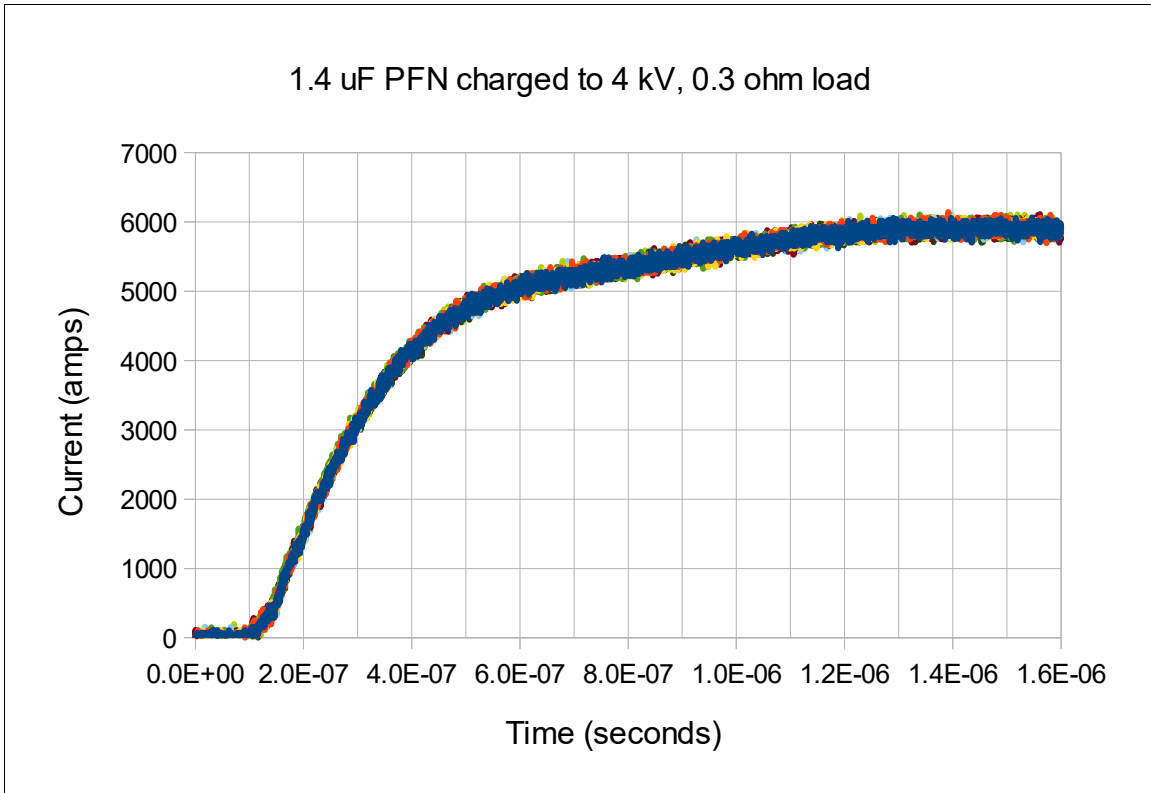


Figure 1: SPPS-M1504-D-FC Output with Overlaid Multiple Pulses

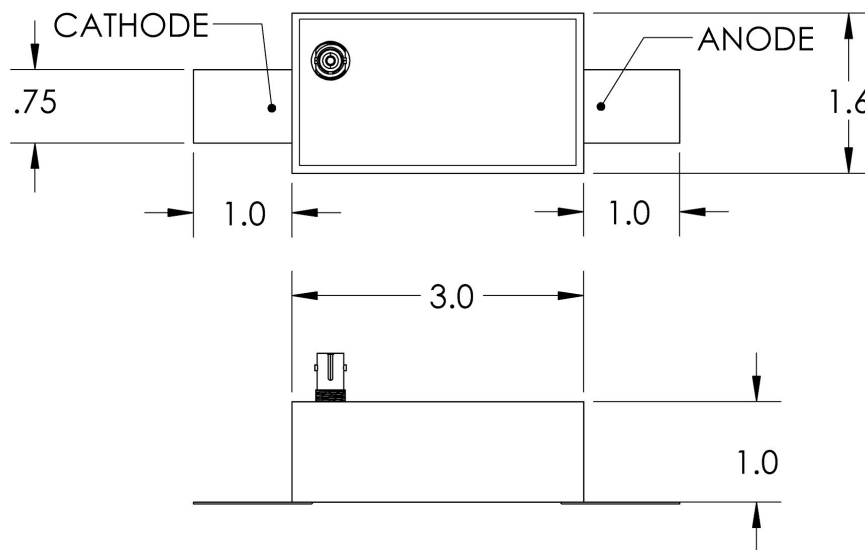


Figure 2: SPPS-M1504-D-FC Dimensions (Inches)