

# High Voltage HEMP Filters

*Surge Suppressors shunt potentially damaging energy to ground*

## What are Hazardous Transient Threats?

A Hazardous Transient Threat is any unexpected or unanticipated change in voltage caused by an unpredictable and sometimes unprecedented occurrence. Very often it is a random electrical phenomenon such as a high voltage or current pulse for a brief duration of time.

## Transient threats are categorized into the following groups:

1. Electromagnetic Pulse (EMP)
2. High-altitude Electromagnetic Pulse (HEMP)
3. Nuclear Electromagnetic Pulse (NEMP)
4. Inductive Switching (EMI)
5. Lightning Strike
6. Electrostatic Discharge (ESD)



High Voltage HEMP Filters are designed to protect sensitive electronics equipment during hazardous transient conditions. They are employed to absorb a potentially destructive overshoot voltage. Under normal operating conditions, the suppressor circuit exhibits high off-state impedance that appears transparent to the circuits they protect. If a voltage exceeding the switching voltage is applied to the circuit, the suppressor circuit switches to very low impedance effectively shorting out the high voltage. The suppressor circuit will remain in the low impedance state until the current flowing through the suppressor is either interrupted or drops to a safe level. Once this occurs, the suppressor resets and returns to a high off-state impedance.

These High Voltage HEMP Filters will also help meet the requirements of MIL-STD-188-125.

## Electrical

- Capacitance Rating: Typically less than 5pF per circuit
- Clamping Voltage: Can be specified from 8 volts to 700 volts
- Number of Circuits: Limited only by case size, typically up to 50

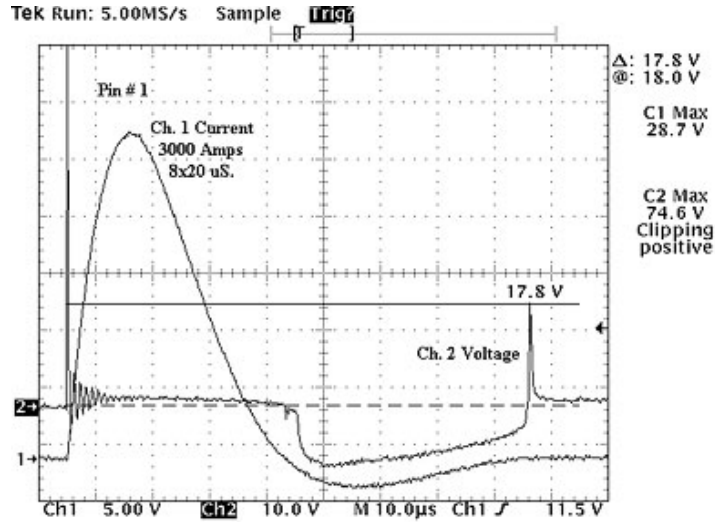
## Mechanical

- Connections: MIL Circular "D" Connector, Terminal Block, RJ Connector Terminal Lugs, etc.
- Mounting: Captive Nut Inserts, Locking Inserts, Flanges, etc.
- Dimensions: Typical API case is 3.5"x2.5"x2.5" but will consider any case size and custom shapes

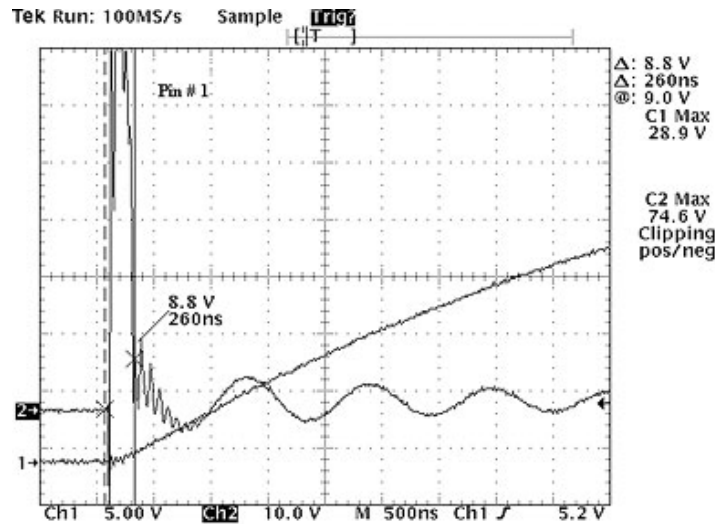
## Environmental

- Manufactured to meet typical military environmental requirements

# 8x20 $\mu$ S High Voltage, High Current Test



Test Lab results of an 8x20 $\mu$ S pulse with a voltage of 5.6 kV and a current of 3 kA.



A return lightning strike can contain currents in excess of 200,000 Amps. It can be stated, that “lightning is predictably unpredictable.” It will not only take the easiest path to ground, but it can take all available paths to ground as well.