

# Capacitor standards for power supply equipment

Which capacitor should I use for my power supply?

Capacitive power supplies designed for long load life require capacitors with foils and dimensions specifically designed for this application. For its capacitance stability and ruggedness, we recommend using THB film capacitors like the W&#252;rth supply applications.

What are the EMC standards for power supplies?

This application note provides a general description of the EMC standards for power supplies, including the test levels and an explanation of the different performance criteria that can be met for each standard. One of the least well-defined specifications on a power supply datasheet are the IEC/EN61000-3 and -4 standards.

What is the operating frequency of a capacitor?

This International Standard applies to capacitors for power electronics applications. The operating frequency of the systems in which these capacitors are used is usually up to 15 kHz, while the pulse frequencies may be up to 5 to 10 times the operating frequency. The document...

What is a good capacitance for a capacitor?

Capacitance variation due to operating voltage and temperature must be very low to keep the available load current stable. Capacitance drop during the lifetime of the capacitor must also be kept very low. For most applications with this topology, the input capacitance will be between 100 nF and 1000 nF.

Can a capacitive power supply have a low power factor?

The low power factor is not an issue because the capacitive power supply power rating is not high enough for a power factor correction (PFC) to be required. The Standard IEC 61000-3-2 requires PFC for power supplies only with a power output of more than 25 W.

## 04. CONSTRUCTION OF A CAPACITIVE POWER SUPPLY

Are X and Y capacitors a safety hazard?

The X capacitors cited in the standards are greater than 0.1  $\mu$ F. These X capacitors are to be discharged to less than 34 V peak in 1 second after the power plug is removed from the socket. While it's only the X capacitors that pose the safety hazard, the Y capacitors are important to the discussion because they contribute to the ac leakage current.

The equipment should not interfere with other systems ... -For example: the AC/DC power supply should operate normally in noisy environment with heavy machinery

### 3. EMI challenges ...

IEC62368 applies to IT equipment and video and audio equipment, while the IEC60335 concerns appliances. Meanwhile, UL/EN/IEC 60950 is the harmonized standard for power supplies. UL has regulated the discharge

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of X capacitors ...

Capacitors employed in power supplies for IEC950 applications (including those in potted RFI filters): No UL standard applies. Capacitors must comply with the appropriate IEC standard. ...

This type of power supply uses the capacitive reactance of a capacitor to reduce the mains voltage to a lower voltage to power the electronics circuit. The circuit is a ...

This part of IEC 60384 applies to capacitors and resistor-capacitor combinations intended to be connected to AC mains or other supply with a nominal voltage not exceeding 1 000 V AC ...

This International Standard applies to capacitors for power electronics applications. The operating frequency of the systems in which these capacitors are used is ...

Today, there are standards tailored for the specific operating conditions of various applications, ranging from data center power supplies to white goods, LED light bulbs, electric vehicle battery chargers, photovoltaic ...

The equipment designed to use AC tends to require large amounts of voltage, so the voltage is not stepped down as frequently as equipment using DC. ... Can I use a 30 V power supply with a temperature controller whose specifications ...

1.1 This Standard covers the sorting and grading process of battery packs, modules and cells and electrochemical capacitors that were originally configured and used for ...

Feed-through capacitors with a value of 10 uF are made so that they can be used in RFI/EMI test setups like MIL-STD-461A/462A. Now, many other standards, such as RTCA DO-160G, ...

The critical design component in a capacitive power supply is the input capacitor. In theory class X2 capacitors are electrically suited for that but this is not the intended use of X2 capacitors as ...

higher transmission losses, and reduced equipment capacity. Power capacitors inject leading reactive power into the system, counteracting the lagging reactive power consumed by ...

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IEC 62823:2015 defines routine and type tests on thyristor valves used in thyristor controlled series capacitor (TCSC) installations for a.c. power transmission. The tests ...

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IEC 60601-1 Follow Avnet Abacus on LinkedIn Power supplies designed for use with ...

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