

## SolarGrid Energy Solutions

# Super high temperature resistant capacitor



## Overview

---

Ceramic, tantalum, plastic film, glass and diamond-like capacitors have established reliability in the ultra-high temperature arena above 170 C, while solid aluminum, silicon and aluminum oxynitride are emerging technologies that have market potential. What is a high temperature resistance film capacitor?

Murata's high temperature resistance film capacitors (FH series) have outstanding heat resistance compared to conventional film capacitors. Moreover, these capacitors realize a reduction in size by using a film with a high dielectric constant.

Are high-temperature capacitors reliable?

The lack of reliable high-temperature, high value capacitors has almost certainly limited growth in these newer applications. Most current capacitor technologies on the market, such as aluminium electrolytics or film capacitors, are limited to a maximum temperature range of 125oC - 150oC or even lower.

What is the maximum temperature a capacitor can withstand?

Most current capacitor technologies on the market, such as aluminium electrolytics or film capacitors, are limited to a maximum temperature range of 125oC - 150oC or even lower. To achieve higher temperature ratings, ceramics and tantalum capacitors are used. In downhole electronics, high temperature is usually classified as 150oC and above.

What is a high-temperature capacitor?

High-temperature designs incorporate metals such as tin, palladium-silver and gold plating which have melting points well above the temperature rating of the capacitor. These materials perform well at elevated temperatures and should be considered a critical part of the construction in such a demanding environment.

Can flexible supercapacitors operate at high temperatures?

The development of flexible supercapacitors (FSCs) capable of operating at high temperatures is crucial for expanding the application areas and operating conditions of supercapacitors. Gel polymer electrolytes and electrode materials stand as two key components that significantly impact the efficacy of high-temperature-tolerant FSCs (HT-FSCs).

What type of capacitor is used in high temperature applications?

The supply of high-temperature ceramic capacitors for applications above 175 C is highly fragmented, with many of the smaller, more specialized vendors of ceramic capacitors offering a variation on the high temperature ceramic capacitor. Tantalum – Certain types of tantalum capacitor designs are used in high temperature applications.

## Super high temperature resistant capacitor



### High Temperature Supercapacitor, High Temp Ultra Super Capacitors

High temperature 85?; Rated voltage 2.7V 1000 hours; Surge voltage 2.85V; Capacity range 1.0F~100F; Operating temperature range -40 ~ +85?; Capacity attenuation <= 30%, internal ...

### Supercapacitor application guidelines

Jan 28, 2025 · Lifetime Eaton supercapacitors have a longer lifetime than secondary batteries, but their lifetime is not infinite. The basic end-of-life failure mode for a supercapacitor is an ...



### High Temperature Capacitors - Mouser

High Temperature Capacitors are available at Mouser Electronics. Mouser offers inventory, pricing, & datasheets for High Temperature Capacitors.

### Supercapacitors Basics:

## Understanding the Core ...

Dec 29, 2024 · The most common type is the electrochemical double-layer capacitor (EDLC). Super-capacitors are constructed from two electrodes, an ...

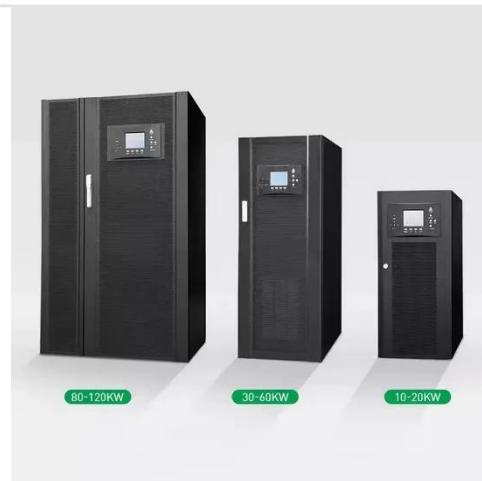


## High-temperature resistant polypropylene films ...

Feb 19, 2021 · Film Capacitors with high-energy storage density, high-temperature stability and charge-discharge efficiency are highly desirable in ...

## Robust High-Temperature Supercapacitors ...

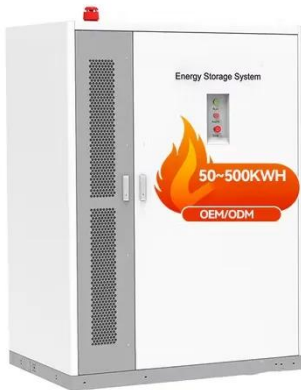
Nov 25, 2020 · High-temperature supercapacitors (SCs) based on SiC nanowires are reported. The as-constructed ionic-liquid-based SCs could be robust ...



## Presidio Components High Temperature Ceramic Capacitors ...

Jul 15, 2025 · Presidio Components High Temperature ceramic capacitors, 250 and above, High Temp caps and Chips, High temp high voltage chips, SMPS

stacked, high voltage radial ...



## High-Temperature Capacitors

Aug 15, 2025 · AC high temperature ceramic disc capacitors Dissipation factor of  $\leq 2.5\%$  Insulation resistance of 10,000 MO min at 100Vdc over 1 minute



## Supercapacitor Frequently Asked Questions

Dec 28, 2020 · This includes the internal resistance of the capacitor to account for the sudden voltage drop associated with an applied current, the ambient operating temperature which ...

## Supercapacitors: An Emerging Energy Storage ...

Mar 13, 2025 · Electrodes of supercapacitors should possess high conductivity, high-temperature stability, chemical inertness, corrosion resistance,

high ...



### **A critical review of recent advancements in high-temperature**

Feb 25, 2024 · Addresses the reliability of the High-temperature Supercapacitor (HTSc) under extreme conditions. Discusses HTSc principles, temperature influence, and elevated ...

### **High temperature solid-state supercapacitor designed with ...**

Sep 1, 2019 · To date, the design of high temperature electrochemical double layer capacitors (EDLCs) remains a challenge more specifically related to the electrolyte. The electrochemical ...



### **High temperature ceramic capacitors**

Excellent temperature resistance, high volume/capacitance ratio, electrical properties and reliability make Exxelia's ceramic capacitors ideal for a wide ...



---

## High-temperature polyimide dielectric materials ...

Oct 11, 2021 · Abstract Dielectric capacitors with a high operating temperature applied in electric vehicles, aerospace and underground exploration require ...



---

## High Temperature Supercapacitor, High Temp Ultra Super Capacitors

5.5V high temperature 85? series typical applications: RAM, detonator, car recorder, smart meter, vacuum switch, digital camera, motor drive and so on. Kamcap supercapacitor is widely ...

---

## High-frequency supercapacitors surpassing ...

Apr 18, 2025 · The prosperity of microelectronics has intensified the requirement for miniaturized power systems using capacitors with high



capacity and broad ...



## Capacitors for High Temperature Applications

Sep 13, 2021 · Most current capacitor technologies on the market, such as aluminium electrolytics or film capacitors, are limited to a maximum temperature range of 125oC - 150oC or even ...

## New Supercapacitors / Ultracapacitors

Oct 17, 2024 · Eaton Electronics HSH Hybrid Supercapacitors are high-reliability, high-power, ultra-high capacitance energy storage devices utilizing proprietary materials and processes. ...



## Capacitor Characteristics/Specifications

Capacitor Specifications Temperature Coefficient The Temperature Coefficient



of a capacitor is a specification that tells us how much the capacitance varies with temperature. We must take ...

## High Temperature Film Capacitor , Murata ...

Jul 25, 2017 · High Temperature Film Capacitor Murata's high temperature resistance film capacitors (FH series) have outstanding heat resistance ...



## 3.8V 120F Li Capacitor High Temperature ...

Professional Manufacturer of Lithium Ion Capacitors-Xuansn Lithium-ion capacitor is a new energy storage device between electric double layer capacitor and ...

## High-temperature-tolerant flexible supercapacitors: Gel ...

Jan 1, 2025 · The development of flexible supercapacitors (FSCs) capable of operating at high temperatures is crucial for expanding the application areas and

operating conditions of ...



### **Impact-resistant supercapacitor by hydrogel-infused lattice**

Aug 1, 2024 · Here we present an impact-resistant, ready-to-use supercapacitor constructed from self-healable hydrogel electrolyte-infused lattice electrodes.

### **High Temperature Film Capacitor , Murata Manufacturing ...**

Jul 25, 2017 · Murata's high temperature resistance film capacitors (FH series) have outstanding heat resistance compared to conventional film capacitors. Moreover, these capacitors realize a ...



### **High Temperature**

4 days ago · KYOCERA AVX's new high temperature chip capacitor product line, with verified capability of longterm operation up to 250°C is a response to

both ...



## Silicon Capacitors with extremely high stability and ...

Mar 28, 2019 · 2. High-density 3D Silicon Capacitors The capacitors are fabricated in reactive ion etching etched arrays of macropores with high aspect ratios up to 60 with a typical width of 1 ...

**12.8V 100Ah**



## High-Temperature Capacitors: New Applications ...

Nov 18, 2021 · Ceramic, tantalum, plastic film, glass and diamond-like capacitors have established reliability in the ultra-high temperature arena above 170 C, ...

## High Temperature Capacitors

Jun 17, 2024 · High Temperature Capacitors Wright Capacitors, Inc's Class I NPO, N2200 and Class II dielectrics are all suitable for 200°C and beyond. WCI provides custom capacitors for ...



### High Temperature Ceramic Capacitors for Deep Well ...

Aug 15, 2025 · Abstract Temperature requirements for ceramic capacitors have increased significantly with recent advances in deep-well drilling technology. Increasing demand for oil ...



?????/????????????????????

May 14, 2024 · In recent decades, enhancing the high-temperature resistance of capacitor films was a research focus, but largescale-producing high-temperature resistant films remains a ...



## Contact Us

For catalog requests, pricing, or partnerships, please visit:  
<https://www.wf-budownictwo.pl>