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# **Uninterruptible power supply over-temperature protection module**





## Overview

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Why do power management chips need over-temperature protection?

Power management chips are damaged to varying degrees when they work at the ambient temperature beyond their acceptable range, and the over-temperature protection circuit plays an important role in improving the reliability and robustness of this kind of chip.

What are the different types of over temperature protection circuit?

This work introduces and compares four types of over temperature protection circuit in 0.25  $\mu\text{m}$  BCD technology. The core temperature detection circuit of the four types are formed by a single BJT, double BJT, double MOSFET, BJT and MOSFET, respectively.

Why do power converters need temperature protection?

In order to protect the power converter and the back-end circuits, temperature protection is necessary in the design. Over Temperature Protection (OTP) is used to prevent the power converter to avoid operating continuously over temperature condition and then cause component damage.

Can a programmable temperature switch IC improve over-temperature protection?

This article implements an over-temperature protection experiment, using a programmable temperature switch IC to reduce the complexity of circuit design and improve functionality, and finally combine with a power converter to realize the over-temperature protection function.



## Uninterruptible power supply over-temperature protection module



### The Way of Over-Temperature Protection

Oct 30, 2023 · Recently, many overheating electronic devices have damaged power transistors, shortened the life of transformers, and even caused system mis-operation. Therefore, when ...



### Overcurrent and Overtemperature Protection for Solid ...

May 11, 2022 · System Description This reference design shows how to achieve a solid state relay solution with overcurrent and overtemperature protection, using the reinforced isolated switch ...

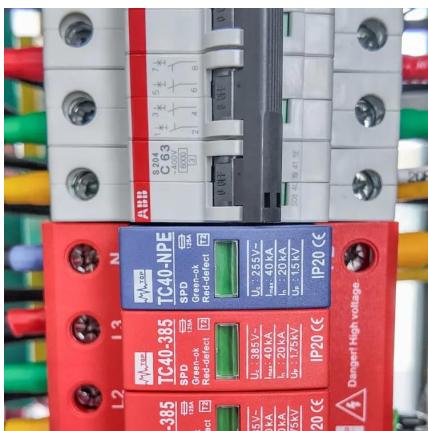


### **A simplified over-temperature protection structure for smart power ...**

Apr 9, 2022 · This work introduces and compares four types of over temperature protection circuit in 0.25 um BCD technology. The core temperature detection circuit of the four types are ...

### Use ST Lab Math software to design an effective over ...

May 16, 2014 · The first step, to design proper over-temperature protection circuitry, is to simulate the nominal working conditions of the final application. Parameters such as switching ...



## Over Temperature Protection Circuits for Integrated Power ...

May 21, 2018 · Integrated power converters suffer from overheating when they operate under extreme conditions. To prevent destructive breakdown an over-temperature protection (OTP)

...

## **Design of High Precision Over-Temperature Protection Circuit for Power**

Abstract: Power management chips is damaged to varying degrees when they work at the ambient temperature beyond their acceptable range, and the over-temperature protection ...



## A simplified over-temperature protection structure for ...

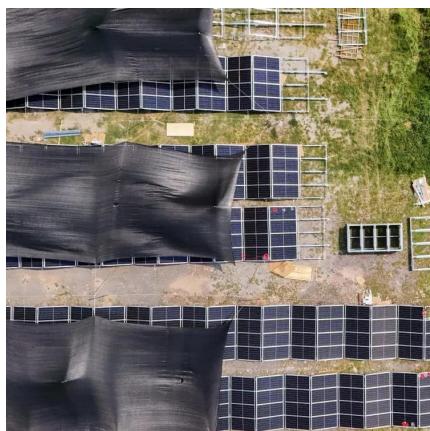
Aug 11, 2022 · BCD technology a reliable over-temperature sensing and protection circuit is essential for the health operation of power system. The principle of OTPC is: first, to monitor

...



## A Novel Reliability-Enhanced Dual Over-Temperature Protection ...

Oct 6, 2023 · This brief presents a novel over-temperature protection (OTP) technique with absolute OTP, dynamic OTP, and the thermal-restart function. Absolute OTP operates when ...



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