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加热、电焊等特种电源

# 固态功率控制器感性负载下的续流特性分析

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# Analysis of Continuous Current Characteristics of Solid-state Power Controller under Inductive Load

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## 摘要

结合我国空间站用固态功率控制器的保护特性，对其在不同关断模式下的续流特性进行了理论分析，并通过建模仿真给出了不同感性负载下关断电流对功率回路MOSFET、二极管关键半导体器件的电、热应力影响，最后给出了固态功率控制器感性负载下的使用注意事项，对固态功率控制器安全性设计及使用具有一定的参考意义。

## Abstract

Based on the protection characteristics of a solid-state power controller（SSPC） used in space stations of China, its continuous current characteristics in different shutdown modes are analyzed theoretically. Then, the influences of shutdown current on the electric and thermal stress in key semiconductor components（e.g., power MOSFET and diode） under different inductive loads are simulated. Finally, the precautions for the use of SSPC under inductive load are given, which can be helpful for its safety design and applications.

## 关键词

固态功率控制器;感性负载;续流特性

## Key words

solid-state power controller（SSPC）;inductive load;continuous current characteristics



## 引用本文



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