Solid state power controller aircraft

What is a solid state power controller (SSPC)?
Solid State Power Controllers (SSPCs) have significantly altered the landscape of power management and distribution in aerospace applications. Moving away from traditional electromechanical relays and circuit breakers, SSPCs offer a level of previously unattainable precision and reliability.

Can sspcs be used in aircraft HVDC power distribution?
This paper presents systematic solutions to the potential problems and challenges associated with the use of SSPCs in aircraft HVDC power distribution, such as excessive power dissipation as a result of high voltage drop across the SSPC, leakage, "fail shorted", nuisance trips due to lightning strikes, and high inrush currents to capacitive loads.

Which SSPC solution should be used for future aircraft?
After comparing the conduction losses,maximum junction temperature,power density,weight and volume,the single device solutionis recommended as a preferable SSPC option for future aircraft. The thermal images of the SSPCs during steady-state operation with 100 A current. References is not available for this document. Need Help?

Can sspcs be used for 28V DC aircraft onboard network?
Although the high-voltage direct current (HVDC) electrical system can bring sustainable savings on the cables' weight and losses,the protection can be considerably challenging. SSPCs have been successfully utilized for 28V DC aircraft onboard network.

What is a solid state distribution system?
Collins Aerospace's solid state distribution systems are the standard on numerous airplane platforms with over 2 million devices in service. Our systems are designed to provide power distribution functionality for the aircraft of today and tomorrow.

Are high-power sspcs suitable for a 270vdc network?
This paper tries to fill this gap and presents the development of high-power SSPCs for a ±270VDC network of a future turboprop aircraft. Comprehensive designs of proper over-voltage suppression along with SSPC thermal management are presented in this paper.

Solid State Power Controllers (SSPCs) have significantly altered the landscape of power management and distribution in aerospace applications. Moving away from traditional ...

The SSPC is a kind of smart solid-state electrical switch based on semiconductor power devices (such as MOSFETs, SCR, and IGBT) with functions such as inverse-time ...

Global Aircraft Electrical Solid-State Power Controller (SSPC) Market Size, Share, Trends, Forecast,

Solid state power controller aircraft

Competitive Analysis, and Growth Opportunity: 2024-2032 ... The global aircraft electrical solid-state power controller or SSPC ...

SSPCs have been successfully utilized for 28V DC aircraft onboard network. However, high-voltage ones are impeded by the vast over-voltage and the excessive losses generated from SSPC switching....

In book: NEIS Conference 2016 (pp.26-31) Edition: 2017; Chapter: Self-testing Solid-State Power Controller for High-Voltage-DC Aircraft Applications; Publisher: Springer Vieweg, Wiesbaden

Abstract: Solid State Power Controller (SSPC) is gaining popularity, replacing mechanical switches and circuit breakers, in niche markets like electrical power distribution systems of the ...

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BOHEMIA, N.Y., 13 Jan. 2016. Data Device Corp. (DDC) is introducing a 10-Channel, 120-amp, 115 volts AC solid-state power controller (SSPC) certifiable to DO-160, for use in mission system and non ...

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Solid state power controllers (SSPC) are semiconductor devices that control power (voltage and/or current) supplied to a load. They perform supervisory and diagnostic functions in order to identify overload conditions and prevent short ...

DONG et al.: DEVELOPMENT OF HIGH-POWER BIDIRECTIONAL DC SSPC FOR AIRCRAFT APPLICATIONS 5499 TABLE I REPORTEDHIGH-POWER ORHIGH ...

A Design of Solid State Power Controller for a bidirectional DC-DC Converter in an aeronautic context Hassan Cheaito, Bruno Allard, Guy Clerc, Joris Pallier, Pascal Pommier ...

The high-power solid-state power controller (SSPC) will be a critical component for the future electrified aircraft propulsion system. This article presents the development of a 1 kV 500 A ...

Nowadays solid-state power controllers (SSPC) are widely used in aircraft secondary power supply, because of a higher count of switching cycles, small weight, flexible trip behavior, and a ...

Solid state power controllers (SSPC"s) are to be considered for use as replacements of electromechanical relays and circuit breakers in future spacecraft and aircraft. They satisfy the ...

GE Aerospace"s best in class Silicon Carbide solid state power switches, combined with its high-power

electrical systems design skills, allows it to create a range of invertor, ...

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solid-state power controller with 238A total current rating was designed to be used in solid-state power distribution unit. ... power aircraft subsystems that were previously ...

Solid-state power controllers can be designed to meet the stringent performance and reliability requirements for aircraft electrical systems. Every stage in the design requires complete ...

The aircraft solid-state power controller (SSPC) market is estimated to grow at a CAGR of 5.3% over the next eight years to reach US$ 478 million by 2032. A gradual shift from traditional ...

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