

Use case

Eaton 2822HC high-power brick fuses



Eaton provides reliable circuit protection in servers

With the exponential rise in the creation, storage, and processing of information from consumer, computing, and industrial applications across the globe, maintaining server uptime is essential for data centers. Power outages are one of the primary contributing factors of data center servers' operational downtime, costing facilities significant revenue, time, and reputational damage. Brownouts are of similar concern, causing limited processing capabilities for servers and clients over shorter time frames.

Servers are essential pieces of computing infrastructure responsible for providing data, services, and resources to other computers over a shared network. With

increased dependency on Cloud computing, machine learning, and the adoption of Internet of Things (IoT) applications, the need for reliable servers is more critical than ever to handle high data traffic and a massive number of connections. To ensure maximum uptime of servers, circuit protection is vital. Overcurrent and short circuits are two of the most frequent causes of power outages in servers. Circuit protection elements, such as fuses, help protect sensitive components from damage by opening the circuit in the event of a surge. They also indirectly aid thermal management by preventing overheating due to short-circuiting, which could deteriorate or damage sensitive components such as ICs.

Due to higher current and voltage ratings required for higher computing capabilities, high-power fuses are an essential requirement in servers. Moreover, due to rapid miniaturization of servers, circuit protection elements need to be smaller than ever, while ensuring adequate protection for power-hungry hardware. Surface-mount fuses offer a host of benefits over through-hole designs for overcurrent protection in servers. Notably, their smaller footprints allow for a higher number of fuses to be integrated on a PCB. Also, the monolithic structure of SMD fuses makes them less susceptible to mechanical damage than through-hole types and allows for higher current ratings with stable operating

characteristics over a wide temperature range.

Eaton Bussmann™ series 2822HC high-power brick fuses provide reliable overcurrent protection in servers with ultra-high current carrying capability from 40 A to 125 A and a 1000 A interrupting rating at rated voltage (40-100 A @ 72 Vdc, 125 A @ 60 Vdc). These SMD fuses are available in a compact 7.6 mm x 6.0 mm (2822 EIA) footprint for optimal space savings in component-dense server designs. Eaton's 2822HC provides a single-fuse solution for high-current applications compared to using larger, oversized fuses or paralleling smaller-rated fuses for equivalent current-carrying capability. Each 2822HC fuse is UL recognized for superior reliability.

Eaton
Electronics Division
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com/electronics

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