

Component Specification: Pyro-Actuated Fast-Acting Semiconductor DC Fuses

Overview

This document specifies the mechanical, electrical, and triggering parameters for the ultra-fast pyrotechnic and semiconductor protection fuses deployed within the **Megapack X-7000**, **PowerStation G-3500**, and **CompactGrid C-1200** energy storage systems.

Technical Parameters: Part FUS-FAST-600A

- **Internal Part Number:** FUS-FAST-600A
- **Manufacturer:** Eaton Bussmann / Mersen (Gigavolt Qualified Vendor)
- **Nominal Current Rating:** 600 A RMS
- **Nominal Voltage Rating:** 700 V DC / 1,000 V AC
- **Interrupting Rating (Breaking Capacity):** 100 kA DC at 700 V DC (Time constant L/R = 10 ms)
- **Melting Clearing Integral (I²t Rating):** 42,000 A²s at rated voltage
- **Terminal Geometry:** Flush-end blade style with dual M10 bolt mounting holes. Torque limit: 14.5 N·m.

Technical Parameters: High-Voltage Pyrofuse ACT-PYRO-1200

- **Internal Part Number:** ACT-PYRO-1200
- **Application:** Primary DC disconnect failsafe on Megapack X-7000 main 1,250 V bus.
- **Triggering Mechanism:** Solid-state chemical micro-gas propellant initiator driven by dedicated low-latency trigger circuit (DRV-PYRO-01).
- **Trigger Current:** 2.0 A DC pulse (10 ms duration).
- **Total Physical Arc-Clearing Time:** < 1.8 ms from receipt of command pulse.
- **Handling Precautions:** Pyrofuses contain Class 1.4S micro-propellant charges. Handle only with grounded anti-static wrist strap. Never test pyrofuse bridge circuit with a standard multimeter; test currents exceeding 50 mA can inadvertently trigger explosive actuation. Use only intrinsically safe test meter TOOL-MTR-IS01.