

High Speed Class J Fuses

Advanced protection of drives, soft-starters
and semiconductor devices



Amp-Trap® High Speed Class J Fuse (HSJ)

The HSJ is the only product available capable of providing NEC branch circuit protection and power electronics protection in one package!



Under circuit fault conditions, HSJ fuses will limit the amount of energy delivered preventing damage to sensitive components such as IGBT's, DC Capacitors, Diodes and SCR's.



Many manufacturers of drives and soft-starters have sought to reduce costs by eliminating internal semiconductor fusing. This now leaves equipment vulnerable to component failure, and falls short of code branch circuit requirements. Therefore, it becomes the end users' responsibility to protect the drives and soft-starters, while also providing branch circuit protection.

Mersen has developed an innovative solution to this problem, the UL listed Class J Fuse (HSJ) designed specifically to fit the operating parameters of drives and soft-starters, and protect the internal power electronic devices.

Why let shortcuts result in costly short circuits?

By using Mersen HSJ fuses not only are the NEC safety requirements and the equipment integrity maintained, but the price of replacing costly equipment is also eliminated.

The HSJ combines the following features:

- Semiconductor protection (very low I^2t)
- Compliance to NEC (branch circuit protection)
- Mirrors operating characteristics of electronic motor controllers
- Capable of protecting overloads down to 135% of fuse rating

Protection Method	Code Branch Circuit Protection	Driver or Soft- Starter Protection
HSJ (UL Listed)	✓	✓
Circuit Breaker (UL Listed)	✓	✗
Class J, T, RK1, RK5 Fuse (UL Listed)	✓	✗
Semiconductor Fuse (UL Rec)	?	✓

Features:

- Optimized over-load capability for withstanding elevated levels of current during electronic motor controller start-ups
- Very low I^2t (thermal energy) let-through
- Excellent cycling ability for frequent starts/stops without nuisance opening
- Compact Class J footprint
- Current-limiting capability

Applications:

- Electronic motor controllers
- Variable frequency drives
- Soft-starters
- Solid state relays
- Phase controllers
- Inverters
- Branch circuit protection for various loads and semiconductor devices

The Need for Code Compliance and Semiconductor Protection

The Mersen Solution: High Speed Class J Fuses

High Speed Class J (HSJ) Catalog Numbers

You'll find the HSJ in a broad range of ampere ratings – from 1 to 600A, UL Listed to Standard 248-8

Catalog Numbers (amps)

HSJ1	HSJ25	HSJ60	HSJ125	HSJ300
HSJ3	HSJ30	HSJ70	HSJ150	HSJ350
HSJ6	HSJ35	HSJ80	HSJ175	HSJ400
HSJ10	HSJ40	HSJ90	HSJ200	HSJ450
HSJ15	HSJ45	HSJ100	HSJ225	HSJ500
HSJ17-1/2	HSJ50	HSJ110	HSJ250	HSJ600
HSJ20				



Ratings

Volts : 600VAC
: 500VDC
Amps : 1 to 600A (AC)
: 15 to 600A (DC)
IR : 200kA I.R. AC
: 100kA I.R. DC
: L/R =10mS or less
(Self Certified for 600VAC, 300kA I.R.,
UL witnessed.)

Approvals

- UL Listed to Standard 248-8, File E2137
- CSA Certified to Standard C22.2

Recommended Fuse Holder

Fuse Ampere Rating	Catalog Number 600V or Less	
	1 Pole	3 Pole
0-30	US3J1I	US3J3I
31-60	US6J1I	US6J3I
61-100	61006SJ	61008SJ
101-200	62001J	62003J
201-400	64031J	64033J
401-600	6631J	6633J



The HSJ can be used in fusible disconnect switches, providing code branch circuit protection. It can also protect power semiconductors without the need for additional protective devices.



A WORLD LEADER
in safety & reliability
for electrical power

A GLOBAL PLAYER

A global expert in materials and solutions for extreme environments as well as in the safety and reliability of electrical equipment, Mersen designs innovative solutions to address its

clients' specific needs to enable them to optimize their manufacturing process in sectors such as energy, transportation, electronics, chemical, pharmaceutical, and process industries.

A proud supplier of Fuses & Accessories



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