

# COMPARISON OF SEMICONDUCTOR FUSE CLASSES

## gS CLASS vs. gR CLASS FUSES

gS class fuses are very similar to gR class fuses. They both provide full-range breaking capacity (overload and short-circuit protection) for the protection of semiconductors, cables and all switchgear of installation. The difference being gS class fuses have lower power dissipation than gR class fuses due to tighter melting gate values. This also results in gS class fuses having lower fuse body temperatures. Typical applications for gS and gR class fuses include protection of semiconductors (diodes, thyristors, triacs, etc) used in power rectifiers, UPS, converters, motor drives, soft starters, solid state relays, photovoltaic inverters, welding inverters and any application where it is necessary to protect semiconductor devices.

## aR CLASS FUSES

aR class fuses only provide partial-range breaking capacity (short-circuit protection only). Typical applications for aR class fuses include protection of semiconductors (diodes, thyristors, triacs, etc) used in power rectifiers, UPS, converters, motor drives (AC and DC), soft starters, solid state relays, photovoltaic inverters, welding inverters and any application where it is necessary to protect semiconductor devices. Note: aR fuses are often faster (lower  $I^2t$  value) than a comparable gS or gR fuse.

## aR CLASS vs. gR / gS CLASS FUSES

aR class fuses feature a high minimum interrupting current as compared with their current rating. The primary time-current characteristic of aR class fuses is the CC' curve, above which another protection device must be associated.

The gR class fuse represents considerably improved performance in semiconductor protection. gR class fuses should be used in the design of low voltage equipment and in the protection of power electronics equipment. Designers can often substitute a gR class fuse for an aR class fuse, but **an aR class fuse can never replace a gR class fuse.**

Start protecting your new equipment with gS class fuses and gR class fuses today. These fuses offer enhanced protection, safety and reliability, along with reduced risk of replacement errors and assembly costs.

Example: 100A aR vs. 100A gR

