

# POWR-SPEED® Fuse

## L60QS Series High-Speed Cylindrical

Semiconductor Fuses • 600 V Ac/Dc • Class aR - 40 A

IEC cULus CE RoHS REACH HF



### Description

The Littelfuse QS series of High-speed Semiconductor Fuses is designed to safeguard power semiconductor devices. These cylindrical-shaped, 10x38 mm fuses with higher current ratings, are fast-acting and extremely current limiting. They provide balanced performance and reliable short-circuit protection to extend product longevity while lowering potentially damaging heat energy to the device being protected.

### Features & Benefits

| FEATURES                                                       | BENEFITS                                                          |
|----------------------------------------------------------------|-------------------------------------------------------------------|
| <b>High ac and dc interrupting rating</b>                      | Provides fast and reliable short circuit protection               |
| <b>Fast acting</b>                                             | Responds quickly to a range of fault currents to safeguard device |
| <b>Excellent cycling capability to handle on/off switching</b> | Increases product reliability and longevity                       |
| <b>Compact case size with common dimensions</b>                | Saves space and can be used in a variety of applications          |
| <b>Compliant with UL and IEC standards</b>                     | Supports global market applications and streamlines inventory     |

### Applications

- Ac-dc power converters
- Control circuits
- EV charging stations
- Power distribution units (PDUs)
- Power supplies
- Variable speed drives
- Uninterruptible power supply (UPS)

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### Specifications

|                             |                                            |
|-----------------------------|--------------------------------------------|
| Voltage Rating              | 600 V Ac/600 V Dc                          |
| Amperage Rating             | 40 A                                       |
| Interrupting Rating         | 200 kA (Ac), 100 kA (Dc)                   |
| Minimum Breaking Capacity   | 400%                                       |
| Operating Characteristics   | Fast-acting, partial range (aR)            |
| Time Constant               | ≤ 10 ms                                    |
| Operating Temperature Range | -55 °C to +125 °C (-67 °F to +257 °F)      |
| Materials                   | Body – Melamine<br>End caps – Copper alloy |
| Applicable Standards        | UL 248-13, IEC 60269-4                     |
| Mounting                    | Cartridge and PCB mount                    |
| Country of Origin           | Mexico                                     |

### Certification & Compliance

|              |                                                       |
|--------------|-------------------------------------------------------|
| cURus        | cURus Recognized (File: E71611)                       |
| CE           | Declaration of Conformity (File: EU_DOC-L60QS_240108) |
| RoHS         | RoHS 2 Directive 2011/65/EU; Directive (EU) 2015/863  |
| REACH        | Regulation (EC) No 1907/2006                          |
| Halogen Free | Yes                                                   |

### Ordering Information (Ferrule Version)

| AMPERE RATING | CATALOG NUMBER | PRODUCT MARKING | PACKING QUANTITY | ORDERING NUMBER | UPC CODE    |
|---------------|----------------|-----------------|------------------|-----------------|-------------|
| 40            | L60QS040       | L60QS 40A       | 10               | L60QS040.T      | 07945837064 |

### Ordering Information (PCB Version)

| AMPERE RATING | CATALOG NUMBER | PRODUCT MARKING | PACKING QUANTITY | ORDERING NUMBER | UPC CODE    |
|---------------|----------------|-----------------|------------------|-----------------|-------------|
| 40            | L60QS040R      | L60QS 40A-R     | 100              | L60QS040.HXR    | 07945837103 |

### Electrical Specifications

| AMPERAGE RATING | VOLTAGE RATING |     | INTERRUPTING RATING |        | WATTS LOSS AT 100 % RATED CURRENT (W) | AVERAGE MELTING I²T (A²S) | TOTAL CLEARING I²T (A²S) 200 KA @ 600 V AC | TOTAL CLEARING I²T (A²S) 100 KA @ 600 V DC | NOMINAL COLD RESISTANCE (OHMS) |
|-----------------|----------------|-----|---------------------|--------|---------------------------------------|---------------------------|--------------------------------------------|--------------------------------------------|--------------------------------|
|                 | AC             | DC  | AC                  | DC     |                                       |                           |                                            |                                            |                                |
| 40              | 600            | 600 | 200 kA              | 100 kA | 6                                     | 277                       | 1770                                       | 1080                                       | 0.0025                         |

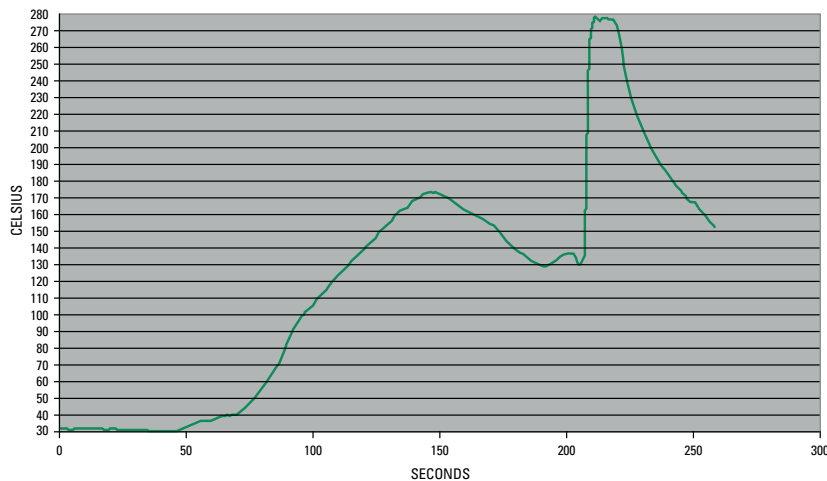
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### Recommended Process Parameters

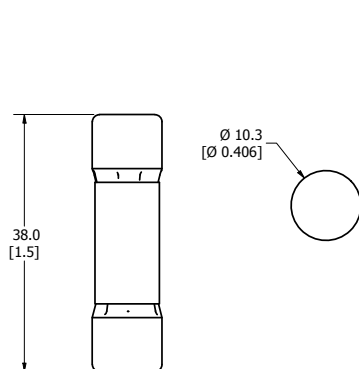
| WAVE PARAMETER         | LEAD FREE RECOMMENDATION          |
|------------------------|-----------------------------------|
| Preheat:               | (Typical industry recommendation) |
| Temperature minimum:   | 130 °C                            |
| Temperature maximum:   | —                                 |
| Pre-heat time          | 75 seconds maximum                |
| Solder pot temperature | 280 °C maximum                    |
| Solder dwell time      | 270 °C for 8 seconds maximum      |
| Complete cycle time    | 250 seconds maximum               |

### Soldering Parameters

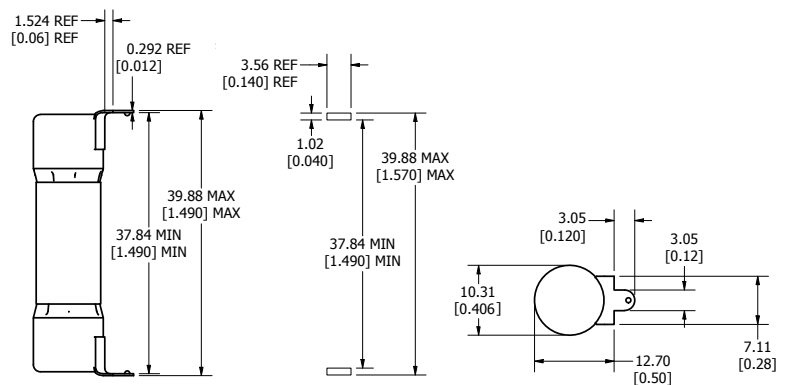


### Dimensions in Millimeters (Inches)

#### FERRULE VERSION



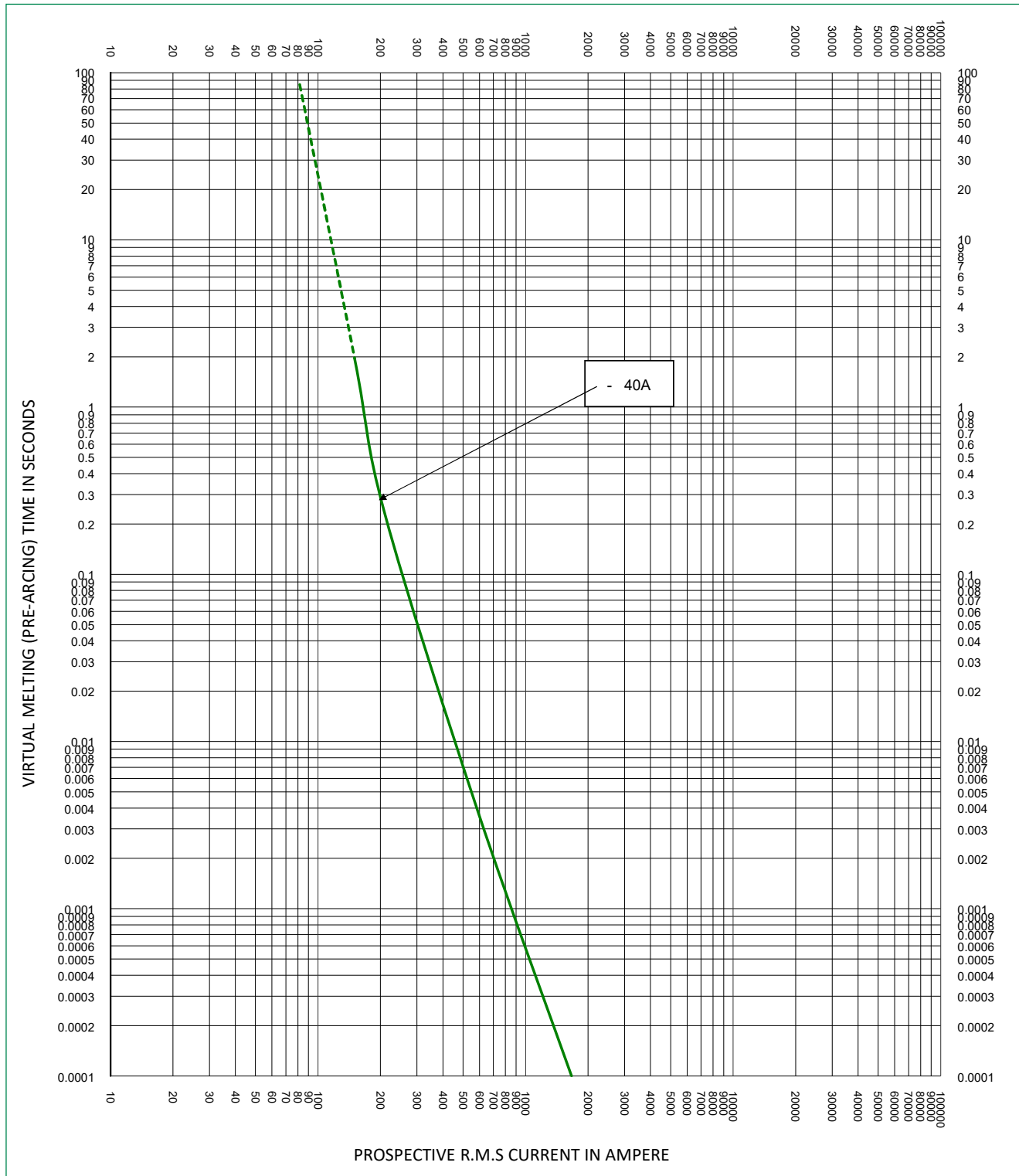
#### PCB VERSION



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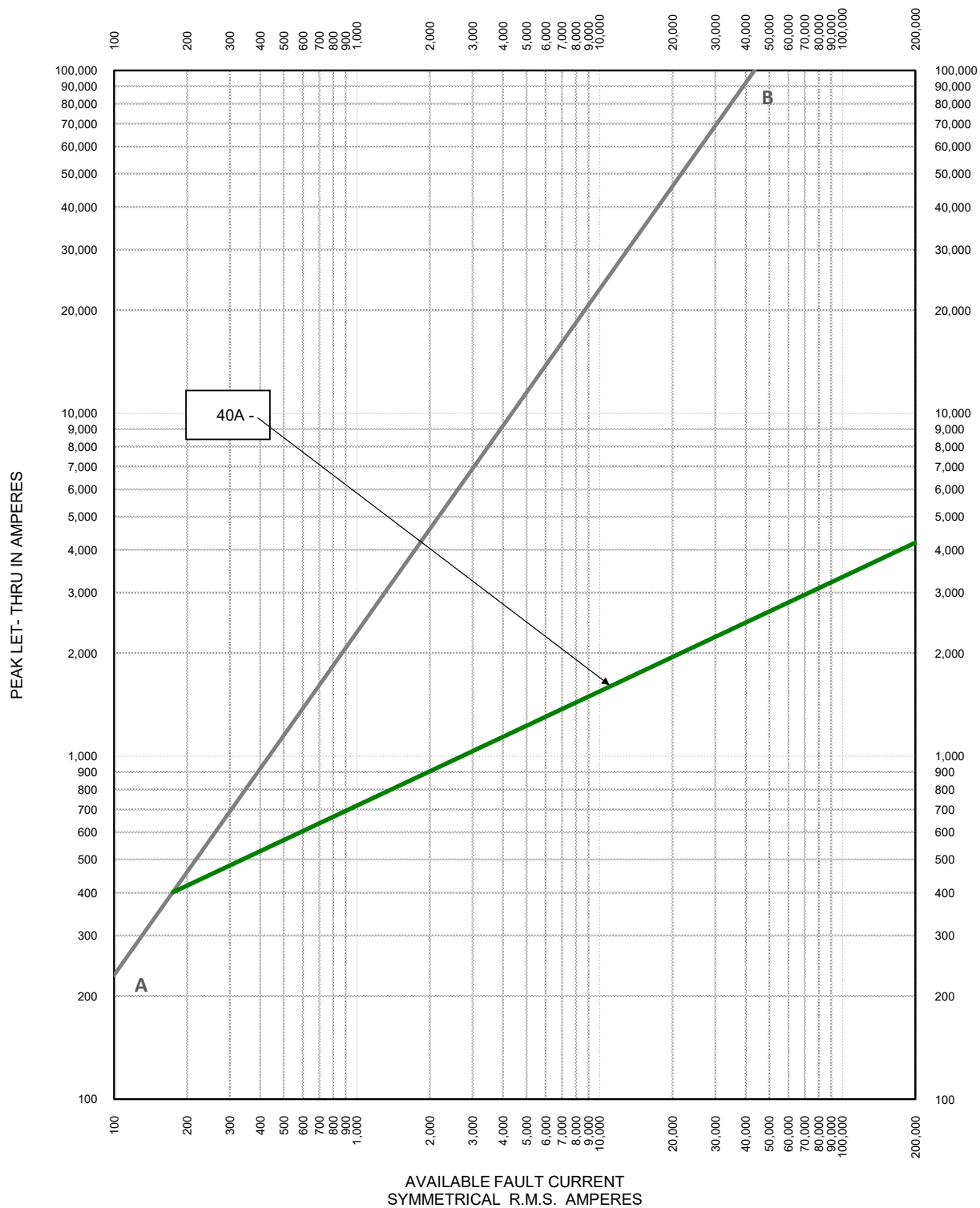
### Time Current Curve (40 A)



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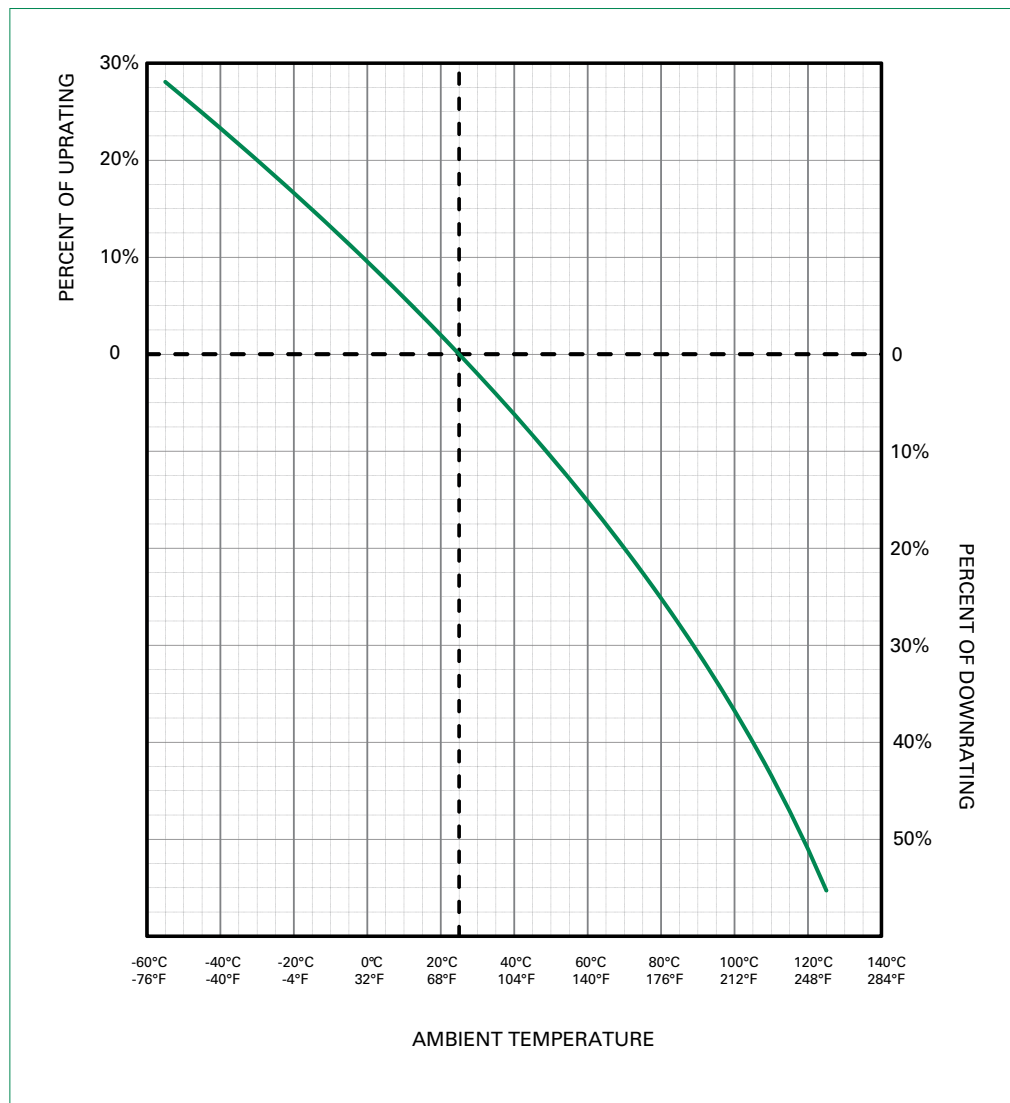
### Peak Let-Through Curve



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### Temperature De-rating Curve (Temperature of Air Immediately Surrounding Fuse)



**Disclaimer Notice** – Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at [www.littelfuse.com/product-disclaimer](http://www.littelfuse.com/product-disclaimer).