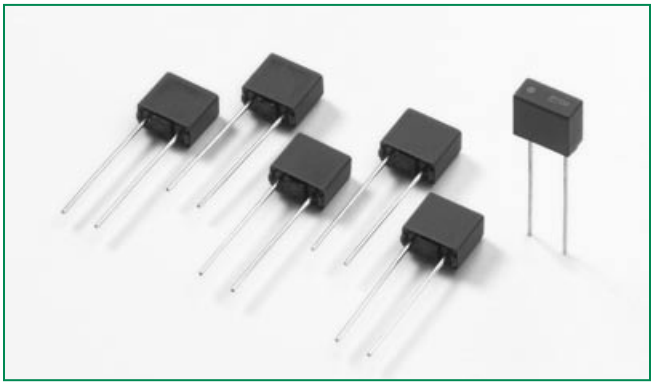
# 399 Series, TE5®, Inrush Protector Fuse



## Description

The 399 Series are TE5®, time-Lag type, 65V rated fuses. For Short Circuit Protection of Sensitive Electronic Components and Assemblies.

## Features

- Reduced PCB space requirements
- Highly defined cut-off times
- Low internal resistance
- Irreversible physical separation
- Flame resistant encapsulated casing
- Halogen free
- Available from 125mA to 4A

## Agency Approvals

| Agency | Agency File Number | Ampere Range |
|---|---|---|
| c UL us | E67006 | 125mA - 4A |

## Applications

- IC Chip Protection

## Electrical Characteristics

| % of Ampere Rating | Opening Time |
|---|---|
| 300 | 20 Seconds, **Max.** |

## Electrical Characteristics

| Amp Code | Rated Current | Marking Code* | Voltage Rating | Breaking Capacity | Cold Resistance 0.1 x $I_N$ typ. (mΩ) | Power Disspation 1.0 x $I_N$ max. (mW) | Melting Integral 10 x $I_N$ typ. ($A^2s$) | Agency Approvals c UL us |
|---|---|---|---|---|---|---|---|---|
| 0125 | 125 mA | IP13 | 65 V | 50A / 65 VAC/DC 50-60 Hz cosφ=1.0 | 1600 | 125 | 0.13 | x |
| 0160 | 160 mA | IP16 | 65 V | | 1100 | 140 | 0.2 | x |
| 0200 | 200 mA | IP20 | 65 V | | 775 | 155 | 0.29 | x |
| 0250 | 250 mA | IP25 | 65 V | | 550 | 170 | 0.42 | x |
| 0315 | 315 mA | IP32 | 65 V | | 330 | 190 | 0.62 | x |
| 0400 | 400 mA | IP40 | 65 V | | 265 | 220 | 0.92 | x |
| 0500 | 500 mA | IP50 | 65 V | | 190 | 240 | 1.4 | x |
| 0630 | 630 mA | IP63 | 65 V | | 130 | 265 | 2 | x |
| 0800 | 800 mA | IP80 | 65 V | | 92 | 300 | 3 | x |
| 1100 | 1.00 A | IP100 | 65 V | | 65 | 330 | 4.3 | x |
| 1125 | 1.25 A | IP125 | 65 V | | 47 | 370 | 6.5 | x |
| 1160 | 1.60 A | IP160 | 65 V | | 33 | 420 | 9.8 | x |
| 1200 | 2.00 A | IP200 | 65 V | | 23 | 460 | 14 | x |
| 1250 | 2.50 A | IP250 | 65 V | | 17 | 520 | 20 | x |
| 1315 | 3.15 A | IP315 | 65 V | | 13 | 580 | 40 | x |
| 1400 | 4.00 A | IP400 | 65 V | | 10 | 650 | 75 | x |

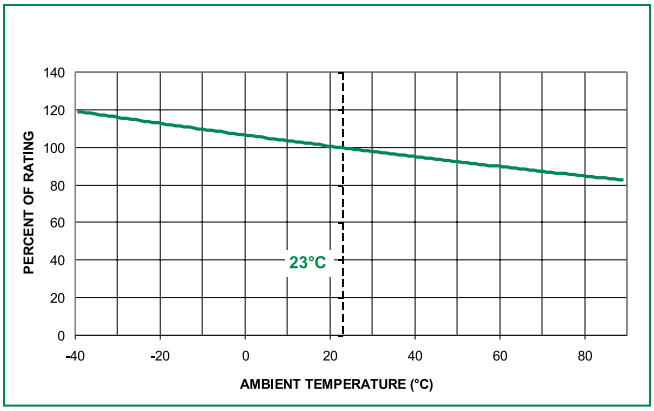
* Physical Marking on top of the device

Note: 1.00 means the number one with two decimal places. 1,000 means the number one thousand.

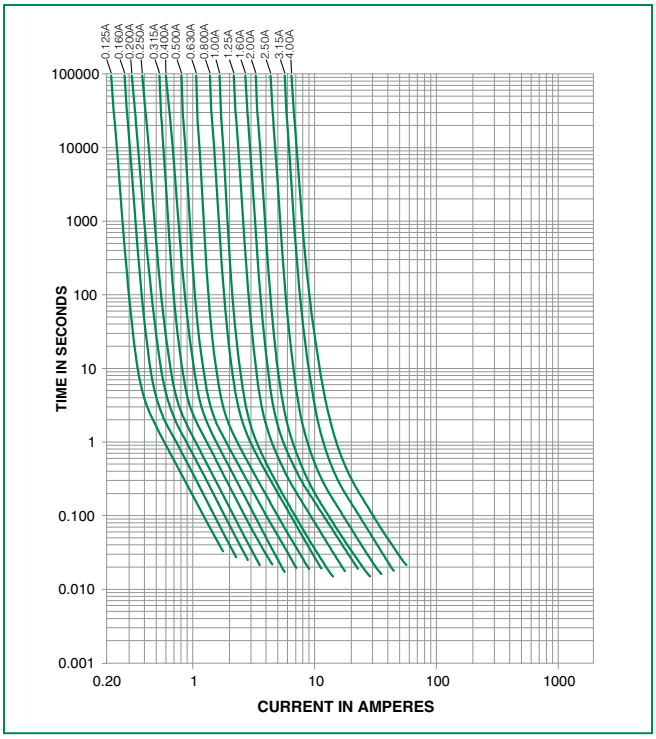


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Please refer to www.littelfuse.com/series/399.html for current information.

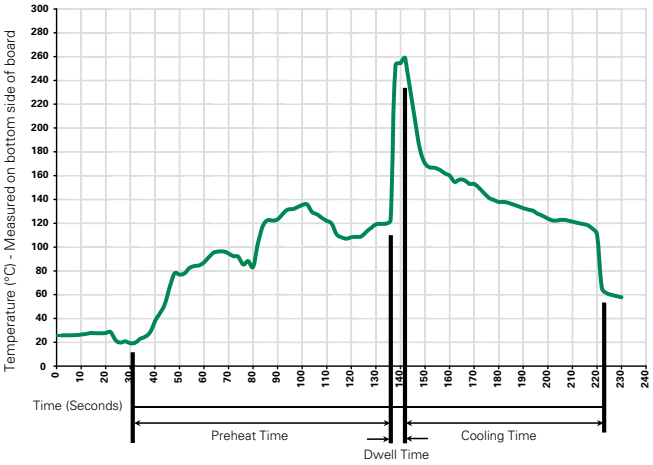
## Temperature Rerating Curve




## Average Time Current Curves




## Soldering Parameters - Wave Soldering




### Recommended Process Parameters:

| Wave Parameter | Lead-Free Recommendation |
|---|---|
| Preheat: (Depends on Flux Activation Temperature) | (Typical Industry Recommendation) |
| Temperature Minimum: | 100° C |
| Temperature Maximum: | 150° C |
| Preheat Time: | 60-180 seconds |
| Solder Pot Temperature: | 260° C Maximum |
| Solder Dwell Time: | 2-5 seconds |

### Recommended Hand-Solder Parameters:

Solder Iron Temperature: 350° C +/- 5°C
Heating Time: 5 seconds max.

**Note: These devices are not recommended for IR or Convection Reflow process.**

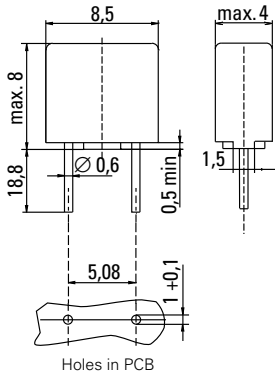

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## Product Characteristics

| | |
|---|---|
| **Materials** | Base/Cap: Brown Thermoplastic Polyamide PA 6.6, UL 94V-0<br>Round Pins: Copper, Tin-plated |
| **Lead Pull Strength** | 10 N (EN 60068-2-21) |
| **Solderability** | 260°C, ≤ 3s. (Wave)<br>350°C, ≤ 1s. (Soldering Iron) |
| **Soldering Heat Resistance** | 260°C, 10s. (IEC 60068-2-20)<br>350°C, 3s. (Soldering Iron) |

| | |
|---|---|
| **Operating Temperature** | -40°C to +85°C (consider de-rating) |
| **Climatic Category** | -40°C to +85°C/21 days<br>(EN 60068-1,-2-1,-2-2,-78) |
| **Stock Conditions** | +10 °C to +60 °C RH,<br>≤ 75% yearly average, without dew,<br>maximum value for 30 days-95% |
| **Vibration Resistance** | 24 cycles at 15 min. each<br>(EN 60068-6)<br>10 - 60 Hz at 0.75 mm amplitude<br>60 - 2000 Hz at 10 g acceleration |

## Dimensions



Holes in PCB

## Part Numbering System

399 xxxx 000

**Series**

**Amp. Code**
Refer to Amp Code column of Electrical Characteristic Table

**Packaging Code**
000 Tape/Ammopack (1,400 pcs.)

## Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code | Reel Size |
|---|---|---|---|---|
| **399 Series** | | | | |
| Tape & Ammopack | N/A | 1,400 | 000 | N/A |



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