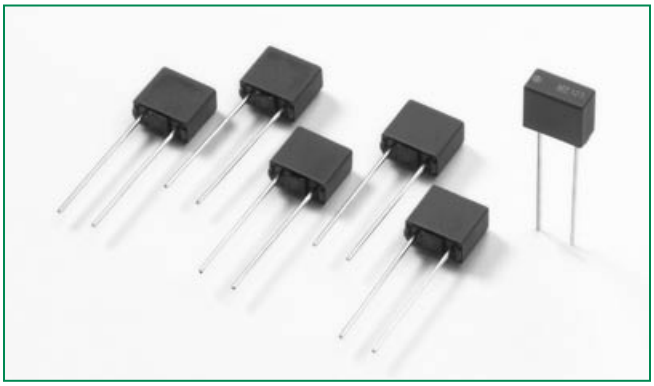
# 398 Series, TE5®, Modul Protector® Fuse



## Description

The 398 Series are TE5® short circuit protector, medium time-Lag type, 65V rated fuses.

## Features

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

## Agency Approvals

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

## Applications

- Miscroprocessor protection

## Electrical Characteristics

| % of Ampere Rating | Opening Time |
|---|---|
| 300 | 10 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 | 125mA | MP13 | 65V | 50A / 65 VAC/DC 50-60 Hz cosφ=1.0 | 900 | 50 | 0.0093 | x |
| 0250 | 250mA | MP25 | 65V | | 355 | 50 | 0.045 | x |
| 0315 | 315mA | MP32 | 65V | | 260 | 60 | 0.081 | x |
| 0400 | 400mA | MP40 | 65V | | 186 | 75 | 0.18 | x |
| 0500 | 500mA | MP50 | 65V | | 155 | 90 | 0.2 | x |
| 0630 | 630mA | MP63 | 65V | | 115 | 120 | 0.37 | x |
| 0800 | 800mA | MP80 | 65V | | 85 | 140 | 0.64 | x |
| 1100 | 1.00A | MP100 | 65V | | 65 | 170 | 1.1 | x |
| 1125 | 1.25A | MP125 | 65V | | 48 | 210 | 2.3 | x |
| 1160 | 1.60A | MP160 | 65V | | 34 | 320 | 4.5 | x |
| 1200 | 2.00A | MP200 | 65V | | 26 | 425 | 7.8 | x |
| 1250 | 2.50A | MP250 | 65V | | 21 | 550 | 13 | x |
| 1315 | 3.15A | MP315 | 65V | | 16 | 650 | 23 | x |
| 1400 | 4.00A | MP400 | 65V | | 12 | 1000 | 40 | 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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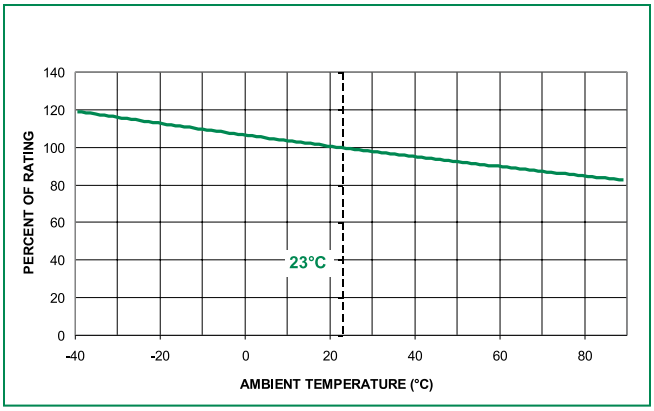
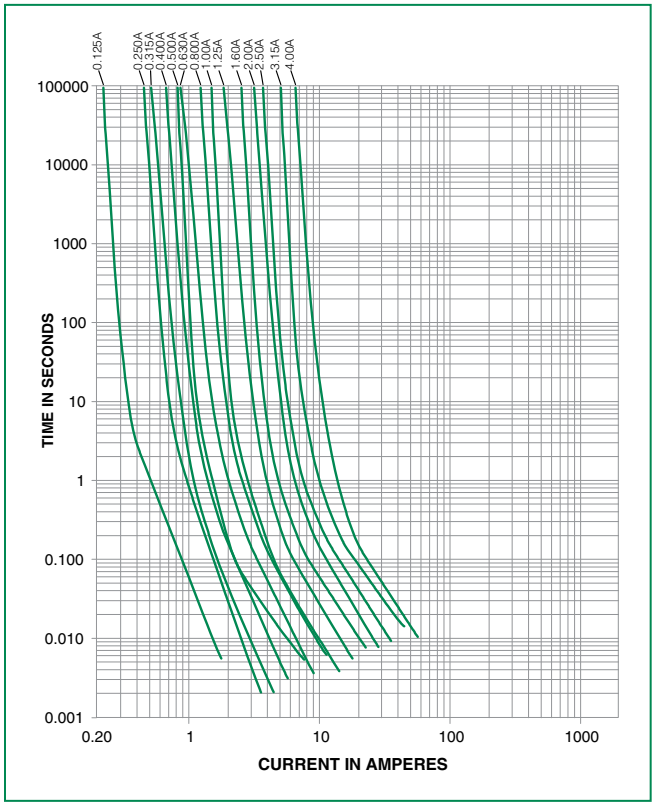
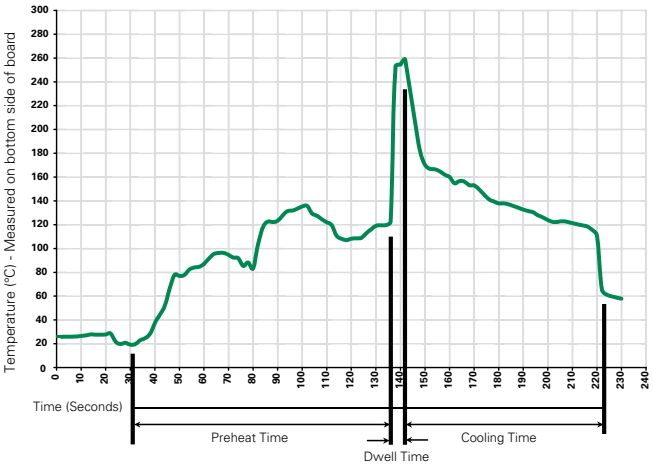
## Temperature Rerating Curve




## Average Time Current Curves




## Soldering Parameters - Wave Soldering




**Recommended Process Parameters:**

| Wave Parameter | Lead-Free Recommendation |
|---|---|
| Preheat:<br>(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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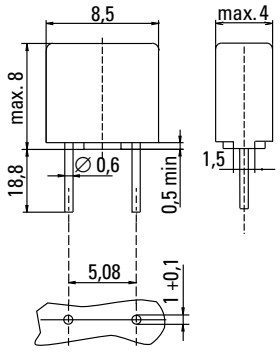
## Product Characteristics

| | |
|---|---|
| **Materials** | Base/Cap: Brown Thermoplastic<br>Polyamide PA 6.6, UL 94V-0<br>Round Pins: Copper, Tin-plated |
| **Lead Pull Strength** | 10N (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
Dimensions (mm)

## Part Numbering System

398 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 |
|---|---|---|---|---|
| **398 Series** | | | | |
| Tape & Ammopack | N/A | 1,400 | 000 | N/A |



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