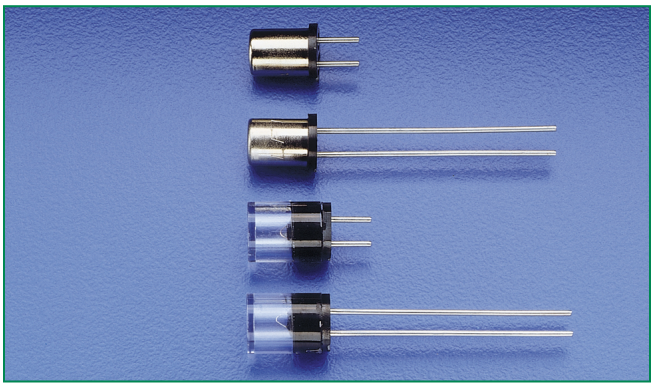
Littelfuse
Expertise Applied | Answers Delivered

# 272/273/274/278/279 Series, MICRO™ Very Fast-Acting Fuse



## Description

Developed originally for the U.S. Space Program, MICRO™ fuse provides reliability in a compact design. The MICRO™ fuse is available in plug–in or radial lead styles and a complete range of ampere ratings from 1/500 to 5A to suit a wide variety of design needs.

## Features

- Military grade available
- High breaking capacity
- Clear cover option to view fuse element status
- Available from very low ampere of 2mA to 5A
- Plug-in with short or long leads option

## Applications

- Printed circuit boards and similar equipment
- Electronic components

## Agency Approvals

| Agency | Agency File Number | Ampere Range |
|---|---|---|
| | E10480 | 2mA - 5A |
| | LR 29862 | 2mA - 5A |
| QPL | FM02 | 2mA - 5A |

## Electrical Characteristics

| % of Ampere Rating | Ampere Rating | Opening Time |
|---|---|---|
| 100% | 1/500–5 | 4 Hours, **Min.** |
| 200% | 1/500–3/10 | 5 Seconds, **Max.** |
| | 4/10-5 | 2 Seconds, **Max.** |

## Electrical Characteristics

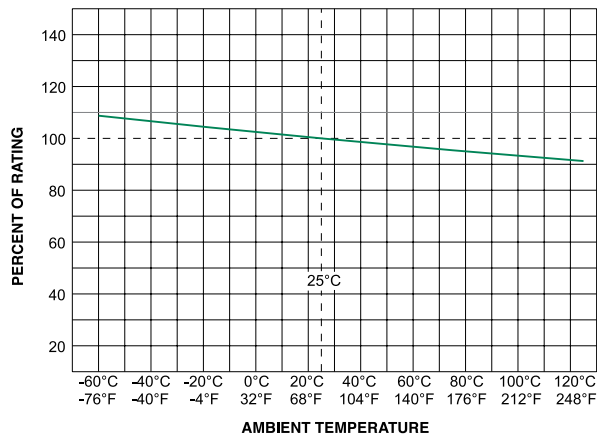
| Ampere Rating (A) | Amp Code (for all above series) | Max Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting $I^2t$ ($A^2$ sec) | Agency Approvals | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | QPL |
| .002 | .002 | 125 | 10,000 amperes at 125 VAC/VDC. | 2200 | 0.00000000845 | X | X | X |
| .005 | .005 | 125 | | 280 | 0.00000000810 | X | X | X |
| .010 | .010 | 125 | | 80.0 | 0.000000462 | X | X | X |
| .015 | .015 | 125 | | 44.0 | 0.00000123 | X | X | X |
| .031 | .031 | 125 | | 16.0 | 0.00000810 | X | X | X |
| .050 | .050 | 125 | | 3.20 | 0.0000666 | X | X | X |
| .062 | .062 | 125 | | 2.32 | 0.000115 | X | X | X |
| .100 | .100 | 125 | | 1.25 | 0.000385 | X | X | X |
| .125 | .125 | 125 | | 1.0 | 0.000691 | X | X | X |
| .200 | .200 | 125 | | 2.30 | 0.00409 | X | X | X |
| .250 | .250 | 125 | | 1.75 | 0.00640 | X | X | X |
| .300 | .300 | 125 | | 1.25 | 0.00945 | X | X | X |
| .400 | .400 | 125 | | 0.227 | 0.0251 | X | X | X |
| .500 | .500 | 125 | | 0.167 | 0.0716 | X | X | X |
| .600 | .600 | 125 | | 0.430 | 0.0411 | X | X | X |
| .700 | .700 | 125 | | 0.324 | 0.0710 | X | X | X |
| .750 | .750 | 125 | | 0.293 | 0.0900 | X | X | X |
| .800 | .800 | 125 | | 0.271 | 0.113 | X | X | X |
| 1.00 | 001. | 125 | | 0.0880 | 0.0648 | X | X | X |
| 01.5 | 01.5 | 125 | | 0.0578 | 0.160 | X | X | X |
| 2.00 | 002. | 125 | | 0.0425 | 0.300 | X | X | X |
| 3.00 | 003. | 125 | | 0.0275 | 0.759 | X | X | X |
| 4.00 | 004. | 125 | | 0.0202 | 1.38 | X | X | X |
| 5.00 | 005. | 125 | | 0.0156 | 2.21 | X | X | X |


Revised: 12/19/13

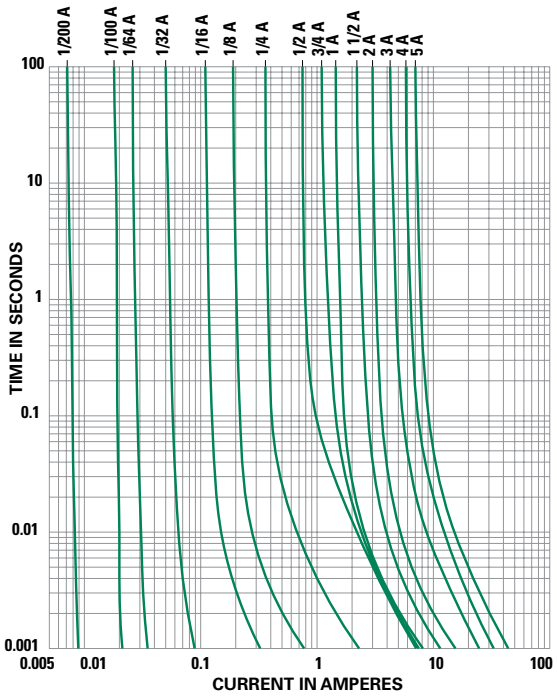
# Radial Lead Fuses

MICRO™ > Very Fast-Acting > 272/273/274/278/279 Series

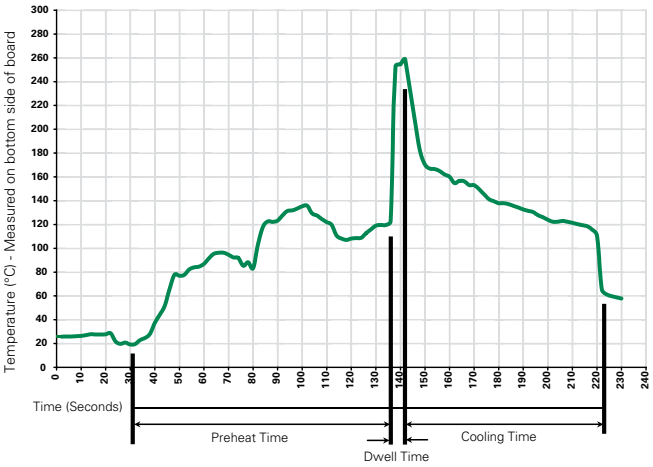
## Temperature Rerating Curve




## 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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# Radial Lead Fuses

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## Product Characteristics

| | |
|---|---|
| **Operating Temperature:** | 273 and 279: –55°C to +85°C;<br>272 and 278: –55°C to +125°C |
| **Fuses to MIL SPEC** | 273 Series is available in CSA LR 29862. Military QPL type (FM02). To order, change 273 to 274. |
| **Materials** | 272 and 278 series cap: Nickel Plated Brass<br>273, 274 and 279 series cap: Mirror polished Polycarbonate<br>Base: R-4 Ryton<br>Pins: Tin Plated Copper |
| **Product Marking** | Current and voltage ratings stamped on cap |

## Part Numbering System

**0273 xxxx V**

**Series**

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

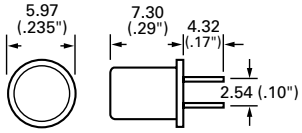
**Packaging Code**
V = 5
H = 100

## Additional Information

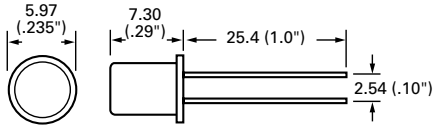
| | | |
|---|---|---|
| **Datasheet 272 Series** | **Resources 272 Series** | **Samples 272 Series** |
| **Datasheet 273 Series** | **Resources 273 Series** | **Samples 273 Series** |
| **Datasheet 274 Series** | **Resources 274 Series** | **Samples 274 Series** |
| **Datasheet 278 Series** | **Resources 278 Series** | **Samples 278 Series** |
| **Datasheet 279 Series** | **Resources 279 Series** | **Samples 279 Series** |

## Dimensions

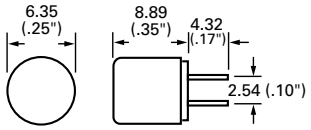
**272 000 Series**
(Short Lead, Metal Cap)



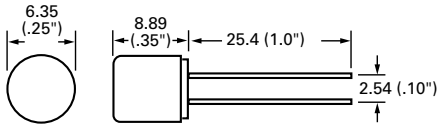

**278 000 Series**
(Long Lead, Metal Cap)




**273 000 and 274 000 Series**
(Short Lead, Clear Plastic Cap)




**279 000 Series**
(Long Lead, Clear Plastic Cap)




NOTE: Amperage and voltage rating stamped on cap.
Leads are tin plated copper; .025" diameter.

## Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code |
|---|---|---|---|
| Bulk | N / A | 5 | V |
| Bulk | N / A | 100 | H |


Revised: 12/19/13