

## 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     |
|  | FM02               | 2mA - 5A     |

### Electrical Characteristics

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

### Electrical Characteristics

| Ampere Rating (A) | Amp Code (for all above series) | Max Voltage Rating (V) | Interrupting Rating            | Nominal Cold Resistance (Ohms) | Nominal Melting I <sup>2</sup> t (A <sup>2</sup> sec) | Agency Approvals  |   |   |
|-------------------|---------------------------------|------------------------|--------------------------------|--------------------------------|---|---|---|---|
|                   |                                 |                        |                                |                                |   |  |  |  |
| .002              | .002                            | 125                    | 10,000 amperes at 125 VAC/VDC. | 2200                           | 0.0000000845  | X   | X   | X   |
| .005              | .005                            | 125                    |                                | 280                            | 0.0000000810  | 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   |

272-4/278-9

**Temperature Derating Curve**



**Average Time Current Curves**



**Soldering Parameters - Wave Soldering**



**Recommended Process Parameters:**

| Wave Parameter  | Lead-Free Recommendation          |
|---|-----------------------------------|
| <b>Preheat:</b><br>(Depends on Flux Activation Temperature) | (Typical Industry Recommendation) |
| Temperature Minimum:  | 100° C                            |
| Temperature Maximum:  | 150° C                            |
| Preheat Time:   | 60-180 seconds                    |
| <b>Solder Pot Temperature:</b>                              | 260° C Maximum                    |
| <b>Solder Dwell Time:</b>                                   | 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.**

### Product Characteristics

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

### Part Numbering System



### 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                         |