

# 262/268/269 Series, MICRO™ Very Fast-Acting Fuse (High-Reliability)





## **Agency Approvals**

| Agency      | Agency File<br>Number | Ampere Range | Series    |  |
|-------------|-----------------------|--------------|-----------|--|
| <b>71</b> ° | E10480                | 0.002A - 5A  | 262 & 268 |  |
| <b>(</b>    | 29862                 | 0.002A - 5A  | 262 & 268 |  |
| QPL         | FM07A                 | 0.002A - 5A  | 269       |  |

# **Description**

The 262/268/269 Series are high–reliability MICRO™ fuses, with a 125V rating, very fast-acting type with high breaking capacity. The 269 series is listed under the Department of Defense Quality Product List.

#### **Features**

- Military grade available
- Available from very low ampere of 0.002A to 5A
- Available in plug-in and radial leaded

# **Applications**

Protection of electrical, electronic, and communication equipment having printed circuit boards (PCBs) usable in direct current (DC) and alternating current (AC) (up to 400 hertz (Hz)) circuits capable of withstanding and functioning in extreme conditions found in Spacecraft or Military applications as described in MIL-PRF-23419.

## **Electrical Characteristics**

| % of Ampere<br>Rating | Ampere Rating | OpeningTime             |
|-----------------------|---------------|-------------------------|
| 100%                  | 0.002 – 15    | 4 Hours, <b>Min.</b>    |
| 2000/                 | 0.002 – 0.3   | 5 Seconds, <b>Max.</b>  |
| 200%                  | 0.4 - 5       | 2 Seconds, <b>Max</b> . |

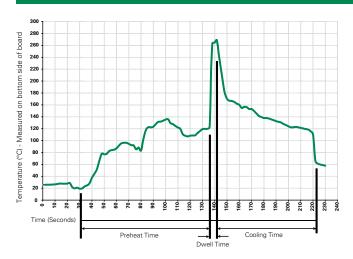
#### **Electrical Characteristics**

| Ampere        |          | Max                      |                               | Nominal Cold<br>Resistance<br>(Ohms) |   | gency Approv | ⁄als |
|---------------|----------|--------------------------|-------------------------------|--------------------------------------|---|--------------|------|
| Rating<br>(A) | Amp Code | Voltage<br>Rating<br>(V) | Interrupting<br>Rating        |                                      |   | <b>(</b>     | QPL  |
| .002          | .002     | 125                      |                               | 2000                                 | X | X            | X    |
| .005          | .005     | 125                      |                               | 280                                  | X | X            | X    |
| .010          | .010     | 125                      |                               | 94.0                                 | X | X            | X    |
| .015          | .015     | 125                      |                               | 44.0                                 | X | X            | X    |
| .031          | .031     | 125                      |                               | 16.45                                | X | X            | X    |
| .050          | .050     | 125                      |                               | 3.20                                 | X | X            | X    |
| .062          | .062     | 125                      |                               | 2.25                                 | X | X            | X    |
| .100          | .100     | 125                      |                               | 1.17                                 | X | X            | X    |
| .125          | .125     | 125                      |                               | 1.0                                  | Х | X            | X    |
| .200          | .200     | 125                      |                               | 2.30                                 | X | X            | X    |
| .250          | .250     | 125                      |                               | 1.75                                 | Х | X            | X    |
| .300          | .300     | 125                      | 10 000 A @ 12 E V A C A / D C | 1.25                                 | X | X            | X    |
| .400          | .400     | 125                      | 10,000A@125VAC/VDC            | 0.227                                | X | X            | X    |
| .500          | .500     | 125                      |                               | 0.167                                | X | X            | X    |
| .600          | .600     | 125                      |                               | 0.140                                | X | X            | X    |
| .700          | .700     | 125                      |                               | 0.114                                | Х | X            | X    |
| .750          | .750     | 125                      |                               | 0.104                                | X | X            | X    |
| .800          | .800     | 125                      |                               | 0.094                                | Х | X            | X    |
| 1.00          | 001.     | 125                      |                               | 0.100                                | Х | X            | X    |
| 01.5          | 01.5     | 125                      |                               | 0.063                                | Х | Х            | X    |
| 2.00          | 002.     | 125                      |                               | 0.046                                | Х | X            | X    |
| 3.00          | 003.     | 125                      |                               | 0.034                                | Х | X            | X    |
| 4.00          | 004.     | 125                      |                               | 0.019                                | Х | Х            | X    |
| 5.00          | 005.     | 125                      |                               | 0.018                                | Х | X            | X    |

Please contact Littelfuse for Average Time Current Curve.



# **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 DwellTime:                        | 2-5 seconds                       |  |

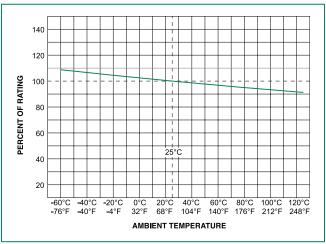
#### **Recommended Hand-Solder Parameters:**

Solder Iron Temperature: 350° C +/- 5°C

Heating Time: 5 seconds max.

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

## **Temperature Re-rating Curve**



Notes:

2. Please contact Littelfuse for average time current curve.

<sup>1.</sup> Rerating depicted in this curve is in addition to the standard derating of 25% for continuous operation.



## **Product Characteristics**

| Materials                               | Gold-Plated Copper Leads, Type II<br>(Fuse cap is also Gold-Plated)   |  |
|---|---|--|
| Weight                                  | 262 and 269 Series .36 Grams;<br>268 Series .48 Grams   |  |
| Lead Pull Force                         | MIL-STD-202, Method 211, Test<br>Condition A (will withstand a 5 lb.<br>axial pull test)  |  |
| AQL (Electrical Characteristics)        | Certified to 1% AQL   |  |
| Sampling                                | Per MIL-STD-105, Inspection Level II  |  |
| Traceability and Identification Records | Controlled by lot number and retained on file for a minimum of three years. Copies of Lot Certification Test data available when requested with order |  |
| Options                                 | Special screening tests, burn-in, etc. can be supplied on special order to meet specific requirements   |  |
| Product Marking                         | 262 / 268 Series: Brand logo, current<br>and voltage ratings<br>269 Series: Brand logo, current and<br>voltage ratings and agency approval<br>mark    |  |

| Operating Temperature                 | −55°C to +125°C  |  |  |
|---------------------------------------|--|--|--|
| Shock                                 | (1/500): MILSTD-202, Method 213,<br>Test Condition A (50 G's peak for<br>11 milliseconds). (1/200–5): MIL-<br>STD-202, Method 213, Test Condition<br>I (100 G's peak for 6 milliseconds) |  |  |
| Vibration                             | MIL-STD-202, Method 201 (10-55<br>Hz); MIL-STD-202, Method 204, Test<br>Condition C (55-2000 Hz at 10 G's<br>Peak)   |  |  |
| Salt Spray                            | MIL-STD-202, Method 101, Test<br>Condition B   |  |  |
| Seal Test                             | MIL-STD-202, Method 112, Test<br>Condition A   |  |  |
| Insulation Resistance (After Opening) | MIL-STD-202, Method 302, Test<br>Condition A (1/2 Megohm minimum)  |  |  |
| Thermal Shock                         | MIL-STD-202, Method 107, Test<br>Condition B (–65°C to 125°C)  |  |  |
| Moisture Resistance                   | MIL-STD-202, Method 106  |  |  |
| Fuses to MIL SPEC                     | 262 Series is available as FM07A on QPL for MIL-PRF-23419/7. To order, change 262 to 269   |  |  |

#### **Dimensions**

# 262 000 Series 268 000 Series 7.37 (.235")(1.0")2.54 (.10")

## **Packaging**

| Packaging<br>Option | Packaging<br>Specification | Quantity | Quantity &<br>Packaging Code |  |
|---------------------|----------------------------|----------|------------------------------|--|
| Bulk                | N/A                        | 5        | V                            |  |

#### **Part Numbering System**

0262 xxxx V 0262 - Standard Series with short leads. 0268 - Standard Series with long leads. 0269 - Military Grade with short leads. Amp. Code -Refer to Amp Code column of Electrical Characteristics Table Packaging Code -

V = (All Series) 5 Quantity bulk pack.

## **Additional Information**



**Datasheet** 262 Series



Datasheet 268 Series



**Datasheet** 269 Series



Resources 262 Series



Resources 268 Series



Resources 269 Series



Samples 262 Series



Samples 268 Series



Samples 269 Series

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