

Surface Mount Fuses

Subminiature Surface Mount

NANO²® FUSE Very Fast-Acting 451/453 Series



The Nano² SMF Fuse is a very small, square surface mount fuse that is also available in a surface mount holder.

ELECTRICAL CHARACTERISTICS:

| % of Ampere Rating | Ampere Rating | Opening Time |
|--------------------|---------------|----------------------------|
| 100% | 1/16–15 | 4 hours, Minimum |
| 200% | 1/16–10 | 5 seconds, Maximum |
| | 12–15 | 20 seconds, Maximum |

AGENCY APPROVALS: Recognized under the Components Program of Underwriters Laboratories and Certified by CSA. Approved by METI from 1 through 5 amperes.

AGENCY FILE NUMBERS: UL E10480, CSA LR 29862.

INTERRUPTING RATINGS:

| | |
|-----------|----------------------------------------------------------------------|
| 1/16 – 8A | 50 amperes at 125 VAC/VDC 300 amperes at 32 VDC |
| 10A | 35 amperes at 125 VAC/50 amperes at 125 VDC 300 amperes at 32 VDC |
| 12A – 15A | 50 amperes at 65 VAC/VDC 300 amperes at 24 VDC |

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature: –55°C to 125°C.

Shock: MIL-STD-202, Method 213, Test Condition I (100 G's peak for 6 milliseconds).

Vibration: MIL-STD-202, Method 201 (10–55 Hz).

Salt Spray: MIL-STD-202, Method 101, Test Condition B.

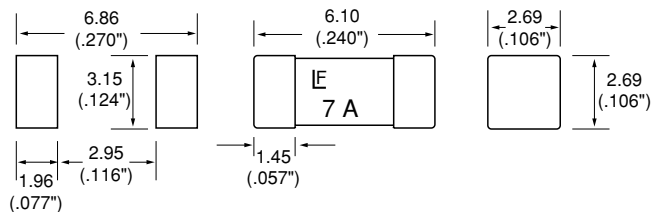
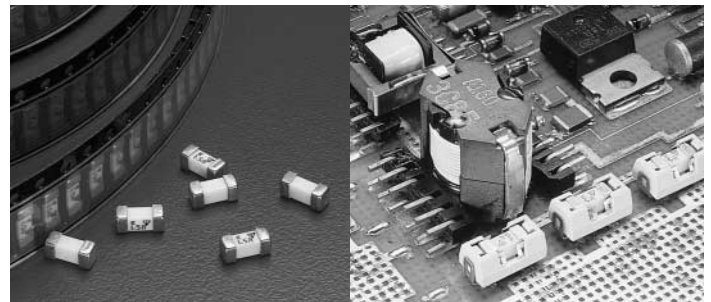
Insulation Resistance (After Opening): MIL-STD-202, Method 302, Test Condition A, (10,000 ohms minimum).

Resistance to Soldering Heat: MIL-STD-202, Method 210, Test Condition B (10 sec. at 260°C).

Thermal Shock: MIL-STD-202, Method 107, Test Condition B (–65 to 125°C).

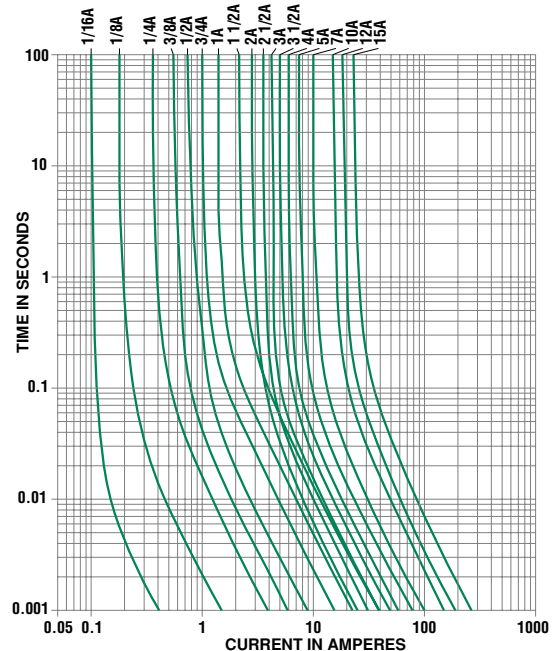
Moisture Resistance: MIL-STD-202, Method 106, High Humidity (90–98 RH), Heat (65°C).

| Tin-Lead Plated Catalog # | Silver Plated Catalog # | Ampere Rating | Voltage Rating | Nominal Resistance Cold Ohms | Nominal Melting Pt A ² Sec. |
|---------------------------|-------------------------|---------------|----------------|------------------------------|----------------------------------------|
| – | R451.062 | 0.062 | 125 | 5.50 | 0.00019 |
| – | R451.080 | 0.080 | 125 | 4.05 | 0.00033 |
| – | R451.100 | 0.100 | 125 | 3.10 | 0.00138 |
| – | R451.125 | 0.125 | 125 | 1.70 | 0.00286 |
| R451.160 | 0453.160 | 0.160 | 125 | 1.80 | 0.00306 |
| R451.200 | 0453.200 | 0.200 | 125 | 1.40 | 0.00652 |
| R451.250 | 0453.250 | 0.250 | 125 | 1.05 | 0.01126 |
| R451.315 | 0453.315 | 0.315 | 125 | 0.78 | 0.0231 |
| R451.375 | 0453.375 | 0.375 | 125 | 0.610 | 0.0425 |
| R451.400 | 0453.400 | 0.400 | 125 | 0.560 | 0.0484 |
| R451.500 | 0453.500 | 0.500 | 125 | 0.420 | 0.0795 |
| R451.630 | 0453.630 | 0.630 | 125 | 0.305 | 0.143 |
| R451.750 | 0453.750 | 0.750 | 125 | 0.245 | 0.185 |
| R451.800 | 0453.800 | 0.800 | 125 | 0.212 | 0.271 |
| R451 001. | 0453 001. | 1.0 | 125 | 0.153 | 0.459 |
| R451 1.25 | 0453 1.25 | 1.25 | 125 | 0.0780 | 0.664 |
| R451 01.5 | 0453 01.5 | 1.5 | 125 | 0.0630 | 0.853 |
| R451 01.6 | 0453 01.6 | 1.6 | 125 | 0.0580 | 1.060 |
| R451 002. | 0453 002. | 2.0 | 125 | 0.0367 | 0.530 |
| R451 02.5 | 0453 02.5 | 2.5 | 125 | 0.0286 | 1.029 |
| R451 003. | 0453 003. | 3.0 | 125 | 0.0227 | 1.650 |
| R451 3.15 | 0453 3.15 | 3.15 | 125 | 0.0215 | 1.920 |
| R451 03.5 | 0453 03.5 | 3.5 | 125 | 0.0200 | 2.469 |
| R451 004. | 0453 004. | 4 | 125 | 0.0160 | 3.152 |
| R451 005. | 0453 005. | 5 | 125 | 0.0125 | 5.566 |
| R451 06.3 | 0453 06.3 | 6.3 | 125 | 0.0096 | 9.17 |
| R451 007. | 0453 007. | 7 | 125 | 0.0090 | 10.32 |
| R451 008. | 0453 008. | 8 | 125 | 0.0077 | 20.23 |
| R451 010. | 0453 010. | 10 | 125 | 0.0056 | 26.46 |
| R451 012. | 0453 012. | 12 | 65 | 0.0049 | 47.97 |
| R451 015. | 0453 015. | 15 | 65 | 0.0037 | 97.82 |



Recommended pad layout

Average Time Current Curves



PHYSICAL SPECIFICATIONS:

Materials: Body: Ceramic

Terminations: Tin-Lead Alloy or Silver Plated Caps.

Soldering Parameters:

Wave Solder — 260°C, 10 seconds maximum

Reflow Solder — 260°C, 30 seconds maximum

Solderability: MIL-STD-202, Method 208.

PACKAGING SPECIFICATIONS: 12mm Tape and Reel per EIA-RS481-1 (IEC 286, part 3); 1,000 per reel, add packaging suffix, MR; 5,000 per reel, add packaging suffix NR.

PATENTED

Refer to pg. 271 for SMF Omni-Blok[®] Holder, Series 154 000.