

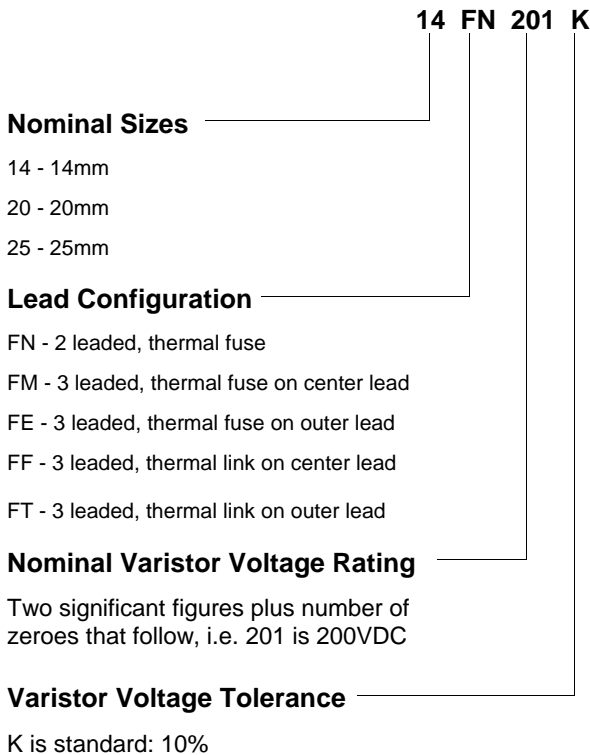


MAIDA STYLE NUMBER 20FN511K

MAIDA ITEM NUMBER 01-2215

The Thermally Protected Series is designed for safe disconnection of the varistor from the circuit due to abnormal operating conditions. These components consist of 2 or 3 leaded wire leads, a thermal disconnect (FN, FM, FN), and have nominal diameters of 14mm, 20mm, and 25mm. Fusible link designs (FF, FT) are also available.

The Maida Style Number is the typical means to identify our components when ordered. The style number identifies several parameters that are important for the characteristics of the device. An alternative ordering method, if known, is by our Item Number. The following example is the standard part numbering system when ordering our TMOV Series components by the Maida Style Number:



Electrical Specifications

| | |
|------------------------------------|-----------|
| Continuous AC Voltage | 320 VAC |
| Continuous DC Voltage | 415 VDC |
| Maximum DC Leakage @ 415 VDC | 200 uA |
| Low Varistor Voltage Limit | 459 VDC |
| High Varistor Voltage Limit | 561 VDC |
| Nominal Varistor Voltage | 510 VDC |
| Current for Varistor Voltage | 1 mA |
| Maximum Clamp Voltage | 845 V |
| Maximum Clamp Voltage Test Current | 100 A |
| Peak Current Rating (1 Pulse) | 10000 A |
| Peak Current Rating (2 Pulse) | 6000 A |
| Energy Rating (8X20us) | 380 J |
| Typical Capacitance | 780 pF |
| Impulse Response Time | < 50 ns |
| Minimum Hipot of Coating | 2500 VDC |
| Minimum I.R. of Coating | 1000 MΩ |
| Current/Energy Derating Above 85°C | -2.5 %/°C |

Special Notes:

Safety Agency Recognitions

UL 1449 File Number E321173
 - Tested to Type: 4CA-3kA

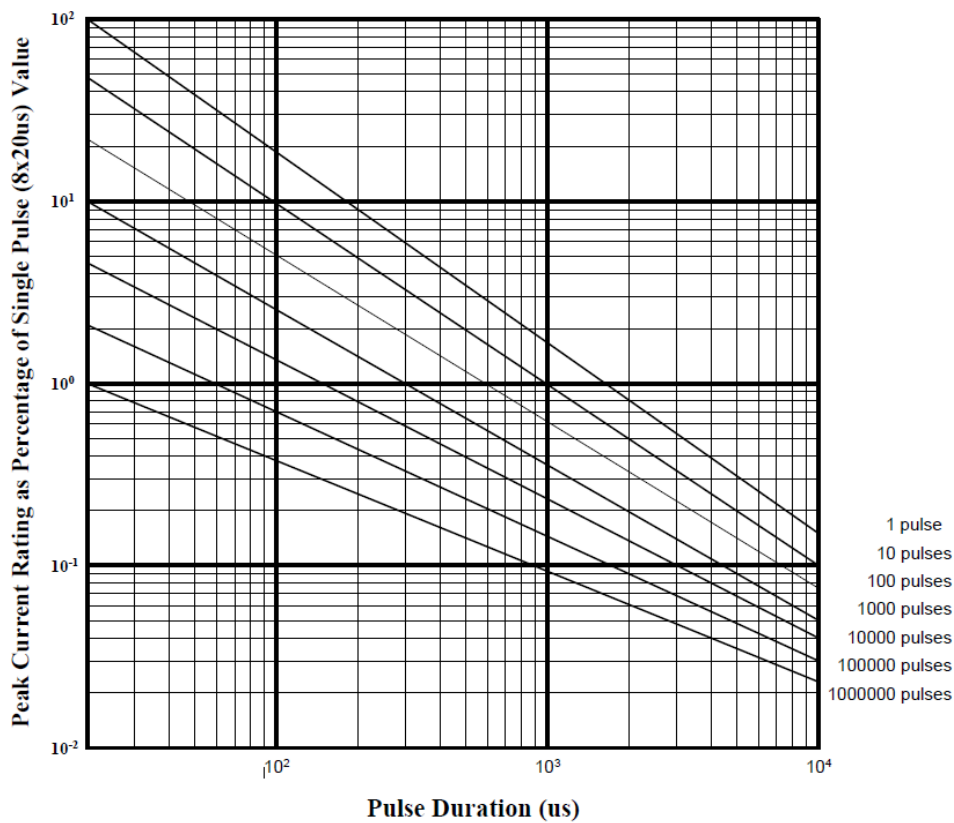
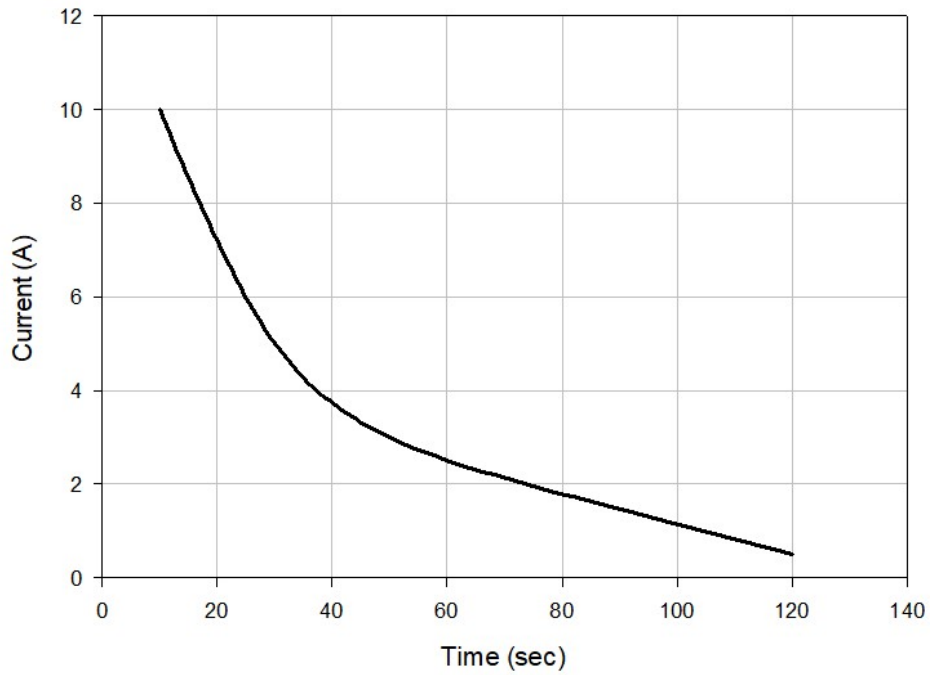
C-UL File Number
 VDE File Number
 CSA File Number
 SEV File Number

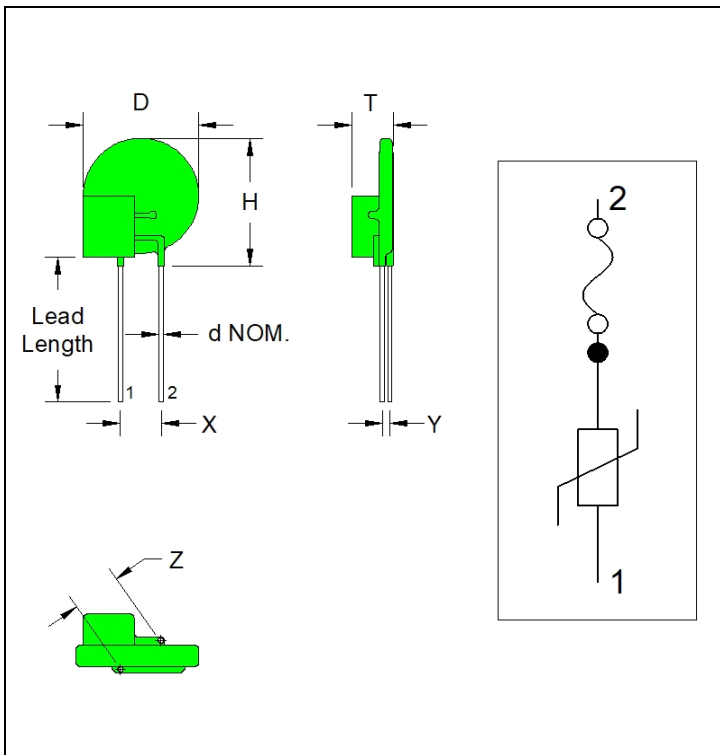
MAIDA DEVELOPMENT COMPANY
 P.O. Box 3529
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www.maida.com

Characteristic Graphs

Disconnect Response: Current vs Time

Typical Characteristic Curve





* Contact Maida for a more detailed configuration drawing.

Physical Specifications

| | |
|-----------------------|----------------|
| Lead Style | |
| X Nominal | 0.295 in. |
| X Tolerance | 0.039 in. |
| Y Nominal | 0.234 in. |
| Y Tolerance | 0.039 in. |
| Z Nominal | 0.377 in. |
| Z Tolerance | 0.039 in. |
| Lead Length Nominal | 0.394 in. |
| Lead Length Tolerance | min. in. |
| d Nominal | 0.04 in. |
| Wire Gauge | 18 AWG |
| Minimum Marking | MDC-FV-20N511K |
| Nominal Disk Size | 20 mm |
| D Maximum | 0.945 in. |
| T Maximum | 0.461 in. |
| H Maximum | 1.024 in. |
| Coating Type | EPOXY |

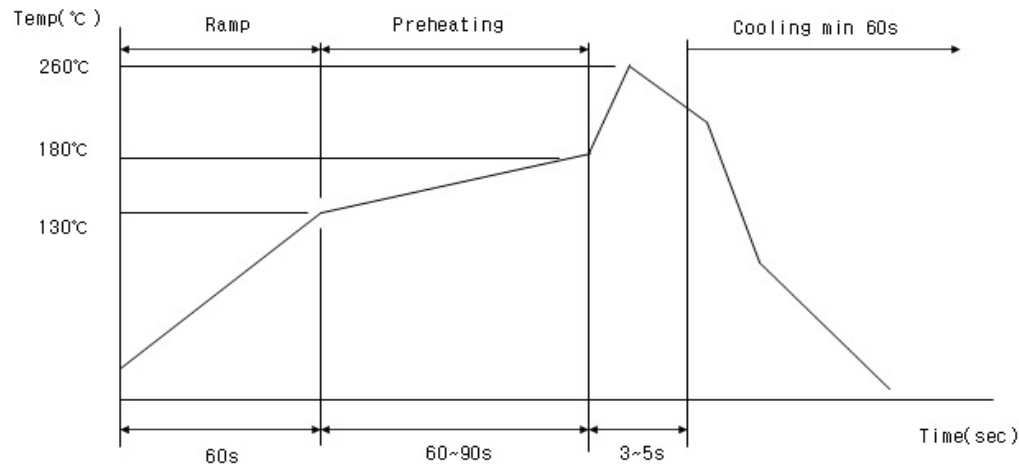
Thermal Specifications

| | |
|------------------------------------|------------|
| Minimum Operating Temperature | -55 °C |
| Maximum Operating Temperature | 85 °C |
| Varistor Voltage Temperature Coeff | -0.05 %/°C |
| Minimum Storage Temperature | -55 °C |
| Maximum Storage Temperature | 125 °C |
| Recommended Solder Temperature | 260 °C |
| Recommended Reflow Temperature | 260 °C |

Environmental Compliances



Recommended Soldering Profile



MOV Terminology

| TECHNICAL TERM | DESCRIPTION |
|--|--|
| Operating Temperature | Operating Temperature Range without Derating. |
| Storage Temperature | Storage Temperature Range without Voltage Applied. |
| Curent / Energy Derating | Derating of maximum Values when Operated above +85°C |
| Varistor Voltage Temperature Coefficient | $\frac{V_v \text{ at } 85^\circ\text{C} - V_v \text{ at } 25^\circ\text{C}}{V_v \text{ at } 25^\circ\text{C}} \times \frac{1}{60} \times 100$ <p>Where Vv is varistor voltage at 1mADC</p> |
| Insulation Resistance | Minimum resistance between shorted terminals and varistor surface. |
| HiPot Encapsulation | Minimum voltage applied for one minute between shorted terminals and varistor surface. |
| Impulse Response Time | Time lag between application of surge and varistor's "turn-on" conduction state. |
| DC Leakage Current | Maximum current with specified DC voltage applied. |
| Applied Voltage - AC | Maximum continuous sinusoidal RMS voltage which may be applied (MCOV). |
| Applied Voltage - DC | Maximum continuous DC voltage which may be applied. |
| Transient Energy (Joules) | The maximum energy absorbed with a varistor voltage change of less than $\pm 10\%$ when one impulse of an 8x20us current waveform is applied. |
| Transient Peak Current | The maximum current with a varistor voltage change of less than $\pm 10\%$ when one impulse of an 8x20us current waveform is applied. |
| Varistor Voltage | Voltage across the varistor measured at 1mADC |
| Maximum Clamping Voltage | Peak voltage across the varistor with a specific peak impulse current applied (8x20us). |
| Capacitance | Typical value measured at 1Vrms and a test frequency of 1KHz. |