

## Description

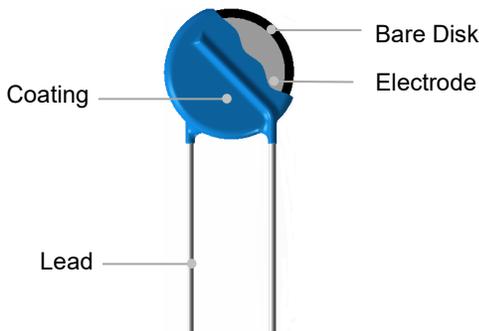


Metal Oxide Varistor (MOV) is a nonlinear resistance component with zinc oxide (ZnO) as its main constituent. The resistance of an MOV is sensitive to changes in the applied voltage. Below the threshold voltage, the MOV exhibits high resistance, allowing only a negligibly small leakage current to flow. Once the threshold voltage is exceeded, the resistance of the MOV drops sharply, enabling the conduction of a large current. This characteristic makes the MOV suitable for detecting and suppressing surge voltage and overvoltage, thereby protecting the circuit from damage caused by excessive voltage.

The Metal Oxide Varistor (MOV) finds wide application in various fields such as photovoltaics, communication, lightning protection, power supply, and power strips. It serves to suppress transient overvoltage and absorb surge energy within the circuit.

SETsafe | SETfuse offers Metal Oxide Varistors (MOV) with maximum peak current ratings ranging from 0.75 kA to 70 kA, and maximum continuous voltage ratings from 14VAC to 750 VAC. Safety certification includes UL, cUL, TUV, and CQC, and complies with RoHS and REACH requirements.

## Product Structure



## Lead Types

| Lead Types           | Codes |
|----------------------|-------|
| Straight Lead        | A     |
| Outward Crimp Lead   | C     |
| Little Straight Lead | I     |
| Inline Crimp Lead    | D     |

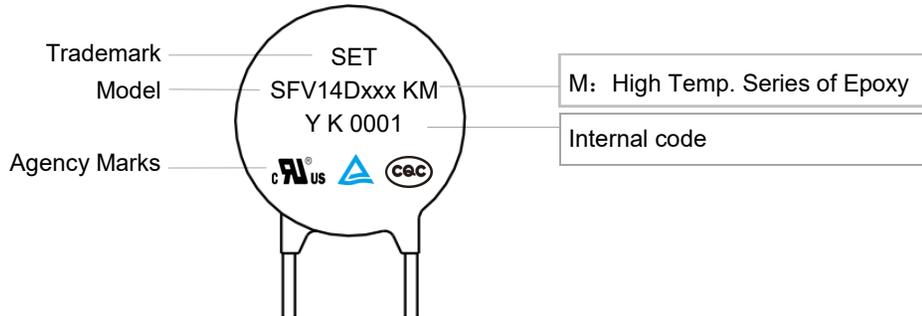
## Agency Information

| Agency | Standards   | No.            |
|--------|---|----------------|
|        | UL 1449 5 <sup>th</sup> Edition   | E322662        |
|        | CSA C22.2 NO.269.5-17   | E322662        |
|        | EN IEC 61051-1:2018<br>EN IEC 61051-2:2021<br>IEC 61051-2-2:1991<br>Annex G.8.1 of IEC 62368-1:2018 | J 50500868     |
|        | GB/T 10193-1997<br>GB/T 10194-1997<br>GB 4943.1-2022<br>IEC 61051-2-1991+Amd1:2009                  | CQC12001292475 |

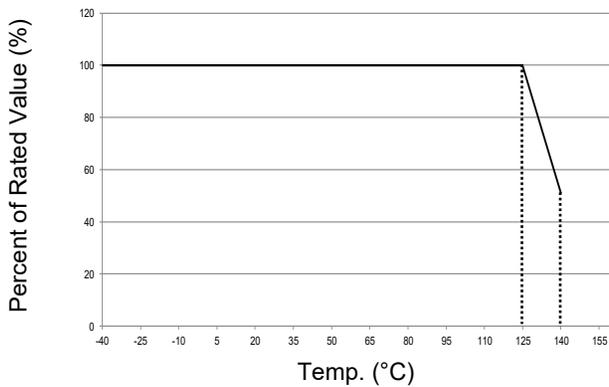
## Applications

- Power Supplies
- Home Electrical Appliances
- Industrial Devices
- Surge Protectors
- Telecom Devices

### Marking



### Temp. Derating Curve



Note:

For high temp. series, when ambient temp. exceeds 125 °C, the peak surge current and energy rating should be reduced as shown in the left curve.

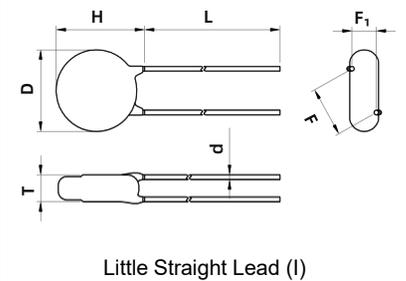
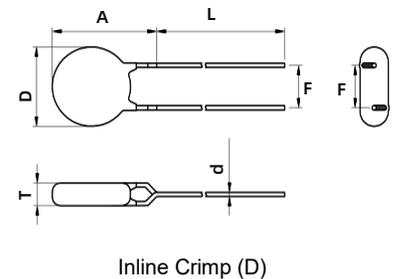
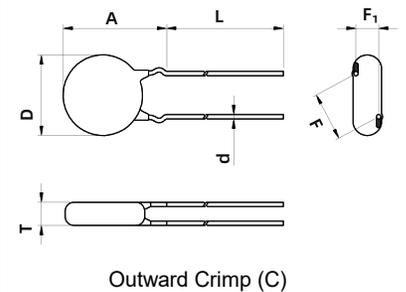
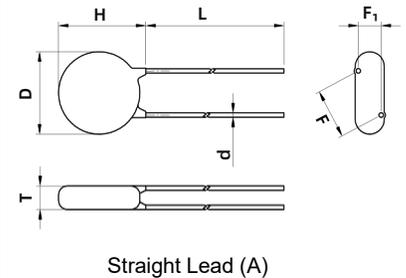
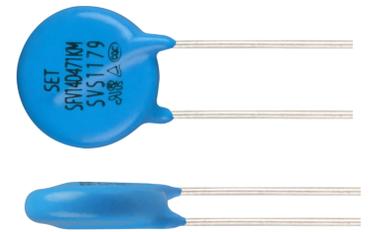
For High Temp. Series Products

### General Technical Data

| Item                  | Value      | Unit            |
|-----------------------|------------|-----------------|
| Operating Temperature | -40 ~ +125 | °C              |
| Storage Temperature   | -40 ~ +150 | °C              |
| Voltage Proof         | ≥2500      | V <sub>ac</sub> |
| Insulation Resistance | ≥100       | MΩ              |

**Dimensions (mm)**

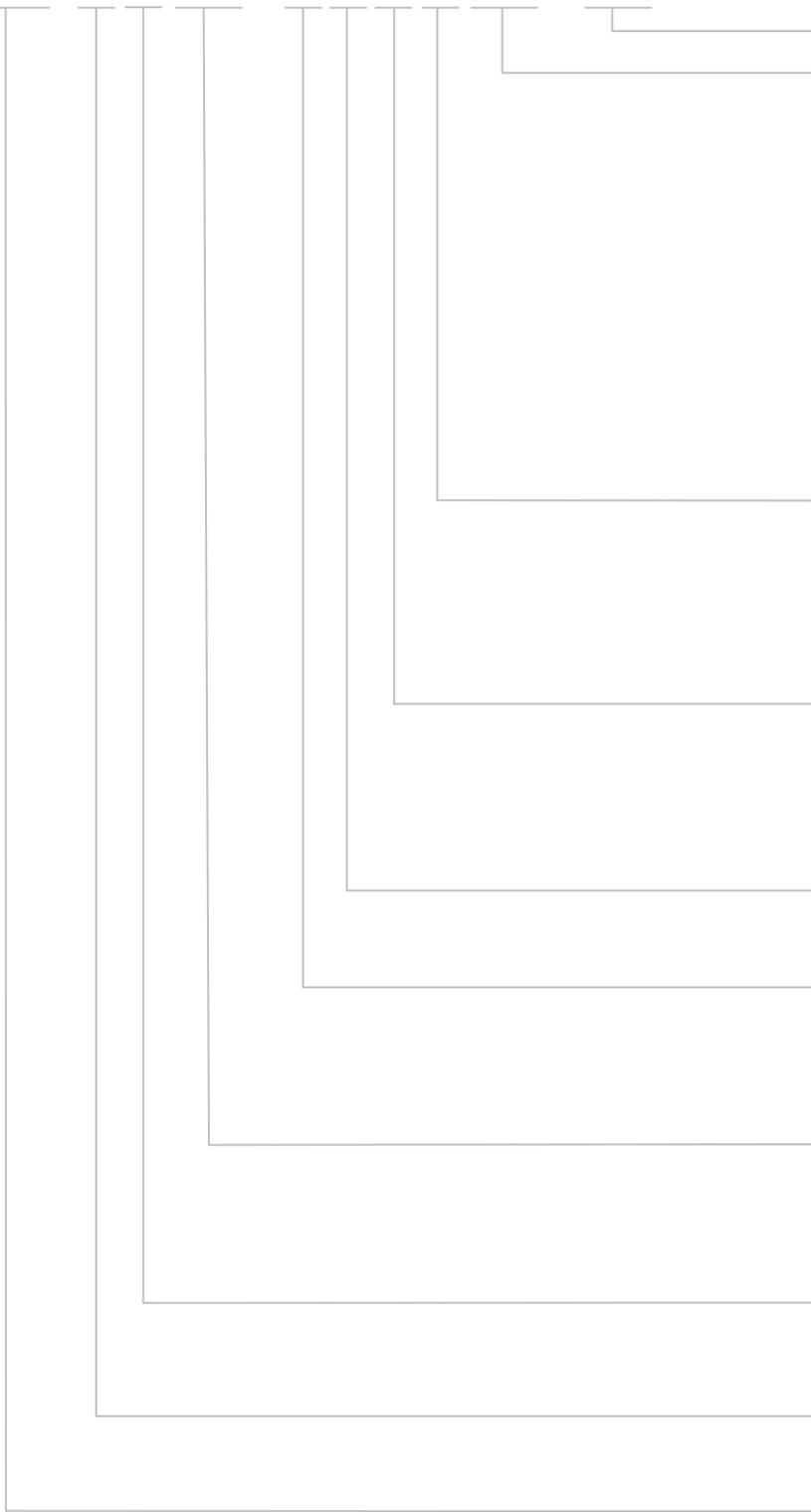
| Model       | L (Min.) | H (Max.) | T (Max.) | D (Max.) | d         | F       | F <sub>1</sub> | A (Max.) |
|-------------|----------|----------|----------|----------|-----------|---------|----------------|----------|
| SFV14D820KM | 20       | 18.5     | 4.4      | 16.5     | 0.80±0.05 | 7.5±0.6 | 1.2 ~ 2.6      | 21.5     |
| SFV14D101KM | 20       | 18.5     | 4.6      | 16.5     | 0.80±0.05 | 7.5±0.6 | 1.3 ~ 2.8      | 21.5     |
| SFV14D121KM | 20       | 18.5     | 4.8      | 16.5     | 0.80±0.05 | 7.5±0.6 | 1.4 ~ 3.0      | 21.5     |
| SFV14D151KM | 20       | 18.5     | 5.1      | 16.5     | 0.80±0.05 | 7.5±0.6 | 1.6 ~ 3.3      | 21.5     |
| SFV14D181KM | 20       | 18.5     | 4.3      | 16.5     | 0.80±0.05 | 7.5±0.6 | 1.0 ~ 2.6      | 21.5     |
| SFV14D201KM | 20       | 18.5     | 4.4      | 16.5     | 0.80±0.05 | 7.5±0.6 | 1.1 ~ 2.7      | 21.5     |
| SFV14D221KM | 20       | 18.5     | 4.5      | 16.5     | 0.80±0.05 | 7.5±0.6 | 1.2 ~ 2.8      | 21.5     |
| SFV14D241KM | 20       | 18.5     | 4.6      | 16.5     | 0.80±0.05 | 7.5±0.6 | 1.3 ~ 2.9      | 21.5     |
| SFV14D271KM | 20       | 18.5     | 4.8      | 16.5     | 0.80±0.05 | 7.5±0.6 | 1.4 ~ 3.1      | 21.5     |
| SFV14D301KM | 20       | 18.5     | 4.9      | 16.5     | 0.80±0.05 | 7.5±0.6 | 1.5 ~ 3.2      | 21.5     |
| SFV14D331KM | 20       | 18.5     | 5.1      | 16.5     | 0.80±0.05 | 7.5±0.6 | 1.6 ~ 3.3      | 21.5     |
| SFV14D361KM | 20       | 18.5     | 5.2      | 16.5     | 0.80±0.05 | 7.5±0.6 | 1.7 ~ 3.5      | 21.5     |
| SFV14D391KM | 20       | 18.5     | 5.4      | 16.5     | 0.80±0.05 | 7.5±0.6 | 1.8 ~ 3.6      | 21.5     |
| SFV14D431KM | 20       | 18.5     | 5.6      | 16.5     | 0.80±0.05 | 7.5±0.6 | 1.8 ~ 3.8      | 21.5     |
| SFV14D471KM | 20       | 18.5     | 5.8      | 16.5     | 0.80±0.05 | 7.5±0.6 | 2.0 ~ 4.0      | 21.5     |
| SFV14D511KM | 20       | 18.5     | 6.0      | 16.5     | 0.80±0.05 | 7.5±0.6 | 2.2 ~ 4.2      | 21.5     |
| SFV14D561KM | 20       | 18.5     | 6.2      | 16.5     | 0.80±0.05 | 7.5±0.6 | 2.4 ~ 4.4      | 21.5     |
| SFV14D621KM | 20       | 18.5     | 6.1      | 16.5     | 0.80±0.05 | 7.5±0.6 | 2.7 ~ 4.7      | 21.5     |
| SFV14D681KM | 20       | 18.5     | 6.8      | 16.5     | 0.80±0.05 | 7.5±0.6 | 3.0 ~ 5.0      | 21.5     |
| SFV14D751KM | 20       | 18.5     | 7.2      | 16.5     | 0.80±0.05 | 7.5±0.6 | 3.3 ~ 5.3      | 21.5     |
| SFV14D821KM | 20       | 18.5     | 7.6      | 16.5     | 0.80±0.05 | 7.5±0.6 | 3.6 ~ 5.6      | 21.5     |
| SFV14D911KM | 20       | 18.5     | 8.0      | 16.5     | 0.80±0.05 | 7.5±0.6 | 4.0 ~ 6.0      | 21.5     |
| SFV14D102KM | 20       | 18.5     | 8.4      | 16.5     | 0.80±0.05 | 7.5±0.6 | 4.5 ~ 6.5      | 21.5     |
| SFV14D112KM | 20       | 18.5     | 8.9      | 16.5     | 0.80±0.05 | 7.5±0.6 | 4.9 ~ 6.9      | 21.5     |
| SFV14D122KM | 20       | 18.5     | 9.4      | 16.5     | 0.80±0.05 | 7.5±0.6 | 5.4 ~ 7.4      | 21.5     |



Note:  
The above data is for reference only.

### Part Numbering System

SFV 14 D 471 - K M K A BUL - 001



**Other Options**

**\*Packaging & Lead Length**

BUL: Bulk + Standard Lead Length (Normal L28)  
 C35: Bulk + Cut to 3.5 mm  
 (Range:2.5 mm to 6 mm)  
 L30: Bulk + Special Lead Length 30 mm  
 (28 mm to 32 mm)  
 (0/1)AB: Taping + Box (Hole Pitch 12.7 mm)  
 (0/1)EB: Taping + Box (Hole Pitch 15.0 mm)  
 (0/1)AR: Taping + Reel (Hole Pitch 12.7 mm)  
 (0/1)ER: Taping + Reel (Hole Pitch 15.0 mm)  
 Note:0/1 Means Product Position  
 0: In Middle of Two Holes; 1: Across the Hole

**Lead Types**

A: Straight Lead  
 C: Outward Crimp Lead  
 D: Inline Crimp Lead  
 I: Little Straight Lead

**Surge Level**

S: Normal Type  
 K: Standard Type  
 Q: Advanced Type  
 H: High Energy Type

**Operating Temp.**

M: Epoxy Coating 125 °C

**Voltage Tolerance**

K: ±10%  
 J: ±5%  
 S: Special Tolerance

**Nominal Varistor Voltage**

220:  $22 \times 10^0 = 22 \text{ V}$   
 471:  $47 \times 10^1 = 470 \text{ V}$   
 122:  $12 \times 10^2 = 1200 \text{ V}$

**Disk Shape**

D: Round

**Bare Disk Dimension**

14: 14 mm

**Product Category**

SETfuse Varistor

**Reminder:**

Part numbering system in the datasheet is only for selecting correct parameter and product features. Before placing order, please contact us for specifications and use the part number and product code in the specifications to place order to ensure the part is correct. Product code is the unique identification.

**Specification**

| Model       | Surge Level | Max. Continuous Operating Voltage |     | Varistor Voltage @1 mA DC |      | Clamping Voltage (Max.) |                | Max. Peak Current (1 time, 8/20 μs) | Max. Energy (10/1000 μs) | Typical Capacitance (For reference only) @1 kHz | Agency Information |     |      |    |     |     |     |
|-------------|-------------|-----------------------------------|-----|---------------------------|------|-------------------------|----------------|-------------------------------------|--------------------------|---|--------------------|-----|------|----|-----|-----|-----|
|             |             | VAC                               | VDC | Min.                      | Max. | V <sub>C</sub>          | I <sub>P</sub> |                                     |                          |   | S                  |     | (pF) | UL | cUL | TUV | CQC |
|             |             | (V)                               | (V) | (V)                       | (V)  | (V)                     | (A)            |                                     |                          |   | (kA)               | (J) |      | UL | cUL | TUV | CQC |
| SFV14D820KM | S           | 50                                | 65  | 74                        | 90   | 135                     | 50             | 4.5                                 | 22                       | 2400  | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D101KM | S           | 60                                | 85  | 90                        | 110  | 165                     | 50             | 4.5                                 | 28                       | 2000  | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D121KM | S           | 75                                | 100 | 108                       | 132  | 200                     | 50             | 4.5                                 | 32                       | 1700  | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D151KM | S           | 95                                | 125 | 135                       | 165  | 250                     | 50             | 4.5                                 | 40                       | 1300  | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D181KM | S           | 115                               | 150 | 162                       | 198  | 300                     | 50             | 4.5                                 | 50                       | 1100  | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D201KM | S           | 130                               | 170 | 180                       | 220  | 340                     | 50             | 4.5                                 | 57                       | 1000  | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D221KM | S           | 140                               | 180 | 198                       | 242  | 360                     | 50             | 4.5                                 | 60                       | 900   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D241KM | S           | 150                               | 200 | 216                       | 264  | 395                     | 50             | 4.5                                 | 63                       | 830   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D271KM | S           | 175                               | 225 | 243                       | 297  | 455                     | 50             | 4.5                                 | 70                       | 740   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D301KM | S           | 190                               | 250 | 270                       | 330  | 500                     | 50             | 4.5                                 | 77                       | 670   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D331KM | S           | 210                               | 275 | 297                       | 363  | 550                     | 50             | 4.5                                 | 85                       | 610   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D361KM | S           | 230                               | 300 | 324                       | 396  | 595                     | 50             | 4.5                                 | 93                       | 560   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D391KM | S           | 250                               | 320 | 351                       | 429  | 650                     | 50             | 4.5                                 | 100                      | 510   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D431KM | S           | 275                               | 350 | 387                       | 473  | 710                     | 50             | 4.5                                 | 115                      | 460   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D471KM | S           | 300                               | 385 | 423                       | 517  | 775                     | 50             | 4.5                                 | 125                      | 430   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D511KM | S           | 320                               | 415 | 459                       | 561  | 845                     | 50             | 4.5                                 | 125                      | 390   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D561KM | S           | 350                               | 460 | 504                       | 616  | 925                     | 50             | 4.5                                 | 125                      | 360   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D621KM | S           | 385                               | 505 | 558                       | 682  | 1025                    | 50             | 4.5                                 | 125                      | 320   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D681KM | S           | 420                               | 560 | 612                       | 748  | 1120                    | 50             | 4.5                                 | 130                      | 290   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D751KM | S           | 460                               | 615 | 675                       | 825  | 1240                    | 50             | 4.5                                 | 143                      | 270   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D821KM | S           | 510                               | 670 | 738                       | 902  | 1355                    | 50             | 4.5                                 | 157                      | 240   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D911KM | S           | 550                               | 745 | 819                       | 1001 | 1500                    | 50             | 4.5                                 | 175                      | 220   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D102KM | S           | 625                               | 825 | 900                       | 1100 | 1650                    | 50             | 4.5                                 | 190                      | 200   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D112KM | S           | 680                               | 895 | 990                       | 1210 | 1815                    | 50             | 4.5                                 | 213                      | 180   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D122KM | S           | 750                               | 990 | 1080                      | 1320 | 1980                    | 50             | 4.5                                 | 213                      | 150   | ●                  | ●   | ●    | ●  |     |     |     |

●: Approved      ○: Unauthorized      ●: RoHS & REACH Compliant

**Specification**

| Model       | Surge Level | Max. Continuous Operating Voltage |     | Varistor Voltage @1 mA DC |      | Clamping Voltage (Max.) |                | Max. Peak Current (1 time, 8/20 μs) | Max. Energy (10/1000 μs) | Typical Capacitance (For reference only) @1 kHz | Agency Information |     |      |    |     |     |     |
|-------------|-------------|-----------------------------------|-----|---------------------------|------|-------------------------|----------------|-------------------------------------|--------------------------|---|--------------------|-----|------|----|-----|-----|-----|
|             |             | VAC                               | VDC | Min.                      | Max. | V <sub>C</sub>          | I <sub>P</sub> |                                     |                          |   | K                  |     | (pF) | UL | cUL | TUV | CQC |
|             |             | (V)                               | (V) | (V)                       | (V)  | (V)                     | (A)            |                                     |                          |   | (kA)               | (J) |      | UL | cUL | TUV | CQC |
| SFV14D820KM | K           | 50                                | 65  | 74                        | 90   | 135                     | 50             | 6                                   | 28                       | 2400  | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D101KM | K           | 60                                | 85  | 90                        | 110  | 165                     | 50             | 6                                   | 35                       | 2000  | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D121KM | K           | 75                                | 100 | 108                       | 132  | 200                     | 50             | 6                                   | 42                       | 1700  | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D151KM | K           | 95                                | 125 | 135                       | 165  | 250                     | 50             | 6                                   | 53                       | 1300  | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D181KM | K           | 115                               | 150 | 162                       | 198  | 300                     | 50             | 6                                   | 60                       | 1100  | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D201KM | K           | 130                               | 170 | 180                       | 220  | 340                     | 50             | 6                                   | 70                       | 1000  | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D221KM | K           | 140                               | 180 | 198                       | 242  | 360                     | 50             | 6                                   | 78                       | 900   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D241KM | K           | 150                               | 200 | 216                       | 264  | 395                     | 50             | 6                                   | 84                       | 830   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D271KM | K           | 175                               | 225 | 243                       | 297  | 455                     | 50             | 6                                   | 99                       | 740   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D301KM | K           | 190                               | 250 | 270                       | 330  | 500                     | 50             | 6                                   | 108                      | 670   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D331KM | K           | 210                               | 275 | 297                       | 363  | 550                     | 50             | 6                                   | 115                      | 610   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D361KM | K           | 230                               | 300 | 324                       | 396  | 595                     | 50             | 6                                   | 130                      | 560   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D391KM | K           | 250                               | 320 | 351                       | 429  | 650                     | 50             | 6                                   | 140                      | 510   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D431KM | K           | 275                               | 350 | 387                       | 473  | 710                     | 50             | 6                                   | 155                      | 460   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D471KM | K           | 300                               | 385 | 423                       | 517  | 775                     | 50             | 6                                   | 175                      | 430   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D511KM | K           | 320                               | 415 | 459                       | 561  | 845                     | 50             | 6                                   | 180                      | 390   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D561KM | K           | 350                               | 460 | 504                       | 616  | 925                     | 50             | 6                                   | 185                      | 360   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D621KM | K           | 385                               | 505 | 558                       | 682  | 1025                    | 50             | 6                                   | 190                      | 320   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D681KM | K           | 420                               | 560 | 612                       | 748  | 1120                    | 50             | 6                                   | 200                      | 290   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D751KM | K           | 460                               | 615 | 675                       | 825  | 1240                    | 50             | 6                                   | 210                      | 270   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D821KM | K           | 510                               | 670 | 738                       | 902  | 1355                    | 50             | 6                                   | 235                      | 240   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D911KM | K           | 550                               | 745 | 819                       | 1001 | 1500                    | 50             | 6                                   | 255                      | 220   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D102KM | K           | 625                               | 825 | 900                       | 1100 | 1650                    | 50             | 6                                   | 270                      | 200   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D112KM | K           | 680                               | 895 | 990                       | 1210 | 1815                    | 50             | 6                                   | 280                      | 180   | ●                  | ●   | ●    | ●  |     |     |     |
| SFV14D122KM | K           | 750                               | 990 | 1080                      | 1320 | 1980                    | 50             | 6                                   | 310                      | 150   | ●                  | ●   | ●    | ●  |     |     |     |

●: Approved      ○: Unauthorized      ●: RoHS & REACH Compliant

**Specification**

| Model       | Surge Level | Max. Continuous Operating Voltage |     | Varistor Voltage @1 mA DC |      | Clamping Voltage (Max.) |                | Pulse Impact Performance (40 times) (1.2/50 μs & 8/20 μs) | Max. Energy (10/1000 μs) | Typical Capacitance (For reference only) @1 kHz | Agency Information |     |    |     |     |     |
|-------------|-------------|-----------------------------------|-----|---------------------------|------|-------------------------|----------------|---|--------------------------|---|--------------------|-----|----|-----|-----|-----|
|             |             | VAC                               | VDC | Min.                      | Max. | V <sub>C</sub>          | I <sub>P</sub> |   |                          |   | Q                  |     | UL | cUL | TUV | CQC |
|             |             | (V)                               | (V) | (V)                       | (V)  | (V)                     | (A)            |   |                          |   | (kV)               | (J) |    |     |     |     |
| SFV14D201KM | Q           | 130                               | 170 | 180                       | 220  | 340                     | 50             | 6.6   | 70                       | 1000  | ●                  | ●   | ●  | ●   |     |     |
| SFV14D221KM | Q           | 14                                | 180 | 198                       | 242  | 360                     | 50             | 6.6   | 78                       | 900   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D241KM | Q           | 150                               | 200 | 216                       | 264  | 395                     | 50             | 6.6   | 84                       | 830   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D271KM | Q           | 175                               | 225 | 243                       | 297  | 455                     | 50             | 6.6   | 99                       | 740   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D301KM | Q           | 190                               | 250 | 270                       | 330  | 500                     | 50             | 6.6   | 108                      | 670   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D331KM | Q           | 210                               | 275 | 297                       | 363  | 550                     | 50             | 6.6   | 115                      | 610   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D361KM | Q           | 230                               | 300 | 324                       | 396  | 595                     | 50             | 6.6   | 130                      | 560   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D391KM | Q           | 250                               | 320 | 351                       | 429  | 650                     | 50             | 6.6   | 140                      | 510   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D431KM | Q           | 275                               | 350 | 387                       | 473  | 710                     | 50             | 6.6   | 155                      | 460   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D471KM | Q           | 300                               | 385 | 423                       | 517  | 775                     | 50             | 6.6   | 175                      | 430   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D511KM | Q           | 320                               | 415 | 459                       | 561  | 845                     | 50             | 6.6   | 180                      | 390   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D561KM | Q           | 350                               | 460 | 504                       | 616  | 925                     | 50             | 6.6   | 185                      | 360   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D621KM | Q           | 385                               | 505 | 558                       | 682  | 1025                    | 50             | 6.6   | 190                      | 320   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D681KM | Q           | 420                               | 560 | 612                       | 748  | 1120                    | 50             | 6.6   | 200                      | 290   | ●                  | ●   | ●  | ●   |     |     |

●: Approved      ○: Unauthorized      ●: RoHS & REACH Compliant

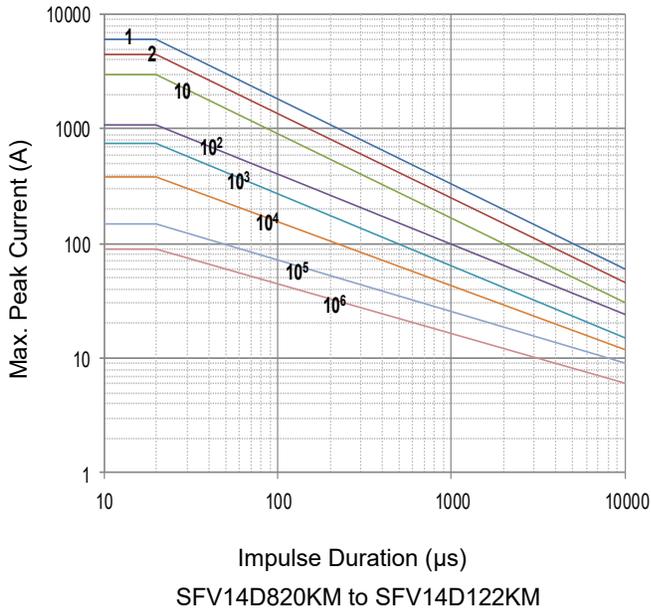
**Specification**

| Model       | Surge Level | Max. Continuous Operating Voltage |     | Varistor Voltage @1 mA DC |      | Clamping Voltage (Max.) |                | Max. Peak Current (1 time, 8/20 μs) | Max. Energy (8/20 μs) | Typical Capacitance (For reference only) @1 kHz | Agency Information |     |    |     |     |     |
|-------------|-------------|-----------------------------------|-----|---------------------------|------|-------------------------|----------------|-------------------------------------|-----------------------|---|--------------------|-----|----|-----|-----|-----|
|             |             | VAC                               | VDC | Min.                      | Max. | V <sub>C</sub>          | I <sub>P</sub> |                                     |                       |   | H                  |     | UL | cUL | TUV | CQC |
|             |             | (V)                               | (V) | (V)                       | (V)  | (V)                     | (A)            |                                     |                       |   | (kA)               | (J) |    |     |     |     |
| SFV14D201KM | H           | 130                               | 170 | 180                       | 220  | 340                     | 50             | 8                                   | 150                   | 1000  | ●                  | ●   | ●  | ●   |     |     |
| SFV14D221KM | H           | 140                               | 180 | 198                       | 242  | 360                     | 50             | 8                                   | 160                   | 900   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D241KM | H           | 150                               | 200 | 216                       | 264  | 395                     | 50             | 8                                   | 180                   | 830   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D271KM | H           | 175                               | 225 | 243                       | 297  | 455                     | 50             | 8                                   | 200                   | 740   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D301KM | H           | 190                               | 250 | 270                       | 330  | 500                     | 50             | 8                                   | 220                   | 670   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D331KM | H           | 210                               | 275 | 297                       | 363  | 550                     | 50             | 8                                   | 245                   | 610   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D361KM | H           | 230                               | 300 | 324                       | 396  | 595                     | 50             | 8                                   | 260                   | 560   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D391KM | H           | 250                               | 320 | 351                       | 429  | 650                     | 50             | 8                                   | 290                   | 510   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D431KM | H           | 275                               | 350 | 387                       | 473  | 710                     | 50             | 8                                   | 320                   | 460   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D471KM | H           | 300                               | 385 | 423                       | 517  | 775                     | 50             | 8                                   | 350                   | 430   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D511KM | H           | 320                               | 415 | 459                       | 561  | 845                     | 50             | 8                                   | 380                   | 390   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D561KM | H           | 350                               | 460 | 504                       | 616  | 925                     | 50             | 8                                   | 400                   | 360   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D621KM | H           | 385                               | 505 | 558                       | 682  | 1025                    | 50             | 8                                   | 400                   | 320   | ●                  | ●   | ●  | ●   |     |     |
| SFV14D681KM | H           | 420                               | 560 | 612                       | 748  | 1120                    | 50             | 8                                   | 400                   | 290   | ●                  | ●   | ●  | ●   |     |     |

●: Approved      ○: Unauthorized      ●: RoHS & REACH Compliant

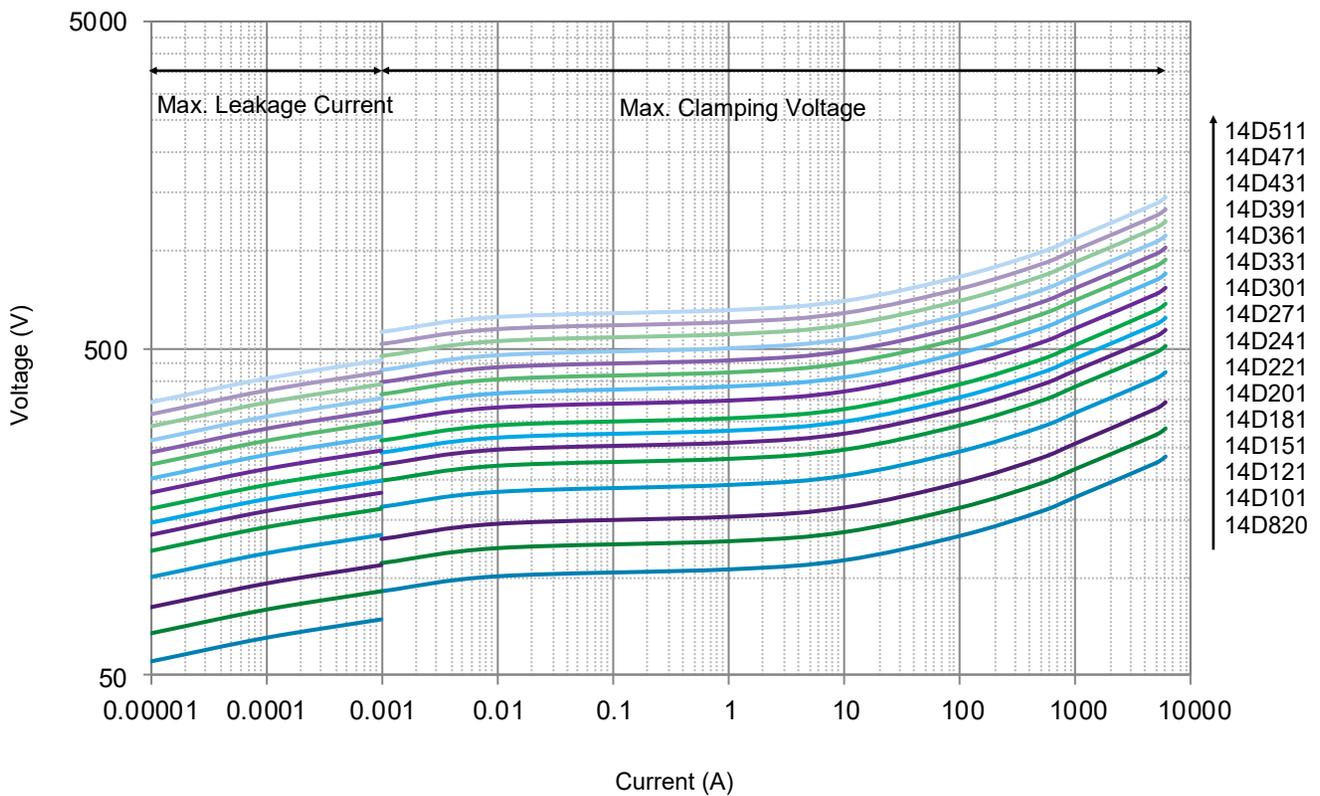
### Performance Curve (For reference only)

- Max. Peak Current Derating Curves

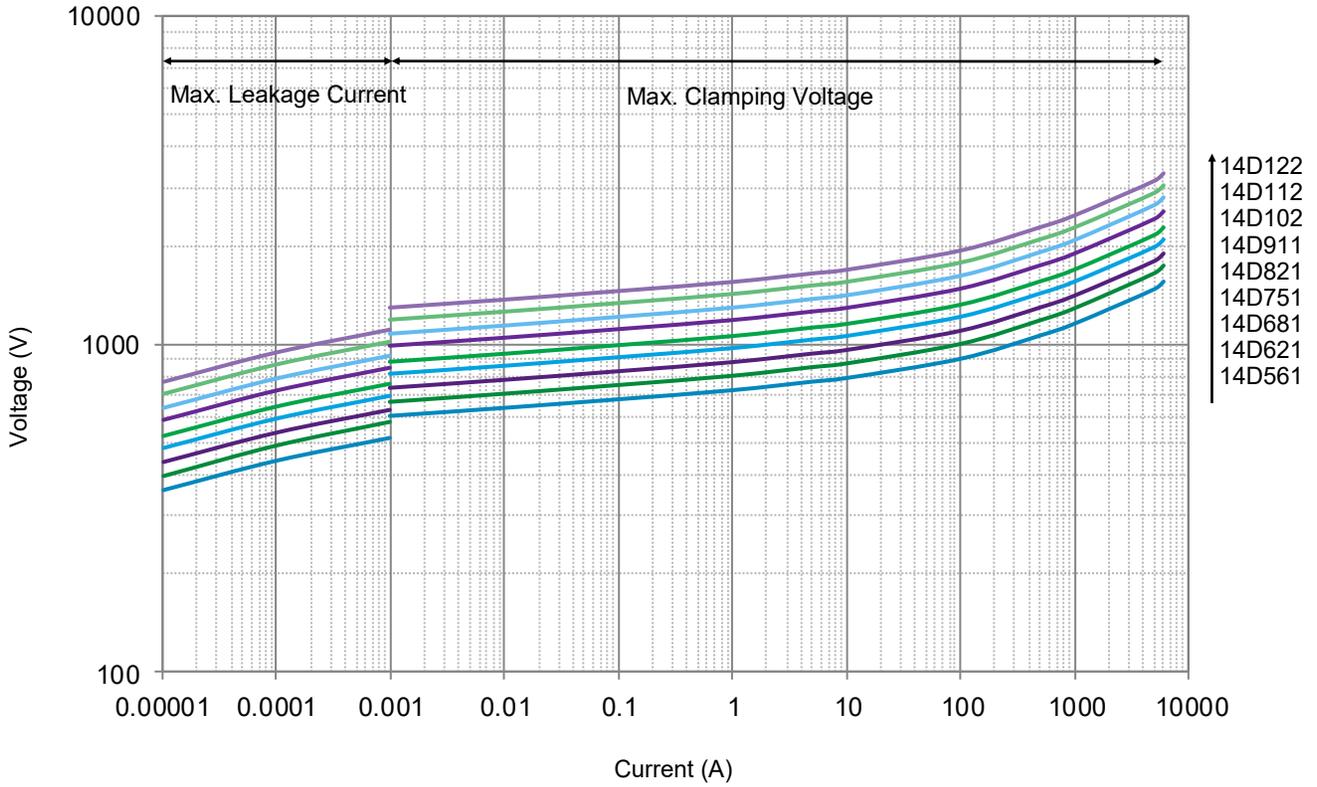


Note: 1, 2, 10, 10<sup>2</sup>, 10<sup>3</sup>, 10<sup>4</sup>, 10<sup>5</sup>, 10<sup>6</sup> Stand for Repetitions.

- Voltage-Current Characteristic Curves



• Voltage-Current Characteristic Curves



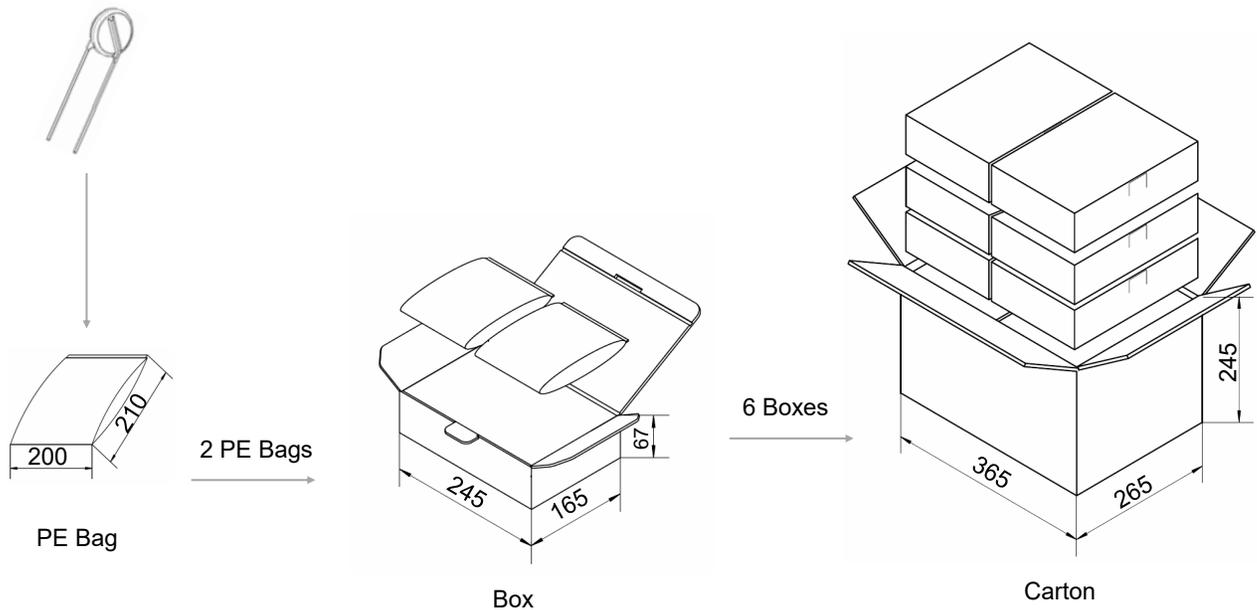
### Packaging Information

- Bulk Packaging (Code: BUL)
- Bulk Packaging Quantity & Weight.

| Series          | Nominal Varistor Voltage | PE Bag | Box   | Carton | G. W / Carton<br>(365 × 265 × 245) |
|-----------------|--------------------------|--------|-------|--------|------------------------------------|
|                 | (V)                      | (PCS)  | (PCS) | (PCS)  | (kg)±10%                           |
| SFV14D M Series | 820 ~ 361                | 500    | 1000  | 6000   | 9 ~ 15                             |
|                 | 391 ~ 621                | 400    | 800   | 4800   | 13 ~ 18                            |
|                 | 681 ~ 122                | 250    | 500   | 3000   | 12 ~ 20                            |

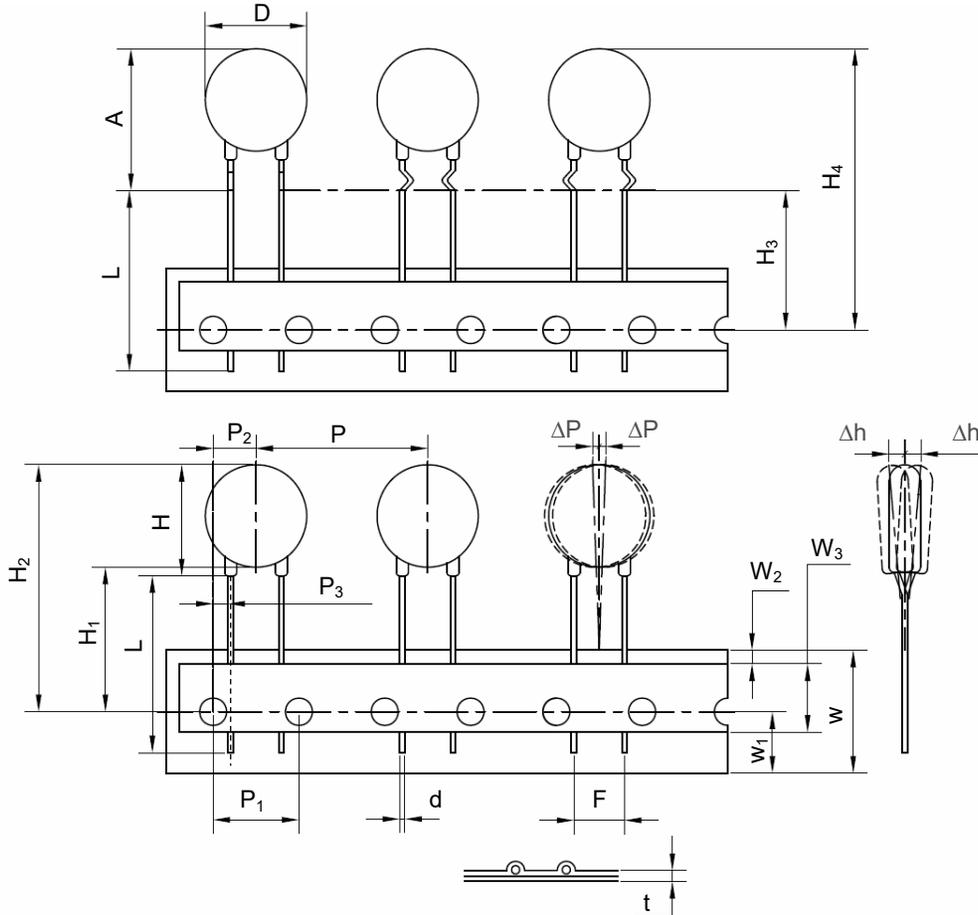
Note:  
Other lead length packaging information, please contact SETsafe | SETfuse.

All Dimensions in mm



**Packaging Information**

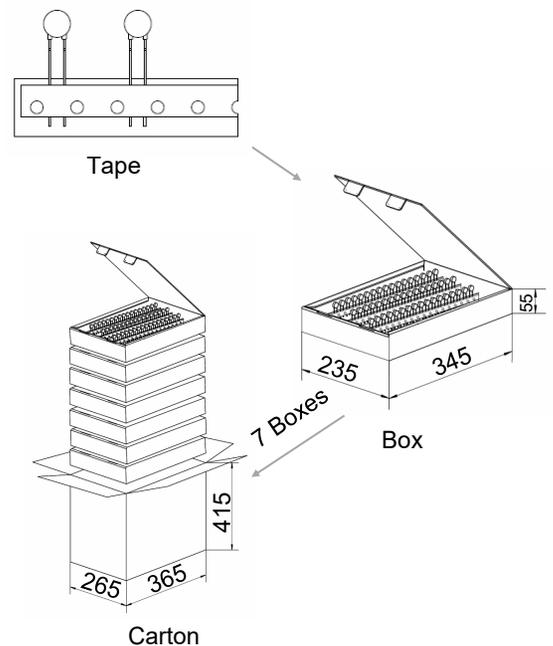
- Tape Packaging (Code: 0AB)



| Dimensions (mm)       |                                    |
|-----------------------|------------------------------------|
| P                     | 25.4±1.0                           |
| P <sub>1</sub>        | 12.7±0.3                           |
| P <sub>2</sub>        | 6.35±1.3                           |
| P <sub>3</sub>        | 2.6±0.7                            |
| ΔP(max.)              | 1.0                                |
| W                     | 18.0±1.0                           |
| W <sub>1</sub>        | 9.0±1.0                            |
| W <sub>2</sub> (max.) | 3.0                                |
| W <sub>3</sub>        | 10.0±2.0                           |
| H(max.)               | 18.5                               |
| H <sub>1</sub>        | 18.0                               |
| H <sub>2</sub> (max.) | 40.0 <sup>+2.0</sup> <sub>-0</sub> |
| H <sub>3</sub>        | 18.0                               |
| H <sub>4</sub> (max.) | 42.0 <sup>+2.0</sup> <sub>-0</sub> |
| Δh(max.)              | 2.0                                |
| t(max.)               | 0.6                                |
| D(max.)               | 16.5                               |
| D <sub>0</sub>        | 4.0±0.2                            |
| d                     | 0.80±0.05                          |
| A(max.)               | 21.5                               |
| F                     | 7.5±1.0                            |
| L(min.)               | /                                  |

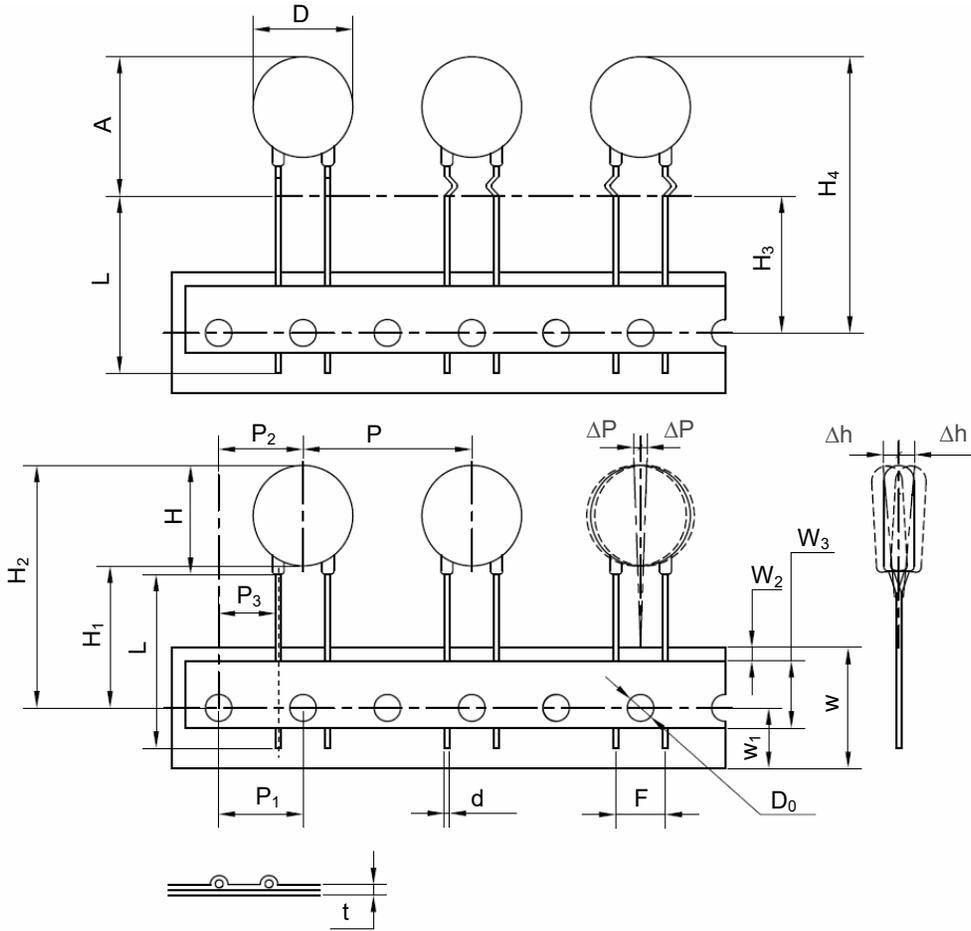
- Tape Packaging Quantity & Weight.

| Series | Nominal Varistor Voltage (V) | Box (PCS) | Carton (PCS) | G. W / Carton (365 × 265 × 415) (kg)±10% |
|--------|------------------------------|-----------|--------------|--|
| 14D    | 112 ~ 122                    | 250       | 1750         | 10 ~ 12                                  |
|        | 681 ~ 102                    | 300       | 2100         | 9 ~ 12                                   |
|        | 471 ~ 621                    | 400       | 2800         | 9 ~ 11                                   |
|        | 301 ~ 431                    | 500       | 3500         | 8 ~ 10                                   |
|        | 820 ~ 271                    | 600       | 4200         | 6 ~ 9                                    |



**Packaging Information**

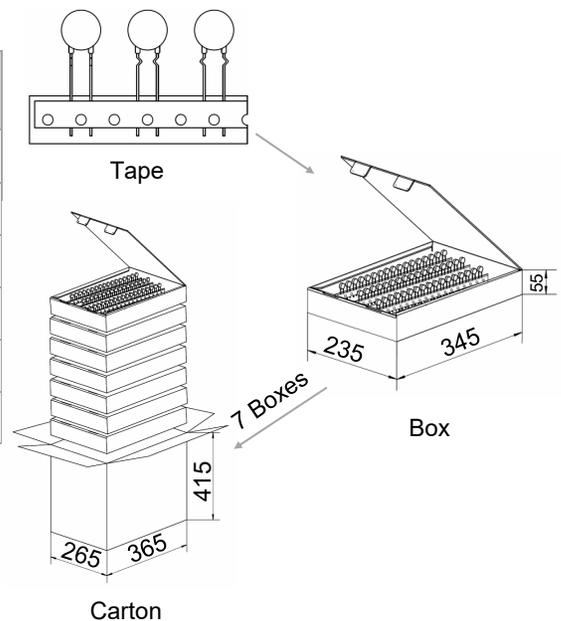
- Tape Packaging (Code: 1AB)



| Dimensions (mm)       |                                    |
|-----------------------|------------------------------------|
| P                     | 25.4±1.0                           |
| P <sub>1</sub>        | 12.7±0.3                           |
| P <sub>2</sub>        | 12.7±1.3                           |
| P <sub>3</sub>        | 8.95±0.7                           |
| ΔP(max.)              | 1.0                                |
| W                     | 18.0±1.0                           |
| W <sub>1</sub>        | 9.0±1.0                            |
| W <sub>2</sub> (max.) | 3.0                                |
| W <sub>3</sub>        | 10.0±2.0                           |
| H(max.)               | 18.5                               |
| H <sub>1</sub>        | 18.0                               |
| H <sub>2</sub> (max.) | 40.0 <sup>+2.0</sup> <sub>-0</sub> |
| H <sub>3</sub>        | 18.0                               |
| H <sub>4</sub> (max.) | 42.0 <sup>+2.0</sup> <sub>-0</sub> |
| Δh(max.)              | 2.0                                |
| t(max.)               | 0.6                                |
| D(max.)               | 16.5                               |
| D <sub>0</sub>        | 4.0±0.2                            |
| d                     | 0.80±0.05                          |
| A(max.)               | 21.5                               |
| F                     | 7.5±1.0                            |
| L(min.)               | /                                  |

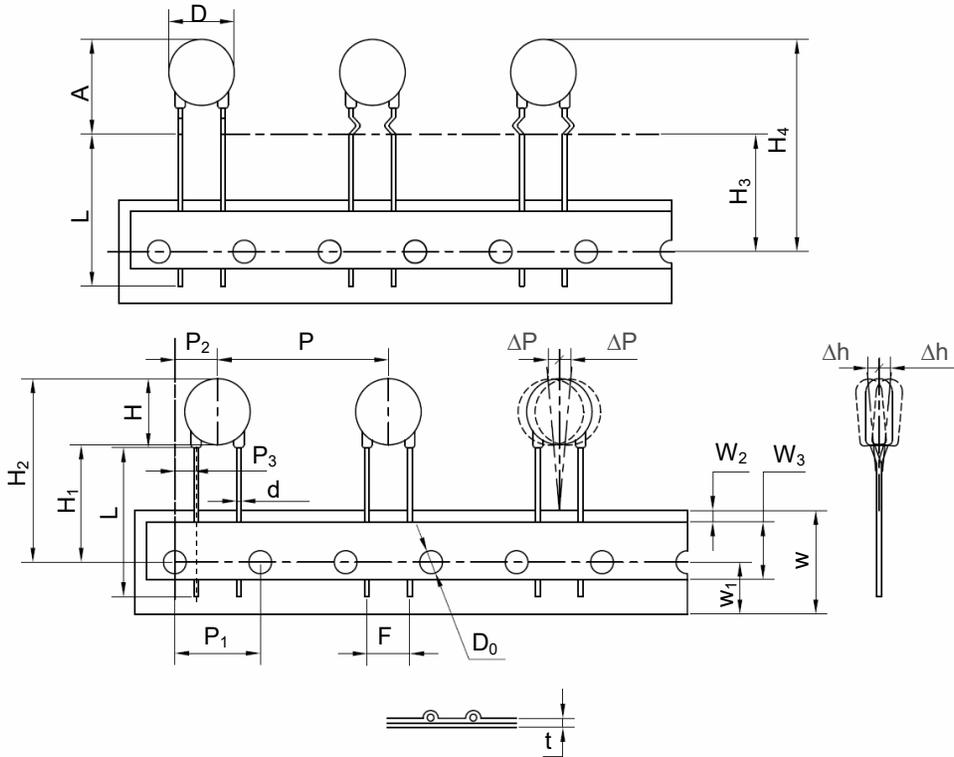
- Tape Packaging Quantity & Weight.

| Series | Nominal Varistor Voltage (V) | Box (PCS) | Carton (PCS) | G. W / Carton (365 × 265 × 415) (kg)±10% |
|--------|------------------------------|-----------|--------------|--|
| 14D    | 112 ~ 122                    | 250       | 1750         | 10 ~ 12                                  |
|        | 681 ~ 102                    | 300       | 2100         | 9 ~ 12                                   |
|        | 471 ~ 621                    | 400       | 2800         | 9 ~ 11                                   |
|        | 301 ~ 431                    | 500       | 3500         | 8 ~ 10                                   |
|        | 820 ~ 271                    | 600       | 4200         | 6 ~ 9                                    |



**Packaging Information**

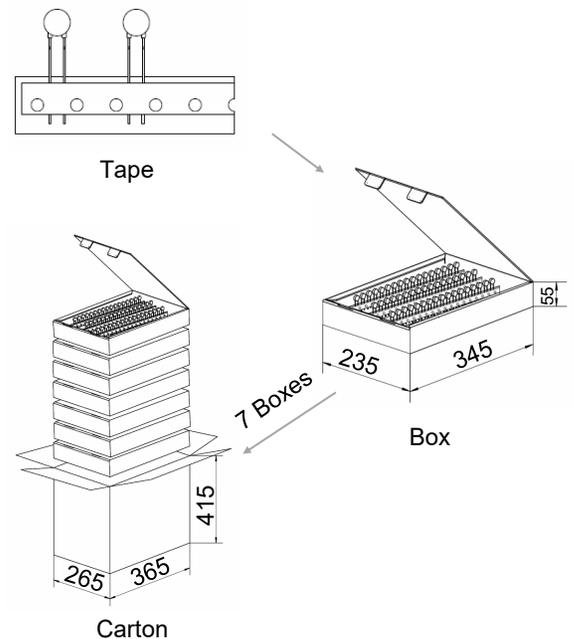
- Tape Packaging (Code: 0EB)



| Dimensions (mm)       |                                    |
|-----------------------|------------------------------------|
| P                     | 30.0±1.0                           |
| P <sub>1</sub>        | 15.0±0.3                           |
| P <sub>2</sub>        | 7.5±1.3                            |
| P <sub>3</sub>        | 3.75±1.0                           |
| ΔP(max.)              | 1.0                                |
| W                     | 18.0±1.0                           |
| W <sub>1</sub>        | 9.0±1.0                            |
| W <sub>2</sub> (max.) | 3.0                                |
| W <sub>3</sub>        | 10.0±2.0                           |
| H(max.)               | 18.5                               |
| H <sub>1</sub>        | 18.0                               |
| H <sub>2</sub> (max.) | 40.0 <sup>+2.0</sup> <sub>-0</sub> |
| H <sub>3</sub>        | 18.0                               |
| H <sub>4</sub> (max.) | 42.0 <sup>+2.0</sup> <sub>-0</sub> |
| Δh(max.)              | 2.0                                |
| t(max.)               | 0.6                                |
| D(max.)               | 16.5                               |
| D <sub>0</sub>        | 4.0±0.2                            |
| d                     | 0.80±0.05                          |
| A(max.)               | 21.5                               |
| F                     | 7.5±1.0                            |
| L(min.)               | /                                  |

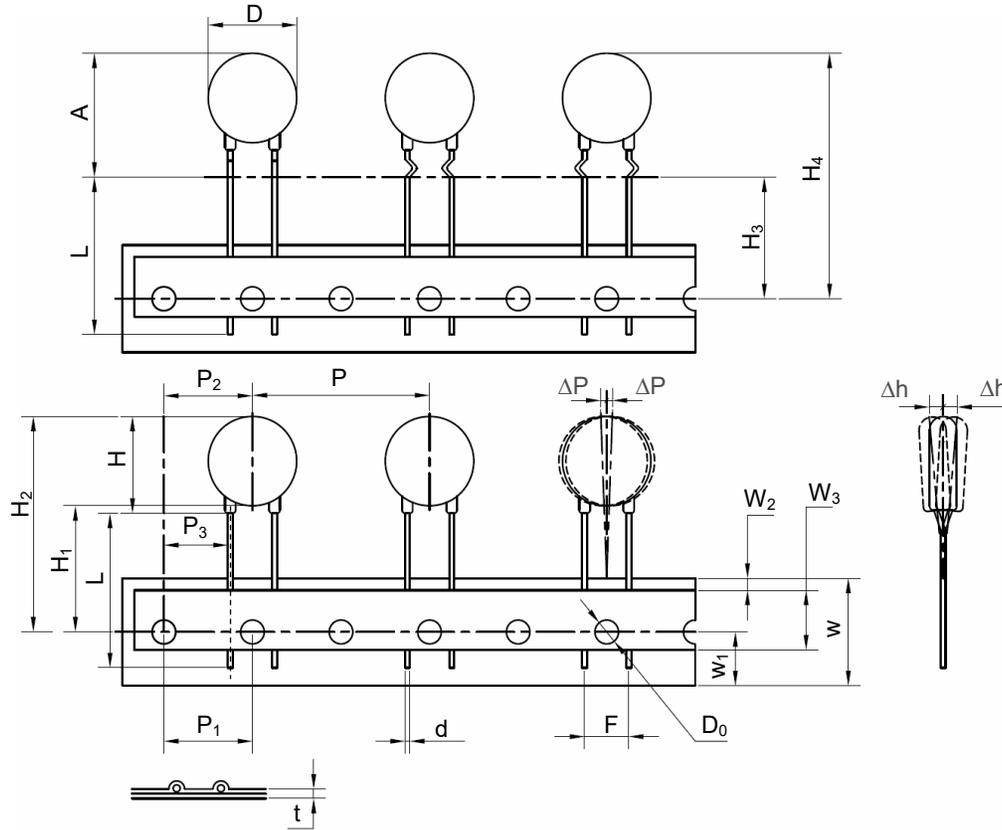
- Tape Packaging Quantity & Weight.

| Series | Nominal Varistor Voltage (V) | Box (PCS) | Carton (PCS) | G. W / Carton (365 × 265 × 415) (kg)±10% |
|--------|------------------------------|-----------|--------------|--|
| 14D    | 112 ~ 122                    | 200       | 1400         | 8 ~ 9                                    |
|        | 821 ~ 102                    | 250       | 1750         | 8 ~ 9                                    |
|        | 681 ~ 751                    | 300       | 2100         | 8 ~ 9                                    |
|        | 511 ~ 621                    | 350       | 2450         | 8 ~ 9                                    |
|        | 391 ~ 471                    | 400       | 2800         | 7 ~ 9                                    |
|        | 301 ~ 361                    | 450       | 3150         | 7 ~ 9                                    |
|        | 241 ~ 271                    | 500       | 3500         | 6 ~ 7                                    |
|        | 151                          |           |              | 7  |
|        | 181 ~ 221                    | 550       | 3850         | 6 ~ 7                                    |
|        | 101 ~ 121                    |           |              |  |
|        | 820                          | 600       | 4200         | 6  |



**Packaging Information**

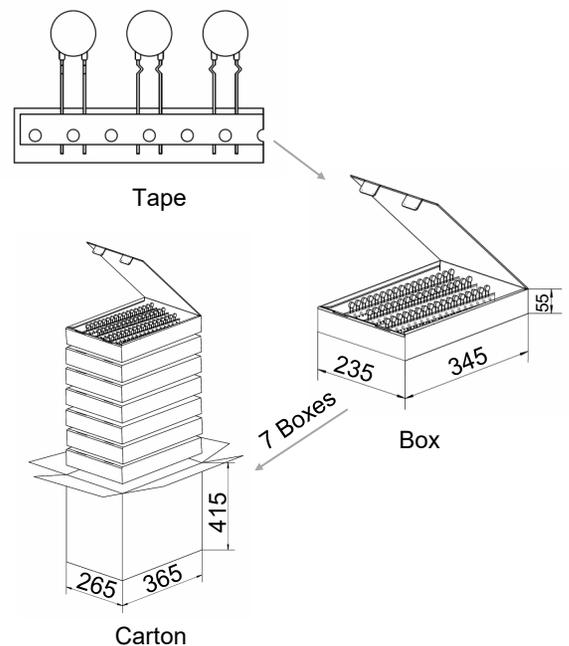
- Tape Packaging (Code: 1EB)



| Dimensions (mm)       |                                    |
|-----------------------|------------------------------------|
| P                     | 30.0±1.0                           |
| P <sub>1</sub>        | 15.0±0.3                           |
| P <sub>2</sub>        | 15.0±1.3                           |
| P <sub>3</sub>        | 11.25±1.0                          |
| ΔP(max.)              | 1.0                                |
| W                     | 18.0±1.0                           |
| W <sub>1</sub>        | 9.0±1.0                            |
| W <sub>2</sub> (max.) | 3.0                                |
| W <sub>3</sub>        | 10.0±1.0                           |
| H(max.)               | 18.5                               |
| H <sub>1</sub>        | 18.0                               |
| H <sub>2</sub> (max.) | 40.0 <sup>+2.0</sup> <sub>-0</sub> |
| H <sub>3</sub>        | 18.0                               |
| H <sub>4</sub> (max.) | 42.0 <sup>+2.0</sup> <sub>-0</sub> |
| Δh(max.)              | 2.0                                |
| t(max.)               | 0.55                               |
| D(max.)               | 16.5                               |
| D <sub>0</sub>        | 4.0±0.2                            |
| d                     | 0.80±0.05                          |
| A(max.)               | 21.5                               |
| F                     | 7.5±1.0                            |
| L(min.)               | /                                  |

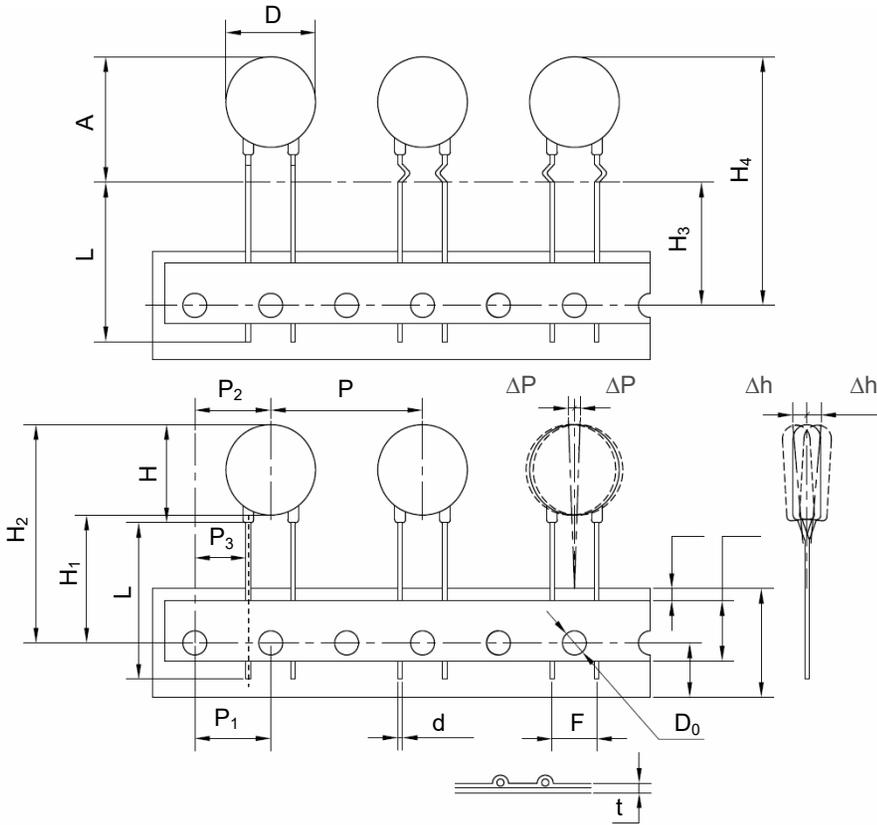
- Tape Packaging Quantity & Weight.

| Series | Nominal Varistor Voltage (V) | Box (PCS) | Carton (PCS) | G. W / Carton (365 × 265 × 415) (kg)±10% |
|--------|------------------------------|-----------|--------------|--|
| 14D    | 112 ~ 122                    | 200       | 1400         | 8 ~ 9                                    |
|        | 821 ~ 102                    | 250       | 1750         | 8 ~ 9                                    |
|        | 681 ~ 751                    | 300       | 2100         | 8 ~ 9                                    |
|        | 511 ~ 621                    | 350       | 2450         | 8 ~ 9                                    |
|        | 391 ~ 471                    | 400       | 2800         | 7 ~ 9                                    |
|        | 301 ~ 361                    | 450       | 3150         | 7 ~ 9                                    |
|        | 241 ~ 271                    | 500       | 3500         | 6 ~ 7                                    |
|        | 151                          |           |              | 7  |
|        | 181 ~ 221                    | 550       | 3850         | 6 ~ 7                                    |
|        | 101 ~ 121                    |           |              |  |
|        | 820                          | 600       | 4200         | 6  |



### Packaging Information

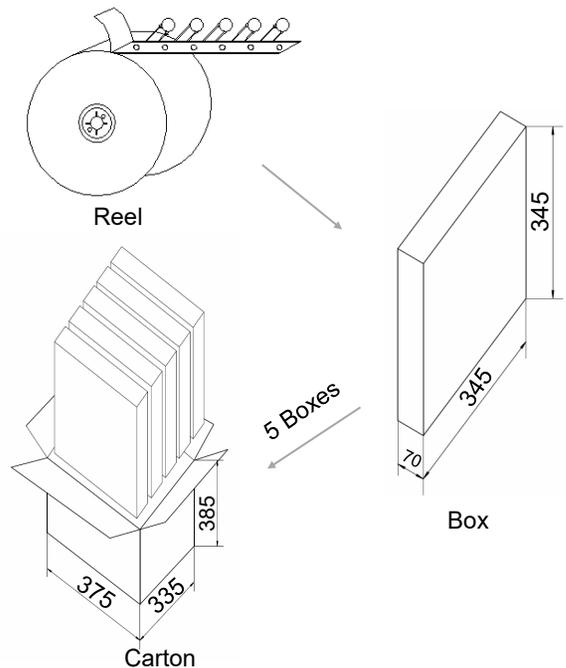
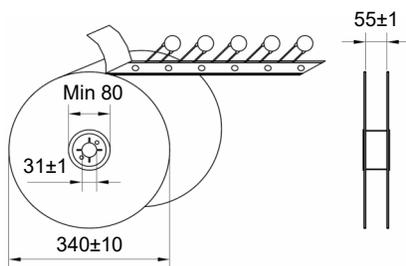
- Reel Packaging (Code:1AR)



| Dimensions (mm)       |                                    |
|-----------------------|------------------------------------|
| P                     | 25.4±1.0                           |
| P <sub>1</sub>        | 12.7±0.3                           |
| P <sub>2</sub>        | 12.7±1.3                           |
| P <sub>3</sub>        | 8.95±0.7                           |
| ΔP(max.)              | 1.0                                |
| W                     | 18.0±1.0                           |
| W <sub>1</sub>        | 9.0±1.0                            |
| W <sub>2</sub> (max.) | 3.0                                |
| W <sub>3</sub>        | 10.0±2.0                           |
| H(max.)               | 18.5                               |
| H <sub>1</sub>        | 18.0                               |
| H <sub>2</sub> (max.) | 40.0 <sup>+2.0</sup> <sub>-0</sub> |
| H <sub>3</sub>        | 18.0                               |
| H <sub>4</sub> (max.) | 42.0 <sup>+2.0</sup> <sub>-0</sub> |
| Δh(max.)              | 2.0                                |
| t (max.)              | 0.6                                |
| D(max.)               | 16.5                               |
| D <sub>0</sub>        | 4.0±0.2                            |
| d                     | 0.80±0.05                          |
| A(max.)               | 21.5                               |
| F                     | 7.5±1.0                            |
| L(min.)               | /                                  |

- Reel Packaging Quantity & Weight.

| Series | Nominal Varistor Voltage (V) | Box (PCS) | Carton (PCS) | G. W / Carton (375 × 335 × 385) (kg)±10% |
|--------|------------------------------|-----------|--------------|--|
| 14D    | 220 ~ 301                    | 650       | 3250         | 4 ~ 8                                    |
|        | 331 ~ 681                    | 400       | 2000         | 4 ~ 8                                    |
|        | 751 ~ 122                    | 250       | 1250         | 5 ~ 8                                    |



## Installation

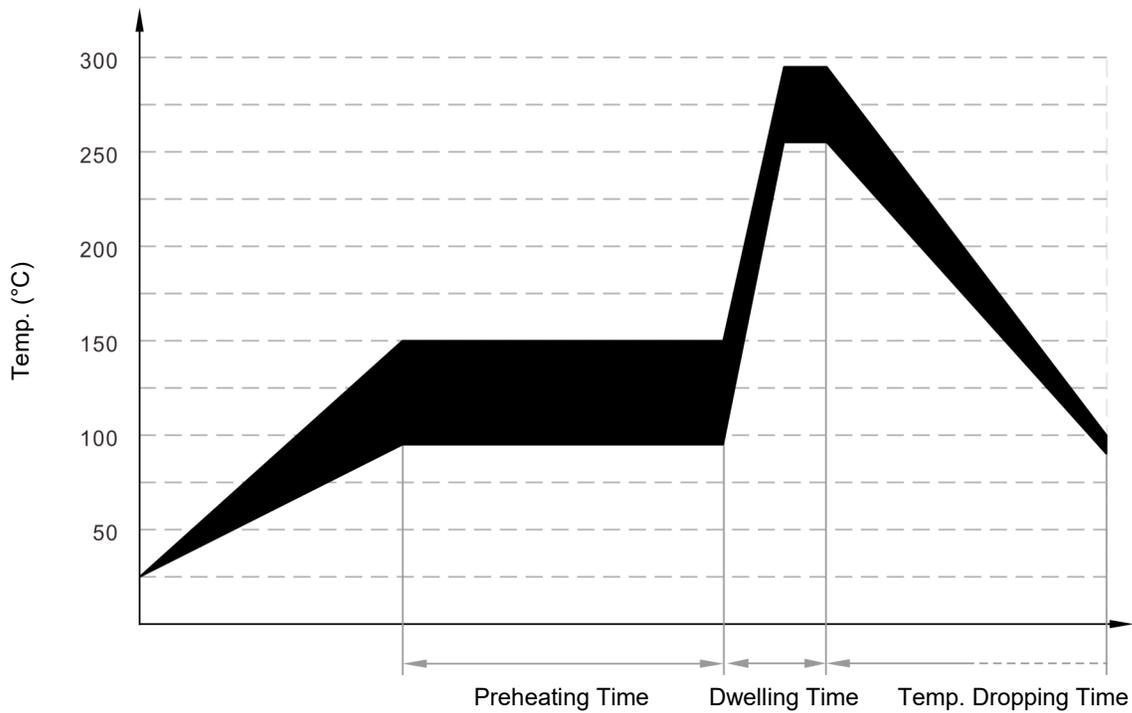
### Mechanical Stress

Do not knock MOV when installing, to avoid mechanical damage.

## Soldering Parameters

### Wave Soldering Parameters

The wave soldering parameters are for reference only. When MOV is for practice use, some related validation is recommended.



Wave Soldering Curve

| Item       | Temp. (°C) | Time (s) |
|------------|------------|----------|
| Preheating | 90 to 150  | <150     |
| Dwelling   | 255 to 290 | 3 to 10  |

## Recommended Hand-Soldering Parameters

| Item                 | Condition        |
|----------------------|------------------|
| Temp. of Solder Head | 350 °C (max.)    |
| Soldering Time       | 4 seconds (max.) |

## Glossary

| Item              | Description  |
|-------------------|--|
| $V_N$             | <b>Nominal Varistor Voltage</b><br>Voltage, at specified D.C. current used as a reference point in the component characteristics.<br>— (GB 18802.331)<br>— (IEC 61051-1)   |
| $I_L$             | <b>Leakage Current</b><br>Measuring at 75% of varistor voltage.<br>— (GB/T 10193)<br>— (IEC 61051-1)   |
| UCT               | <b>Upper Category Temp.</b><br>Max. ambient temp. for which a varistor has been designed to operate continuously.<br>— (GB/T 10193)<br>— (IEC 61051-1)   |
| LCT               | <b>Lower Category Temp.</b><br>Minimum ambient temp. at which a varistor has been designed to operate continuously.<br>— (GB/T 10193)<br>— (IEC 61051-1)   |
| Max. Peak Current | <b>Max. Peak Current</b><br>Max. current per pulse, which may be passed by a varistor at an ambient temp. of 25 °C, for a given number of pulses.<br>— (GB/T 10193)<br>— (IEC 61051-1)   |
| $V_C$             | <b>Clamping Voltage</b><br>Peak voltage developed across the varistor terminations under standard atmospheric conditions, when passing an 8/20 $\mu$ s class current pulse.<br>— (GB 18802.331)<br>— (IEC 61051-1)   |
| Voltage Proof     | <b>Voltage Proof</b><br>Max. peak voltage, which may be applied under continuous operating conditions between the varistor terminations and any conducting mounting surface (Applicable only to insulated varistors).<br>— (GB/T 10193)<br>— (IEC 61051-1)                 |
| $C_V$             | <b>Capacitance</b><br>Capacitance across the MOV measured at a specified frequency and voltage.<br>— (GB 18802.331)<br>— (IEC 61051-1)   |
| $V_{ac}$          | <b>Max. Continuous a.c. Voltage</b><br>Max. a.c. r.m.s. voltage of a substantially sinusoidal waveform (less than 5% total harmonic distortion) which can be applied to the component under continuous operating conditions at 25 °C.<br>— (GB/T 10193)<br>— (IEC 61051-1) |
| $V_{dc}$          | <b>Max. Continuous d.c. Voltage</b><br>Max. d.c. voltage (with less than 5% ripple) which can be applied to the component under continuous operating conditions at an ambient temp. of 25 °C.<br>— (GB/T 10193)<br>— (IEC 61051-1)   |
| $I_{max}$         | <b>Max. Discharge Current</b><br>Crest value of a current through the SPD having an 8/20 $\mu$ s waveshape and magnitude according to the manufacturers specification. $I_{max}$ is equal to or greater than $I_n$ .<br>— (GB 18802.1)<br>— (IEC 61643-11)                 |



# ATTENTION

## Usage

1. Varistor must operated in the specified ambient temp.
2. Do not clean the varistor with strong polar solvent such as ketone, esters, benzene and halogenated hydrocarbon.
3. Please do not apply severe vibration, shock or pressure to MOV.
4. Please fix lead wires when bending or cutting. The distance between the bending point and the sealing of MOV shall be greater than 2 mm.

## Replacement

If varistor is visually damaged, please replace it.

## Storage

1. Storage Temp. Range: (-40 to +125) °C.
2. Relative Humidity : ≤75% RH.
3. Altitude: <2000 m.
4. Do not store the MOV at the high temp., high humidity or corrosive gas environment, to avoid influencing the solder-ability of the lead wires, the product shall be used up within 1 year after receiving the goods.

## Environmental Conditions

1. Varistor should neither be exposed to the open air, nor direct sunshine.
2. Varistor should avoid rain, water vapor or other condition of high temp. and high humidity.
3. Varistor should avoid sand dust, salt spray, or other harmful gases.

## Max. Typical Capacitance of Varistor

The typical capacitance of varistor is listed in the specifications. Designers may refer to it when designing MOV in high frequency circuit.

### Metal Oxide Varistor (MOV) Feature & Model List Overview

| Nominal Operating Voltage $U_n$ (V) |      |              |               |              |               |               |   |               |               |               |               | Page          |            | Model | Maximum Continuous Operating Voltage $U_n$ (V) |  |
|-------------------------------------|------|--------------|---------------|--------------|---------------|---------------|---|---------------|---------------|---------------|---------------|---------------|------------|-------|--|--|
|                                     |      | AC           | DC            | 0.5          | 1             | 1.75          | 2 | 3             | 3.5           | 6             | 10            | 20            | 70         |       |  | AC   |
| 480V                                | 500V |              |               |              |               |               |   |               | SFV10D122K(T) | SFV14D122K(T) | SFV20D122K(T) | SFV25D122K(T) | SFV53D122K | 750   | 990  | Maximum Continuous Operating Voltage $U_n$ (V) |
|                                     |      |              |               |              |               |               |   |               | SFV10D112K(T) | SFV14D112K(T) | SFV20D112K(T) | SFV25D112K(T) | SFV53D112K | 680   | 895  |  |
| 415V                                |      |              |               |              |               |               |   | SFV10D102K(T) | SFV14D102K(T) | SFV20D102K(T) | SFV25D102K(T) | SFV53D102K    | 625        | 825   |  |  |
| 380V                                |      |              |               |              |               |               |   | SFV10D911K(T) | SFV14D911K(T) | SFV20D911K(T) | SFV25D911K(T) | SFV53D911K    | 550        | 745   |  |  |
|                                     |      |              |               | SFV7D821K(T) |               |               |   | SFV10D821K(T) | SFV14D821K(T) | SFV20D821K(T) | SFV25D821K(T) | SFV53D821K    | 510        | 670   |  |  |
| 100V                                | 250V |              |               |              |               |               |   | SFV10D751K(T) | SFV14D751K(T) | SFV20D751K(T) | SFV25D751K(T) | SFV53D751K    | 460        | 615   |  |  |
|                                     |      |              |               |              |               |               |   | SFV10D681K(T) | SFV14D681K(T) | SFV20D681K(T) | SFV25D681K(T) | SFV53D681K    | 420        | 560   |  |  |
| 240V                                |      |              |               |              |               |               |   | SFV10D621K(T) | SFV14D621K(T) | SFV20D621K(T) | SFV25D621K(T) | SFV53D621K    | 385        | 505   |  |  |
|                                     |      |              |               | SFV7D511K(T) |               |               |   | SFV10D561K(T) | SFV14D561K(T) | SFV20D561K(T) | SFV25D561K(T) | SFV53D561K    | 350        | 460   |  |  |
| 100V                                | 125V |              |               |              |               |               |   | SFV10D511K(T) | SFV14D511K(T) | SFV20D511K(T) | SFV25D511K(T) | SFV53D511K    | 320        | 415   |  |  |
|                                     |      |              |               |              |               |               |   | SFV10D471K(T) | SFV14D471K(T) | SFV20D471K(T) | SFV25D471K(T) | SFV53D471K    | 300        | 385   |  |  |
| 220V                                |      |              |               |              |               |               |   | SFV10D431K(T) | SFV14D431K(T) | SFV20D431K(T) | SFV25D431K(T) | SFV53D431K    | 275        | 350   |  |  |
|                                     |      |              |               |              |               |               |   | SFV10D391K(T) | SFV14D391K(T) | SFV20D391K(T) | SFV25D391K(T) | SFV53D391K    | 250        | 320   |  |  |
| 100V                                | 120V |              |               |              |               |               |   | SFV10D361K(T) | SFV14D361K(T) | SFV20D361K(T) | SFV25D361K(T) | SFV53D361K    | 230        | 300   |  |  |
|                                     |      |              |               |              |               |               |   | SFV10D331K(T) | SFV14D331K(T) | SFV20D331K(T) | SFV25D331K(T) | SFV53D331K    | 210        | 275   |  |  |
| 100V                                | 100V |              |               |              |               |               |   | SFV10D301K(T) | SFV14D301K(T) | SFV20D301K(T) | SFV25D301K(T) | SFV53D301K    | 190        | 250   |  |  |
|                                     |      |              |               |              |               |               |   | SFV10D271K(T) | SFV14D271K(T) | SFV20D271K(T) | SFV25D271K(T) | SFV53D271K    | 175        | 225   |  |  |
| 48V                                 | 24V  |              |               |              |               |               |   | SFV10D241K(T) | SFV14D241K(T) | SFV20D241K(T) | SFV25D241K(T) | SFV53D241K    | 150        | 200   |  |  |
|                                     |      |              |               |              |               |               |   | SFV10D221K(T) | SFV14D221K(T) | SFV20D221K(T) | SFV25D221K(T) | SFV53D221K    | 140        | 180   |  |  |
| 12V                                 | 12V  |              |               |              |               |               |   | SFV10D201K(T) | SFV14D201K(T) | SFV20D201K(T) | SFV25D201K(T) | SFV53D201K    | 130        | 170   |  |  |
|                                     |      |              |               |              |               |               |   | SFV10D181K(T) | SFV14D181K(T) | SFV20D181K(T) | SFV25D181K(T) | SFV53D181K    | 115        | 150   |  |  |
| 24V                                 | 12V  |              |               |              |               |               |   | SFV10D151K(T) | SFV14D151K(T) | SFV20D151K(T) | SFV25D151K(T) | SFV53D151K    | 95         | 125   |  |  |
|                                     |      |              |               |              |               |               |   | SFV10D121K(T) | SFV14D121K(T) | SFV20D121K(T) | SFV25D121K(T) | SFV53D121K    | 75         | 100   |  |  |
| 12V                                 | 12V  |              |               |              |               |               |   | SFV10D101K(T) | SFV14D101K(T) | SFV20D101K(T) | SFV25D101K(T) | SFV53D101K    | 60         | 85    |  |  |
|                                     |      |              |               |              |               |               |   | SFV10D820K(T) | SFV14D820K(T) | SFV20D820K(T) | SFV25D820K(T) | SFV53D820K    | 50         | 65    |  |  |
| 12V                                 | 12V  | SFV7D680K(T) | SFV10D680K(T) |              | SFV14D680K(T) | SFV20D680K(T) |   | SFV25D680K(T) |               |               |               |               | 40         | 56    |  |  |
|                                     |      | SFV7D560K(T) | SFV10D560K(T) |              | SFV14D560K(T) | SFV20D560K(T) |   | SFV25D560K(T) |               |               |               |               |            | 35    | 45   |  |
| 12V                                 | 12V  | SFV7D470K(T) | SFV10D470K(T) |              | SFV14D470K(T) | SFV20D470K(T) |   | SFV25D470K(T) |               |               |               |               | 30         | 38    |  |  |
|                                     |      | SFV7D390K(T) | SFV10D390K(T) |              | SFV14D390K(T) | SFV20D390K(T) |   | SFV25D390K(T) |               |               |               |               |            | 25    | 31   |  |
| 12V                                 | 12V  | SFV7D330K(T) | SFV10D330K(T) |              | SFV14D330K(T) | SFV20D330K(T) |   | SFV25D330K(T) |               |               |               |               | 20         | 26    |  |  |
|                                     |      | SFV7D270K(T) | SFV10D270K(T) |              | SFV14D270K(T) | SFV20D270K(T) |   | SFV25D270K(T) |               |               |               |               |            | 17    | 22   |  |
| 12V                                 | 12V  | SFV7D220K(T) | SFV10D220K(T) |              | SFV14D220K(T) | SFV20D220K(T) |   | SFV25D220K(T) |               |               |               |               | 14         | 18    |  |  |

**Metal Oxide Varistor (MOV) Feature & Model List Overview**

| Nominal Operating Voltage $U_n$ (V) |      |            |             |             |             | Page        |     | Model | Maximum Continuous Operating Voltage $U_n$ (V) |  |
|-------------------------------------|------|------------|-------------|-------------|-------------|-------------|-----|-------|--|--|
|                                     |      | 1.75       | 3.5         | 6           | 10          | 20          | AC  |       | DC   |  |
| 480V                                | 500V | ○          | SFV10D122KM | SFV14D122KM | SFV20D122KM | SFV25D122KM | 750 | 990   | Maximum Continuous Operating Voltage $U_n$ (V) |  |
|                                     |      | ○          | SFV10D112KM | SFV14D112KM | SFV20D112KM | SFV25D112KM | 680 | 895   |  |  |
|                                     |      | ○          | SFV10D102KM | SFV14D102KM | SFV20D102KM | SFV25D102KM | 625 | 825   |  |  |
|                                     |      | ○          | SFV10D911KM | SFV14D911KM | SFV20D911KM | SFV25D911KM | 550 | 745   |  |  |
| 380V                                | 500V | SFV7D821KM | SFV10D821KM | SFV14D821KM | SFV20D821KM | SFV25D821KM | 510 | 670   |  |  |
|                                     |      | SFV7D751KM | SFV10D751KM | SFV14D751KM | SFV20D751KM | SFV25D751KM | 460 | 615   |  |  |
| 100V                                | 240V | SFV7D681KM | SFV10D681KM | SFV14D681KM | SFV20D681KM | SFV25D681KM | 420 | 560   |  |  |
|                                     |      | SFV7D621KM | SFV10D621KM | SFV14D621KM | SFV20D621KM | SFV25D621KM | 385 | 505   |  |  |
| 240V                                | 240V | SFV7D561KM | SFV10D561KM | SFV14D561KM | SFV20D561KM | SFV25D561KM | 350 | 460   |  |  |
|                                     |      | SFV7D511KM | SFV10D511KM | SFV14D511KM | SFV20D511KM | SFV25D511KM | 320 | 415   |  |  |
| 100V                                | 250V | SFV7D471KM | SFV10D471KM | SFV14D471KM | SFV20D471KM | SFV25D471KM | 300 | 385   |  |  |
|                                     |      | SFV7D431KM | SFV10D431KM | SFV14D431KM | SFV20D431KM | SFV25D431KM | 275 | 350   |  |  |
| 100V                                | 250V | SFV7D391KM | SFV10D391KM | SFV14D391KM | SFV20D391KM | SFV25D391KM | 250 | 320   |  |  |
|                                     |      | SFV7D361KM | SFV10D361KM | SFV14D361KM | SFV20D361KM | SFV25D361KM | 230 | 300   |  |  |
| 120V                                | 250V | SFV7D331KM | SFV10D331KM | SFV14D331KM | SFV20D331KM | SFV25D331KM | 210 | 275   |  |  |
|                                     |      | SFV7D301KM | SFV10D301KM | SFV14D301KM | SFV20D301KM | SFV25D301KM | 190 | 250   |  |  |
| 100V                                | 125V | SFV7D271KM | SFV10D271KM | SFV14D271KM | SFV20D271KM | SFV25D271KM | 175 | 225   |  |  |
|                                     |      | SFV7D241KM | SFV10D241KM | SFV14D241KM | SFV20D241KM | SFV25D241KM | 150 | 200   |  |  |
|                                     |      | SFV7D221KM | SFV10D221KM | SFV14D221KM | SFV20D221KM | SFV25D221KM | 140 | 180   |  |  |
|                                     |      | SFV7D201KM | SFV10D201KM | SFV14D201KM | SFV20D201KM | SFV25D201KM | 130 | 170   |  |  |
| 48V                                 | 125V | SFV7D181KM | SFV10D181KM | SFV14D181KM | SFV20D181KM | SFV25D181KM | 115 | 150   |  |  |
|                                     |      | SFV7D151KM | SFV10D151KM | SFV14D151KM | SFV20D151KM | SFV25D151KM | 95  | 125   |  |  |
|                                     |      | SFV7D121KM | SFV10D121KM | SFV14D121KM | SFV20D121KM | SFV25D121KM | 75  | 100   |  |  |
|                                     |      | SFV7D101KM | SFV10D101KM | SFV14D101KM | SFV20D101KM | SFV25D101KM | 60  | 85    |  |  |
| 24V                                 | 12V  | SFV7D820KM | SFV10D820KM | SFV14D820KM | SFV20D820KM | SFV25D820KM | 50  | 65    |  |  |
|                                     |      | ○          | ○           | SFV25D680KM | ○           | ○           | 40  | 56    |  |  |
| 12V                                 | 12V  | ○          | ○           | SFV25D560KM | ○           | ○           | 35  | 45    |  |  |
|                                     |      | ○          | ○           | SFV25D470KM | ○           | ○           | 30  | 38    |  |  |
| 12V                                 | 12V  | ○          | ○           | ○           | ○           | ○           | 25  | 31    |  |  |
|                                     |      | ○          | ○           | ○           | ○           | ○           | 20  | 26    |  |  |
| AC                                  | DC   | ○          | ○           | ○           | ○           | ○           | 17  | 22    |  |  |
|                                     |      | ○          | ○           | ○           | ○           | ○           | 14  | 18    |  |  |

Maximum Peak Current (8/20  $\mu$ s) (kA)

**Metal Oxide Varistor (MOV) Feature & Model List Overview**

| Nominal Operating Voltage $U_n$ (V) |      |            |  |            |   |   |            |            |            |            |            | Page       |            |     |     |
|-------------------------------------|------|------------|--|------------|---|---|------------|------------|------------|------------|------------|------------|------------|-----|-----|
|                                     |      |            |  |            |   |   |            |            |            |            |            | AC         | DC         |     |     |
| 480V                                | 500V |            |  |            |   |   |            |            |            | SFV20S122K |            | SFV25S122K | SFV34S122K | 750 | 990 |
|                                     |      |            |  |            |   |   |            |            |            | SFV20S112K |            | SFV25S112K | SFV34S112K | 680 | 895 |
| 415V                                | 500V |            |  |            |   |   |            |            | SFV20S102K |            | SFV25S102K | SFV34S102K | 625        | 825 |     |
|                                     |      |            |  |            |   |   |            |            | SFV20S911K |            | SFV25S911K | SFV34S911K | 550        | 745 |     |
| 380V                                | 500V |            |  | SFV10S821K |   |   |            |            | SFV15S821K |            | SFV20S821K | SFV34S821K | 510        | 670 |     |
|                                     |      |            |  | SFV10S751K |   |   |            |            | SFV15S751K |            | SFV20S751K | SFV34S751K | 460        | 615 |     |
| 100V                                | -    |            |  | SFV10S681K |   |   |            |            | SFV15S681K |            | SFV20S681K | SFV34S681K | 420        | 560 |     |
|                                     |      |            |  | SFV10S621K |   |   |            |            | SFV15S621K |            | SFV20S621K | SFV34S621K | 385        | 505 |     |
| 240V                                | -    |            |  | SFV10S561K |   |   |            |            | SFV15S561K |            | SFV20S561K | SFV34S561K | 350        | 460 |     |
|                                     |      |            |  | SFV10S511K |   |   |            |            | SFV15S511K |            | SFV20S511K | SFV34S511K | 320        | 415 |     |
| 100V                                | 250V |            |  | SFV10S471K |   |   |            |            | SFV15S471K |            | SFV20S471K | SFV34S471K | 300        | 385 |     |
|                                     |      |            |  | SFV10S431K |   |   |            |            | SFV15S431K |            | SFV20S431K | SFV34S431K | 275        | 350 |     |
| 220V                                | 250V |            |  | SFV10S391K |   |   |            |            | SFV15S391K |            | SFV20S391K | SFV34S391K | 250        | 320 |     |
|                                     |      |            |  | SFV10S361K |   |   |            |            | SFV15S361K |            | SFV20S361K | SFV34S361K | 230        | 300 |     |
| 100V                                | -    |            |  | SFV10S331K |   |   |            |            | SFV15S331K |            | SFV20S331K | SFV34S331K | 210        | 275 |     |
|                                     |      |            |  | SFV10S301K |   |   |            |            | SFV15S301K |            | SFV20S301K | SFV34S301K | 190        | 250 |     |
| 120V                                | -    |            |  | SFV10S271K |   |   |            |            | SFV15S271K |            | SFV20S271K | SFV34S271K | 175        | 225 |     |
|                                     |      |            |  | SFV10S241K |   |   |            |            | SFV15S241K |            | SFV20S241K | SFV34S241K | 150        | 200 |     |
| 100V                                | 125V |            |  | SFV10S221K |   |   |            |            | SFV15S221K |            | SFV20S221K | SFV34S221K | 140        | 180 |     |
|                                     |      |            |  | SFV10S201K |   |   |            |            | SFV15S201K |            | SFV20S201K | SFV34S201K | 130        | 170 |     |
| 48V                                 | -    |            |  | SFV10S181K |   |   |            |            | SFV15S181K |            | SFV20S181K | SFV34S181K | 115        | 150 |     |
|                                     |      |            |  | SFV10S151K |   |   |            |            | SFV15S151K |            | SFV20S151K | SFV34S151K | 95         | 125 |     |
| 24V                                 | -    |            | SFV10S121K                             |            |   |   |            |            | SFV15S121K |            | SFV20S121K | SFV34S121K | 75         | 100 |     |
|                                     |      |            | SFV10S101K                             |            |   |   |            |            | SFV15S101K |            | SFV20S101K | SFV34S101K | 60         | 85  |     |
| 12V                                 | -    |            | SFV10S820K                             |            |   |   |            |            | SFV15S820K |            | SFV20S820K | SFV34S820K | 50         | 65  |     |
|                                     |      | SFV10S680K | SFV15S680K                             | SFV20S680K |   |   |            |            | SFV25S680K |            | SFV34S680K |            |            | 40  | 56  |
| 12V                                 | -    | SFV10S560K | SFV15S560K                             | SFV20S560K |   |   |            |            | SFV25S560K |            | SFV34S560K |            |            | 35  | 45  |
|                                     |      | SFV10S470K | SFV15S470K                             | SFV20S470K |   |   |            | SFV25S470K |            |            | SFV34S470K |            |            | 30  | 38  |
| 12V                                 | -    | SFV10S390K | SFV15S390K<br>SFV20S390K               |            |   |   |            | SFV25S390K |            |            |            |            |            | 25  | 31  |
|                                     |      | SFV10S330K | SFV15S330K<br>SFV20S330K               |            |   |   |            |            | SFV25S330K |            |            |            |            |     | 20  |
| 12V                                 | -    | SFV10S270K | SFV15S270K<br>SFV20S270K               |            |   |   | SFV25S270K |            |            |            |            |            |            | 17  | 22  |
|                                     |      | SFV10S220K | SFV15S220K<br>SFV20S220K<br>SFV25S220K |            |   |   |            |            |            |            |            |            |            |     | 14  |
| AC                                  | DC   | 2          | 3                                      | 5          | 6 | 8 | 10         | 15         | 20         | 25         | 40         | AC         | DC         |     |     |

Model  
Maximum Continuous Operating Voltage  $U_n$  (V)

Maximum Peak Current (8/20  $\mu$ s) (kA)