

Description

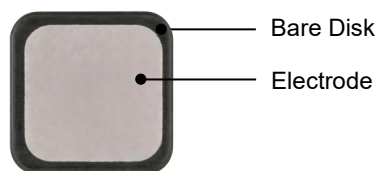


Metal Oxide Varistor (MOV) is a nonlinear resistance component with zinc oxide (ZnO) as its main constituent. The resistance of an MOV is sensitive to changes in the applied voltage. Below the threshold voltage, the MOV exhibits high resistance, allowing only a negligibly small leakage current to flow. 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 15 kA to 40 kA, and maximum continuous voltage ratings from 50VAC to 750 VAC. Safety certification includes UL, cUL, and complies with RoHS and REACH requirements.

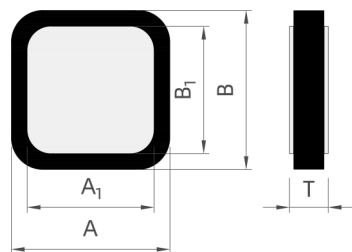
Product Structure



Agency Approvals



| Agency | Standards | No. |
|--------|---------------------------------|---------|
| | UL 1449 4 th Edition | E322662 |
| | CSA C22.2 NO.269.5-17 | E322662 |

Dimensions



| Series | Symbol | Dimensions (mm) |
|--------|----------------|-------------------|
| YMJ20S | A | 19.0 - 19.7 |
| | B | |
| | A ₁ | 16.0 ± 0.6 |
| | B ₁ | |
| | T | See Specification |

Specification

| Model | Max. Continuous Operating Voltage | | Varistor Voltage @1 mA DC | | Clamping Voltage (Max.) | | Max. Discharge Current (8/20 μs) | | Max. Energy (10/1000 μs) | Typical Capacitance (For reference only) @1 kHz | T | Agency Information | |
|------------|-----------------------------------|------|---------------------------|------|-------------------------|----------------|----------------------------------|------------------|--------------------------|---|-----------|---|---|
| | VAC | VDC | Min. | Max. | V _c | I _p | I _n | I _{max} | (J) | (pF) | (mm) |  |  |
| | (V) | (V) | (V) | (V) | (V) | (A) | (kA) | (kA) | | | | | |
| YMJ20S820K | 50 | 65 | 74 | 90 | 135 | 125 | 8 | 15 | 67 | 5880 | 0.7 - 1.0 | ● | ● |
| YMJ20S101K | 60 | 85 | 90 | 110 | 165 | 125 | 8 | 15 | 84 | 4800 | 0.8 - 1.2 | ● | ● |
| YMJ20S121K | 75 | 100 | 108 | 132 | 200 | 125 | 8 | 15 | 102 | 4000 | 1.0 - 1.4 | ● | ● |
| YMJ20S151K | 95 | 125 | 135 | 165 | 250 | 125 | 8 | 15 | 127 | 3200 | 1.2 - 1.8 | ● | ● |
| YMJ20S181K | 115 | 150 | 162 | 198 | 300 | 125 | 8 | 15 | 156 | 2650 | 0.9 - 1.2 | ● | ● |
| YMJ20S201K | 130 | 170 | 180 | 220 | 340 | 125 | 8 | 15 | 170 | 2400 | 1.0 - 1.3 | ● | ● |
| YMJ20S221K | 140 | 180 | 198 | 242 | 360 | 125 | 8 | 15 | 185 | 2160 | 1.1 - 1.4 | ● | ● |
| YMJ20S241K | 150 | 200 | 216 | 264 | 395 | 125 | 8 | 15 | 200 | 2000 | 1.2 - 1.6 | ● | ● |
| YMJ20S271K | 175 | 225 | 243 | 297 | 455 | 125 | 8 | 15 | 230 | 1800 | 1.4 - 1.7 | ● | ● |
| YMJ20S301K | 190 | 250 | 270 | 330 | 500 | 125 | 8 | 15 | 250 | 1560 | 1.5 - 1.9 | ● | ● |
| YMJ20S331K | 210 | 275 | 297 | 363 | 550 | 125 | 8 | 15 | 270 | 1440 | 1.7 - 2.1 | ● | ● |
| YMJ20S361K | 230 | 300 | 324 | 396 | 595 | 125 | 8 | 15 | 305 | 1320 | 1.8 - 2.3 | ● | ● |
| YMJ20S391K | 250 | 320 | 351 | 429 | 650 | 125 | 8 | 15 | 330 | 1200 | 2.0 - 2.5 | ● | ● |
| YMJ20S431K | 275 | 350 | 387 | 473 | 710 | 125 | 8 | 15 | 365 | 1160 | 2.2 - 2.7 | ● | ● |
| YMJ20S471K | 300 | 385 | 423 | 517 | 775 | 125 | 8 | 15 | 420 | 1020 | 2.4 - 3.0 | ● | ● |
| YMJ20S511K | 320 | 415 | 459 | 561 | 845 | 125 | 8 | 15 | 430 | 935 | 2.6 - 3.2 | ● | ● |
| YMJ20S561K | 350 | 460 | 504 | 616 | 925 | 125 | 8 | 15 | 455 | 850 | 2.9 - 3.5 | ● | ● |
| YMJ20S621K | 385 | 505 | 558 | 682 | 1025 | 125 | 8 | 15 | 465 | 780 | 3.2 - 3.9 | ● | ● |
| YMJ20S681K | 420 | 560 | 612 | 748 | 1120 | 125 | 8 | 15 | 480 | 720 | 3.5 - 4.3 | ● | ● |
| YMJ20S751K | 460 | 615 | 675 | 825 | 1240 | 125 | 8 | 15 | 500 | 635 | 3.9 - 4.7 | ● | ● |
| YMJ20S821K | 510 | 670 | 738 | 902 | 1355 | 125 | 8 | 15 | 520 | 600 | 4.3 - 5.2 | ● | ● |
| YMJ20S911K | 550 | 745 | 819 | 1001 | 1500 | 125 | 8 | 15 | 550 | 525 | 4.7 - 5.7 | ● | ● |
| YMJ20S102K | 625 | 825 | 900 | 1100 | 1650 | 125 | 8 | 15 | 610 | 480 | 5.2 - 6.3 | ● | ● |
| YMJ20S112K | 680 | 895 | 990 | 1210 | 1815 | 125 | 8 | 15 | 675 | 430 | 5.7 - 6.9 | ● | ● |
| YMJ20S122K | 750 | 1000 | 1080 | 1320 | 1980 | 125 | 8 | 15 | 740 | 380 | 6.3 - 7.5 | ● | ● |

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

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 | | |
| | | | | | | | | 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 | | |
| 24V | 12V | | | | | | | SFV10D201K(T) | SFV14D201K(T) | SFV20D201K(T) | SFV25D201K(T) | SFV53D201K | 130 | 170 | | |
| | | | | | | | | SFV10D181K(T) | SFV14D181K(T) | SFV20D181K(T) | SFV25D181K(T) | SFV53D181K | 115 | 150 | | |
| 12V | 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 | | |
| | | ○ | ○ | SFV25D560KM | ○ | ○ | 35 | 45 | | |
| 12V | 12V | ○ | ○ | SFV25D470KM | ○ | ○ | 30 | 38 | | |
| | | ○ | ○ | ○ | ○ | ○ | 25 | 31 | | |
| | | ○ | ○ | ○ | ○ | ○ | 20 | 26 | | |
| AC | DC | ○ | ○ | ○ | ○ | ○ | 17 | 22 | | |
| | | ○ | ○ | ○ | ○ | ○ | 14 | 18 | | |

Maximum Peak Current (8/20 μ s) (kA)

Metal Oxide Varistor (MOV) Feature & Model List Overview

| Nominal Operating Voltage U_n (V) | | Model | | | | | | | | | | | Page | |
|-------------------------------------|------|--|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------|-----|
| | | Maximum Continuous Operating Voltage U_n (V) | | | | | | | | | | | 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 | ○ | SFV25S821K | SFV34S821K | 510 | 670 |
| | | ○ | ○ | SFV10S751K | ○ | ○ | SFV15S751K | ○ | SFV20S751K | ○ | SFV25S751K | SFV34S751K | 460 | 615 |
| 100V | 240V | ○ | ○ | SFV10S681K | ○ | ○ | SFV15S681K | SFV20S681K | ○ | SFV25S681K | SFV34S681K | 420 | 560 | |
| | | ○ | ○ | SFV10S621K | ○ | ○ | SFV15S621K | SFV20S621K | ○ | SFV25S621K | SFV34S621K | 385 | 505 | |
| 100V | 240V | ○ | ○ | SFV10S561K | ○ | ○ | SFV15S561K | SFV20S561K | ○ | SFV25S561K | SFV34S561K | 350 | 460 | |
| | | ○ | ○ | SFV10S511K | ○ | ○ | SFV15S511K | SFV20S511K | ○ | SFV25S511K | SFV34S511K | 320 | 415 | |
| 100V | 220V | ○ | ○ | SFV10S471K | ○ | ○ | SFV15S471K | SFV20S471K | ○ | SFV25S471K | SFV34S471K | 300 | 385 | |
| | | ○ | ○ | SFV10S431K | ○ | ○ | SFV15S431K | SFV20S431K | ○ | SFV25S431K | SFV34S431K | 275 | 350 | |
| 100V | 250V | ○ | ○ | SFV10S391K | ○ | ○ | SFV15S391K | SFV20S391K | ○ | SFV25S391K | SFV34S391K | 250 | 320 | |
| | | ○ | ○ | SFV10S361K | ○ | ○ | SFV15S361K | SFV20S361K | ○ | SFV25S361K | SFV34S361K | 230 | 300 | |
| 120V | 250V | ○ | ○ | SFV10S331K | ○ | ○ | SFV15S331K | SFV20S331K | ○ | SFV25S331K | SFV34S331K | 210 | 275 | |
| | | ○ | ○ | SFV10S301K | ○ | ○ | SFV15S301K | SFV20S301K | ○ | SFV25S301K | SFV34S301K | 190 | 250 | |
| 125V | 125V | ○ | ○ | SFV10S271K | ○ | ○ | SFV15S271K | SFV20S271K | ○ | SFV25S271K | SFV34S271K | 175 | 225 | |
| | | ○ | ○ | SFV10S241K | ○ | ○ | SFV15S241K | SFV20S241K | ○ | SFV25S241K | SFV34S241K | 150 | 200 | |
| 100V | 100V | ○ | ○ | SFV10S221K | ○ | ○ | SFV15S221K | SFV20S221K | ○ | SFV25S221K | SFV34S221K | 140 | 180 | |
| | | ○ | ○ | SFV10S201K | ○ | ○ | SFV15S201K | SFV20S201K | ○ | SFV25S201K | SFV34S201K | 130 | 170 | |
| 48V | 48V | ○ | ○ | SFV10S181K | ○ | ○ | SFV15S181K | SFV20S181K | ○ | SFV25S181K | SFV34S181K | 115 | 150 | |
| | | ○ | ○ | SFV10S151K | ○ | ○ | SFV15S151K | SFV20S151K | ○ | SFV25S151K | SFV34S151K | 95 | 125 | |
| 24V | 24V | ○ | SFV10S121K | ○ | ○ | ○ | SFV15S121K | SFV20S121K | ○ | SFV25S121K | SFV34S121K | 75 | 100 | |
| | | ○ | SFV10S101K | ○ | ○ | ○ | SFV15S101K | SFV20S101K | ○ | SFV25S101K | SFV34S101K | 60 | 85 | |
| 12V | 12V | ○ | SFV10S820K | ○ | ○ | ○ | SFV15S820K | SFV20S820K | ○ | SFV25S820K | SFV34S820K | 50 | 65 | |
| | | SFV10S680K | SFV15S680K | SFV20S680K | ○ | ○ | SFV25S680K | ○ | SFV34S680K | ○ | ○ | 40 | 56 | |
| 12V | 12V | SFV10S560K | SFV15S560K | SFV20S560K | ○ | ○ | SFV25S560K | ○ | SFV34S560K | ○ | ○ | 35 | 45 | |
| | | SFV10S470K | SFV15S470K | SFV20S470K | ○ | SFV25S470K | ○ | SFV34S470K | ○ | ○ | ○ | 30 | 38 | |
| 12V | 12V | SFV10S390K | SFV15S390K SFV20S390K | ○ | ○ | SFV25S390K | ○ | ○ | ○ | ○ | ○ | 25 | 31 | |
| | | SFV10S330K | SFV15S330K SFV20S330K | ○ | ○ | SFV25S330K | ○ | ○ | ○ | ○ | ○ | 20 | 26 | |
| 12V | 12V | SFV10S270K | SFV15S270K SFV20S270K | ○ | SFV25S270K | ○ | ○ | ○ | ○ | ○ | ○ | 17 | 22 | |
| | | SFV10S220K | SFV15S220K SFV20S220K SFV25S220K | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 14 | 18 | |