



Features

- High voltage rating
- High current rating
- Bidirectional
- Surge protection
- Fast response time
- RoHS compliant*
- Agency listing: US

Applications

- Power supplies
- Power systems
- Line voltage
- Telecom systems
- White goods / appliances

MOV-14DxxxK Series - Metal Oxide Varistor

General Information

The MOV-14DxxxK Series of 14 mm radial leaded varistor devices protects against overvoltage transients such as lightning, power contact and power induction. The metal oxide varistors offer a choice of varistor voltages from 18 V to 1800 V and V_{rms} voltages from 11 V to 1100 V.

The devices have a high current handling, high energy absorption capability and fast response times to protect against transient faults up to rated limits.



Industry Standard Compliance

| Standard | UL 1449 |
|-------------|---------|
| File Number | E313168 |

Absolute Maximum Ratings (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|--|-----------|------|------|------|----------------------|
| Operating Temperature | TOPR | -40 | 25 | +105 | $^\circ\text{C}$ |
| Storage Temperature | TSTG | -40 | 25 | +125 | $^\circ\text{C}$ |
| Rated Wattage | P_w | | | 0.60 | Watt |
| Varistor Voltage Temperature Coefficient | VTC | 0 | 0.1 | 0.05 | % / $^\circ\text{C}$ |
| Response Time | T_r | | 10 | 25 | ns |
| Varistor Voltage Tolerance | V_{tol} | -10 | 0 | 10 | % |

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

| Bourns Part No. | Max. Continuous Voltage (V) | | Voltage @ 1 mA DC (V) | | | Voltage @ Class Current (8/20 μs) | | Max. Peak Current (8/20 μs) | Max. Energy (J) | Typ. Cap. (pF) |
|-----------------|-----------------------------|------|-----------------------|------|------|---|---------------------------|---|--------------------|----------------|
| | r.m.s. | d.c. | Min. | Nom. | Max. | Class Current (A) | Max. Clamping Voltage (V) | One Time | 8/20 μs | 1 kHz |
| | | | | | | | | | | |
| MOV-14D180K | 11 | 14 | 16 | 18 | 20 | 10 | 36 | 1000 | 4.0 | 14400 |
| MOV-14D220K | 14 | 18 | 20 | 22 | 24 | 10 | 43 | 1000 | 5.0 | 12000 |
| MOV-14D270K | 17 | 22 | 24 | 27 | 30 | 10 | 53 | 1000 | 6.0 | 9840 |
| MOV-14D330K | 20 | 26 | 30 | 33 | 36 | 10 | 65 | 1000 | 7.5 | 8640 |
| MOV-14D390K | 25 | 31 | 35 | 39 | 43 | 10 | 77 | 1000 | 8.6 | 7680 |
| MOV-14D470K | 30 | 38 | 42 | 47 | 52 | 10 | 93 | 1000 | 10.0 | 7200 |
| MOV-14D560K | 35 | 45 | 50 | 56 | 62 | 10 | 110 | 1000 | 11.0 | 6960 |
| MOV-14D680K | 40 | 56 | 61 | 68 | 75 | 10 | 135 | 1000 | 14.0 | 6240 |
| MOV-14D820K | 50 | 65 | 74 | 82 | 90 | 50 | 135 | 4500 | 22.0 | 3000 |
| MOV-14D101K | 60 | 85 | 90 | 100 | 110 | 50 | 165 | 4500 | 28.0 | 2400 |
| MOV-14D121K | 75 | 100 | 108 | 120 | 132 | 50 | 200 | 4500 | 32.0 | 2040 |
| MOV-14D151K | 95 | 125 | 135 | 150 | 165 | 50 | 250 | 4500 | 40.0 | 1560 |
| MOV-14D181K | 115 | 150 | 162 | 180 | 198 | 50 | 300 | 4500 | 50.0 | 1320 |
| MOV-14D201K | 130 | 170 | 185 | 200 | 225 | 50 | 340 | 4500 | 57.0 | 1200 |
| MOV-14D221K | 140 | 180 | 198 | 220 | 242 | 50 | 360 | 4500 | 60.0 | 1080 |
| MOV-14D241K | 150 | 200 | 216 | 240 | 264 | 50 | 395 | 4500 | 63.0 | 996 |
| MOV-14D271K | 175 | 225 | 243 | 270 | 297 | 50 | 455 | 4500 | 70.0 | 888 |
| MOV-14D301K | 190 | 250 | 270 | 300 | 330 | 50 | 500 | 4500 | 77.0 | 804 |
| MOV-14D331K | 210 | 275 | 297 | 330 | 363 | 50 | 550 | 4500 | 85.0 | 732 |
| MOV-14D361K | 230 | 300 | 324 | 360 | 396 | 50 | 595 | 4500 | 93.0 | 672 |
| MOV-14D391K | 250 | 320 | 351 | 390 | 429 | 50 | 650 | 4500 | 100.0 | 612 |
| MOV-14D431K | 275 | 350 | 387 | 430 | 473 | 50 | 710 | 4500 | 115.0 | 552 |
| MOV-14D471K | 300 | 385 | 423 | 470 | 517 | 50 | 775 | 4500 | 125.0 | 516 |
| MOV-14D511K | 320 | 415 | 459 | 510 | 561 | 50 | 845 | 4500 | 125.0 | 468 |
| MOV-14D561K | 350 | 460 | 504 | 560 | 616 | 50 | 925 | 4500 | 125.0 | 432 |
| MOV-14D621K | 385 | 505 | 558 | 620 | 682 | 50 | 1025 | 4500 | 125.0 | 384 |
| MOV-14D681K | 420 | 560 | 612 | 680 | 748 | 50 | 1120 | 4500 | 130.0 | 360 |
| MOV-14D751K | 460 | 615 | 675 | 750 | 825 | 50 | 1240 | 4500 | 143.0 | 324 |
| MOV-14D781K | 485 | 640 | 702 | 780 | 858 | 50 | 1290 | 4500 | 148.0 | 312 |
| MOV-14D821K | 510 | 670 | 738 | 820 | 902 | 50 | 1355 | 4500 | 157.0 | 300 |
| MOV-14D911K | 550 | 745 | 819 | 910 | 1001 | 50 | 1500 | 4500 | 175.0 | 288 |
| MOV-14D102K | 625 | 825 | 900 | 1000 | 1100 | 50 | 1650 | 4500 | 190.0 | 264 |
| MOV-14D112K | 680 | 895 | 990 | 1100 | 1210 | 50 | 1815 | 4500 | 213.0 | 240 |
| MOV-14D152K | 940 | 1200 | 1350 | 1500 | 1650 | 50 | 2475 | 4500 | 329.0 | 180 |
| MOV-14D182K | 1100 | 1465 | 1620 | 1800 | 1980 | 50 | 2970 | 4500 | 335.0 | 156 |



WARNING Cancer and Reproductive Harm
www.P65Warnings.ca.gov

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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MOV-14DxxxK Series - Metal Oxide Varistor



Product Dimensions

This is an RoHS compliant molded radial package with 100 % Sn plating on the terminations.



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

How to Order

MOV - 14D nn (n) K (TR)



Examples: MOV-14D270K = 27 V, Bulk Pack
MOV-14D331KTR = 330 V, Tape & Reel

* Models MOV-14D911K, 102K, 112K, 152K and 182K are not available in Tape & Reel packaging.

| Part Number | Dim. H (Max.) | Dim. T (Max.) |
|-------------|---------------|---------------|
| MOV-14D180K | 20.0 (.787) | 3.8 (.150) |
| MOV-14D220K | 20.0 (.787) | 3.9 (.154) |
| MOV-14D270K | 20.0 (.787) | 4.2 (.165) |
| MOV-14D330K | 20.0 (.787) | 3.8 (.150) |
| MOV-14D390K | 20.0 (.787) | 4.0 (.157) |
| MOV-14D470K | 20.0 (.787) | 4.2 (.165) |
| MOV-14D560K | 20.0 (.787) | 4.3 (.169) |
| MOV-14D680K | 20.0 (.787) | 4.4 (.173) |
| MOV-14D820K | 20.0 (.787) | 3.8 (.150) |
| MOV-14D101K | 20.0 (.787) | 4.0 (.157) |
| MOV-14D121K | 20.0 (.787) | 4.2 (.165) |
| MOV-14D151K | 20.0 (.787) | 4.4 (.173) |
| MOV-14D181K | 20.0 (.787) | 3.6 (.142) |
| MOV-14D201K | 20.0 (.787) | 3.8 (.150) |
| MOV-14D221K | 20.0 (.787) | 3.9 (.154) |
| MOV-14D241K | 20.0 (.787) | 4.0 (.157) |
| MOV-14D271K | 20.0 (.787) | 4.2 (.165) |
| MOV-14D301K | 20.0 (.787) | 4.4 (.173) |

| Part Number | Dim. H (Max.) | Dim. T (Max.) |
|--------------|---------------|---------------|
| MOV-14D331K | 20.0 (.787) | 4.6 (.181) |
| MOV-14D361K | 20.0 (.787) | 4.8 (.189) |
| MOV-14D391K | 20.0 (.787) | 5.0 (.197) |
| MOV-14D431K | 20.0 (.787) | 5.2 (.205) |
| MOV-14D471K | 20.0 (.787) | 5.4 (.213) |
| MOV-14D511K | 20.0 (.787) | 5.5 (.217) |
| MOV-14D561K | 22.0 (.866) | 6.0 (.236) |
| MOV-14D621K | 22.0 (.866) | 6.4 (.252) |
| MOV-14D681K | 22.0 (.866) | 6.5 (.256) |
| MOV-14D751K | 22.0 (.866) | 6.7 (.264) |
| MOV-14D781K | 22.0 (.866) | 6.9 (.272) |
| MOV-14D821K | 22.0 (.866) | 7.3 (.287) |
| MOV-14D911K* | 22.0 (.866) | 7.7 (.303) |
| MOV-14D102K* | 22.0 (.866) | 8.2 (.323) |
| MOV-14D112K* | 22.0 (.866) | 8.7 (.343) |
| MOV-14D152K* | 22.0 (.866) | 9.7 (.382) |
| MOV-14D182K* | 22.0 (.866) | 11.7 (.461) |

* Not available in Tape & Reel packaging.

Internal Construction



Environmental Specifications

Moisture Sensitivity Level 1
ESD Classification (HBM)..... 6

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MOV-14DxxxK Series - Metal Oxide Varistor

BOURNS®

Performance Graphs

V-I Characteristics

MOV-14D180K to MOV-14D680K



MOV-14D820K to MOV-14D431K



MOV-14D471K to MOV-14D182K



Typical Part Marking

| Bourns Part Number | Bourns Part Marking |
|--------------------|---------------------|
| MOV-14D180K | 14D180K |
| MOV-14D220K | 14D220K |
| MOV-14D270K | 14D270K |
| MOV-14D330K | 14D330K |
| MOV-14D390K | 14D390K |
| MOV-14D470K | 14D470K |
| MOV-14D560K | 14D560K |
| MOV-14D680K | 14D680K |
| MOV-14D820K | 14D820K |
| MOV-14D101K | 14D101K |
| MOV-14D121K | 14D121K |
| MOV-14D151K | 14D151K |
| MOV-14D181K | 14D181K |
| MOV-14D201K | 14D201K |
| MOV-14D221K | 14D221K |
| MOV-14D241K | 14D241K |
| MOV-14D271K | 14D271K |
| MOV-14D301K | 14D301K |
| MOV-14D331K | 14D331K |
| MOV-14D361K | 14D361K |
| MOV-14D391K | 14D391K |
| MOV-14D431K | 14D431K |
| MOV-14D471K | 14D471K |
| MOV-14D511K | 14D511K |
| MOV-14D561K | 14D561K |
| MOV-14D621K | 14D621K |
| MOV-14D681K | 14D681K |
| MOV-14D751K | 14D751K |
| MOV-14D781K | 14D781K |
| MOV-14D821K | 14D821K |
| MOV-14D911K | 14D911K |
| MOV-14D102K | 14D102K |
| MOV-14D112K | 14D112K |
| MOV-14D152K | 14D152K |
| MOV-14D182K | 14D182K |

NOTE: The "5" marking on MOV products is for traceability of production assembly for quality assurance compliance.

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MOV-14DxxxK Series - Metal Oxide Varistor

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Packaging Information

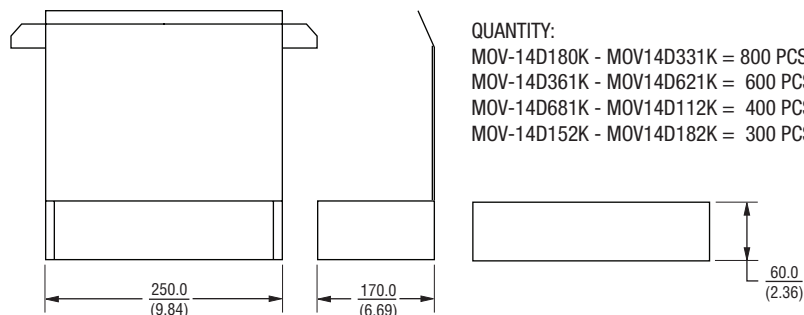
TAPE & REEL



NOTE: Models MOV-14D911K, 102K, 112K, 152K and 182K are not available in Tape & Reel packaging.

| Item | Symbol | 14 mm Disc |
|--------------------------------------|--------|--|
| Reel Outside Diameter | RD | $\frac{355}{(13.98)}$ |
| Reel Inner Diameter | RD1 | $\frac{30}{(11.81)}$ |
| Tape Width | RW | $\frac{55}{(2.165)}$ |
| Reel Width | RW1 | $\frac{63}{(2.48)}$ |
| Pitch of Component | P | $\frac{25.4 \pm 1.0}{(1.00 \pm 0.04)}$ |
| Feed Hole Pitch | P0 | $\frac{12.7 \pm 1.0}{(0.50 \pm 0.04)}$ |
| Feed Hole Center to Pitch | P1 | $\frac{8.95 \pm 0.7}{(0.352 \pm 0.3)}$ |
| Feed Hole Center to Component Center | P2 | $\frac{12.7 \pm 1.0}{(0.50 \pm 0.04)}$ |
| Lead to Lead Distance | F | $\frac{7.50 \pm 0.8}{(0.30 \pm 0.03)}$ |
| Component Alignment | Δh | $\frac{4.0}{(0.157)}$ max. |
| Tape Width | W | $\frac{18.0 \pm 0.5}{(0.71 \pm 0.02)}$ |
| Hole Down Tape Width | W0 | $\frac{12.0 \pm 0.8}{(0.47 \pm 0.03)}$ |
| Hole Position | W1 | $\frac{9.0 \pm 0.5}{(0.35 \pm 0.02)}$ |
| Hole Down Tape Position | W2 | $\frac{3.0}{(0.12)}$ max. |
| Height From Center to Component Base | H | $\frac{19.0 \pm 1.0}{(0.75 \pm 0.04)}$ |
| Seating Plane Height | H0 | $\frac{16.0 \pm 0.5}{(0.63 \pm 0.02)}$ |
| Component Height | H1 | $\frac{40.0}{(1.57)}$ max. |
| Crimp Length | C | $\frac{2.60}{(0.10)}$ typ. |
| Feed Hole Diameter | D0 | $\frac{4.0 \pm 0.2}{(0.16 \pm 0.08)}$ |
| Total Tape Thickness | t | $\frac{0.6 \pm 0.3}{(0.02 \pm 0.01)}$ |
| Length of Clipped Height | L | $\frac{1.0}{(0.04)}$ max. |
| Quantity per Reel | - | 500 |
| MOV-14D180K - 14D331K | - | 400 |
| MOV-14D361K - 14D821K | - | |

BULK



QUANTITY:

MOV-14D180K - MOV14D331K = 800 PCS. PER BOX
 MOV-14D361K - MOV14D621K = 600 PCS. PER BOX
 MOV-14D681K - MOV14D112K = 400 PCS. PER BOX
 MOV-14D152K - MOV14D182K = 300 PCS. PER BOX

REV. 08/17

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JONHON

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