

# DATA SHEET

## METAL OXIDE VARISTORS POWER SUPPLY

32D series

RoHS compliant & Halogen free



Product specification— October 06, 2020 V.1



## Metal Oxide Varistor (MOV) Data Sheet

### Features

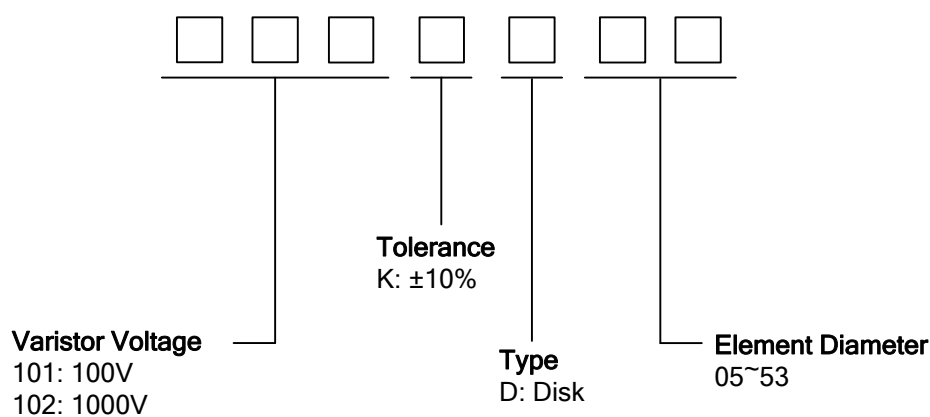
- Wide operating voltage ( $V_{1mA}$ ) range from 100V to 1600V
- Fast responding to transient over-voltage
- Large absorbing transient energy capability
- Low clamping ratio and no follow-on current
- Meets MSL level 1, per J-STD-020
- Operating Temperature:  $-40^{\circ}\text{C} \sim +105^{\circ}\text{C}$
- Storage Temperature:  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$
- Safety certification: UL: E327997  
CSA: 246579



### Applications

- Transistor, diode, IC, thyristor or triac semiconductor protection
- Surge protection in consumer electronics
- Surge protection in industrial electronics
- Surge protection in electronic home appliances, gas and petroleum appliances
- Relay and electromagnetic valve surge absorption

### Part number code



## Dimensions

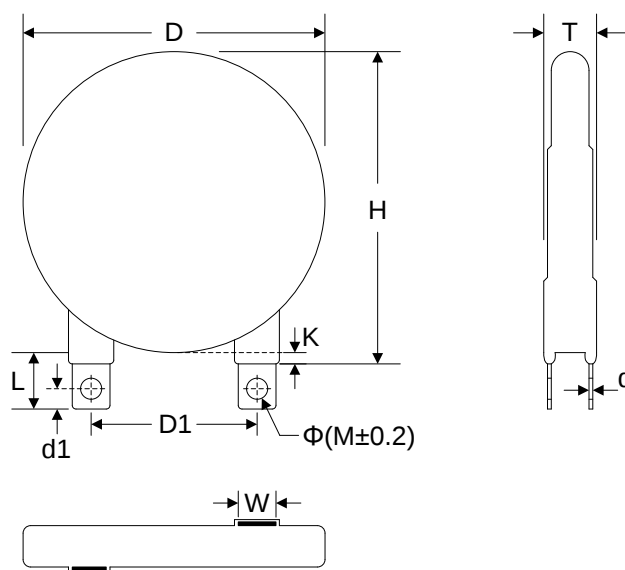


TABLE 1

Unit: mm

| Symbol            | Dimension |
|-------------------|-----------|
| H(max.)           | 40.0      |
| L(min.)           | 14.5      |
| D(max.)           | 36.0      |
| D1( $\pm 1.0$ )   | 25.4      |
| T(max.)           | TABLE 2   |
| d( $\pm 0.25$ )   | 0.5       |
| d1( $\pm 0.3$ )   | 3.7       |
| K(max.)           | 3.2       |
| W( $\pm 0.5$ )    | 7.0       |
| $\Phi M(\pm 0.2)$ | 3.2       |

TABLE 2

Unit: mm

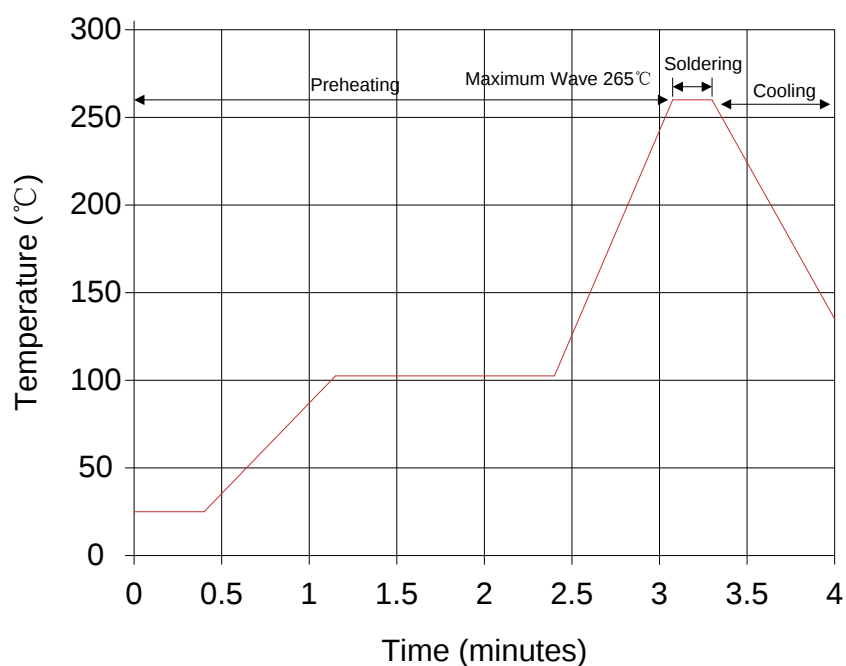
| Model | T(max.) | Model | T(max.) |
|-------|---------|-------|---------|
| 101K  | 5.8     | 511K  | 8.0     |
| 121K  | 6.0     | 561K  | 8.5     |
| 151K  | 6.3     | 621K  | 8.7     |
| 181K  | 6.1     | 681K  | 9.0     |
| 201K  | 6.2     | 751K  | 9.4     |
| 221K  | 6.3     | 781K  | 9.6     |
| 241K  | 6.4     | 821K  | 9.8     |
| 271K  | 6.6     | 911K  | 10.4    |
| 301K  | 6.8     | 951K  | 10.6    |
| 331K  | 6.9     | 102K  | 11.2    |
| 361K  | 7.1     | 112K  | 11.8    |
| 391K  | 7.3     | 122K  | 12.3    |
| 431K  | 7.5     | 142K  | 13.3    |
| 471K  | 7.8     | 162K  | 14.3    |

## Electrical characteristics

| Part Number | Maximum Allowable Voltage |                     | Varistor Voltage     | Maximum Clamping Voltage |                    | Withstandin<br>g Surge Current | Maximum Energy<br>(10/1000μs<br>) | Typical Capacitanc<br>e<br>(Reference) |
|-------------|---------------------------|---------------------|----------------------|--------------------------|--------------------|--------------------------------|-----------------------------------|----------------------------------------|
|             | V <sub>AC</sub> (V)       | V <sub>DC</sub> (V) | V <sub>1mA</sub> (V) | I <sub>P</sub> (A)       | V <sub>C</sub> (V) | I (A)                          | (J)                               | @1KHz (pf)                             |
| 101KD32     | 60                        | 85                  | 100(90~110)          | 200                      | 165                | 25000                          | 170                               | 6100                                   |
| 121KD32     | 75                        | 100                 | 120(108~132)         | 200                      | 200                | 25000                          | 200                               | 5600                                   |
| 151KD32     | 95                        | 125                 | 150(135~165)         | 200                      | 250                | 25000                          | 225                               | 5400                                   |
| 181KD32     | 115                       | 150                 | 180(162~198)         | 200                      | 300                | 25000                          | 240                               | 5350                                   |
| 201KD32     | 130                       | 170                 | 200(180~220)         | 200                      | 340                | 25000                          | 250                               | 5200                                   |
| 221KD32     | 140                       | 180                 | 220(198~242)         | 200                      | 360                | 25000                          | 270                               | 5150                                   |
| 241KD32     | 150                       | 200                 | 240(216~264)         | 200                      | 395                | 25000                          | 290                               | 5100                                   |
| 271KD32     | 175                       | 225                 | 270(243~297)         | 200                      | 455                | 25000                          | 300                               | 4800                                   |
| 301KD32     | 190                       | 250                 | 300(270~330)         | 200                      | 500                | 25000                          | 330                               | 4550                                   |
| 331KD32     | 210                       | 275                 | 330(297~363)         | 200                      | 550                | 25000                          | 360                               | 4300                                   |
| 361KD32     | 230                       | 300                 | 360(324~396)         | 200                      | 595                | 25000                          | 380                               | 3900                                   |
| 391KD32     | 250                       | 320                 | 390(351~429)         | 200                      | 650                | 25000                          | 400                               | 3200                                   |
| 431KD32     | 275                       | 350                 | 430(387~473)         | 200                      | 710                | 25000                          | 430                               | 3100                                   |
| 471KD32     | 300                       | 385                 | 470(423~517)         | 200                      | 775                | 25000                          | 460                               | 2800                                   |
| 511KD32     | 320                       | 415                 | 510(459~561)         | 200                      | 845                | 25000                          | 510                               | 2700                                   |
| 561KD32     | 350                       | 460                 | 560(504~616)         | 200                      | 925                | 25000                          | 540                               | 2550                                   |
| 621KD32     | 385                       | 505                 | 620(558~682)         | 200                      | 1025               | 25000                          | 570                               | 2400                                   |
| 681KD32     | 420                       | 560                 | 680(612~748)         | 200                      | 1120               | 25000                          | 600                               | 2200                                   |
| 751KD32     | 460                       | 615                 | 750(675~825)         | 200                      | 1240               | 25000                          | 620                               | 2000                                   |
| 781KD32     | 485                       | 640                 | 780(702~858)         | 200                      | 1290               | 25000                          | 660                               | 1900                                   |
| 821KD32     | 510                       | 670                 | 820(738~902)         | 200                      | 1355               | 25000                          | 700                               | 1800                                   |
| 911KD32     | 550                       | 745                 | 910(819~1001)        | 200                      | 1500               | 25000                          | 750                               | 1300                                   |
| 951KD32     | 575                       | 765                 | 950(855~1045)        | 200                      | 1570               | 25000                          | 780                               | 1200                                   |
| 102KD32     | 625                       | 825                 | 1000(900~1100)       | 200                      | 1650               | 25000                          | 810                               | 1100                                   |
| 112KD32     | 680                       | 895                 | 1100(990~1210)       | 200                      | 1815               | 25000                          | 910                               | 1000                                   |
| 122KD32     | 750                       | 990                 | 1200(1080~1320)      | 200                      | 1980               | 25000                          | 960                               | 920                                    |
| 142KD32     | 880                       | 1140                | 1400(1260~1540)      | 200                      | 2310               | 25000                          | 1020                              | 800                                    |
| 162KD32     | 1000                      | 1280                | 1600(1440~1760)      | 200                      | 2640               | 25000                          | 1080                              | 700                                    |

## Soldering Recommendation

### Lead-free Wave Soldering Recommendation

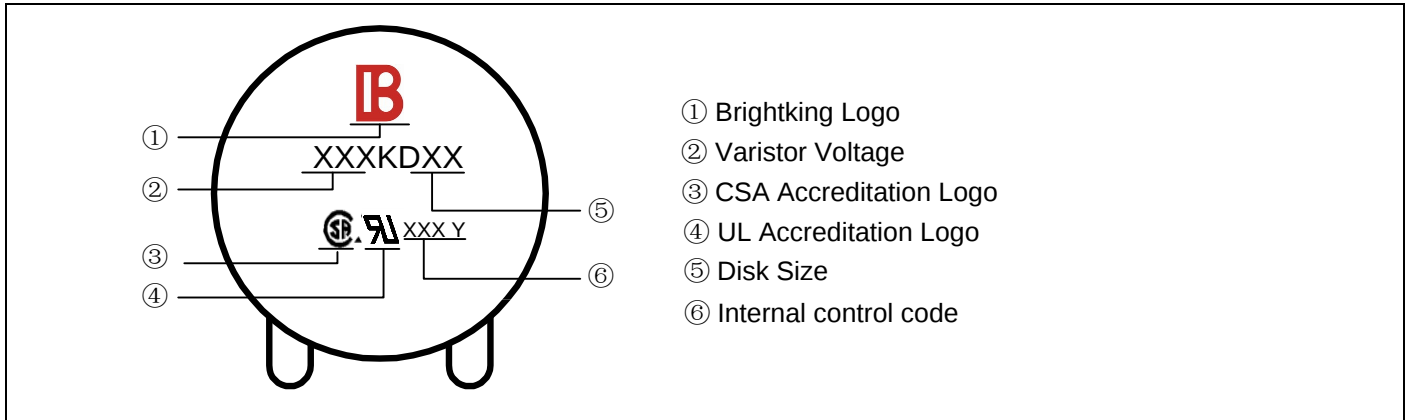


| Item             | Conditions        |
|------------------|-------------------|
| Peak Temperature | 265°C             |
| Dipping Time     | 10 seconds (max.) |
| Soldering        | 1 time            |

### Recommendation Reworking Conditions with Soldering Iron

| Item                              | Conditions       |
|-----------------------------------|------------------|
| Temperature of Soldering Iron-tip | 360°C (max.)     |
| Soldering Time                    | 3 seconds (max.) |
| Distance from Varistor            | 2mm (min.)       |

Marking code



Quantity

| Packaging Dimensions (Unit: mm) | Quantity                 |
|---------------------------------|--------------------------|
| <div>Bulk</div> <div></div>     | 60pcs/box<br>(101K~511K) |
|                                 | 32pcs/box<br>(561K~162K) |

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