



**THE DATASHEET OF  
391KD20J**



# DATA SHEET

## METAL OXIDE VARISTORS POWER SUPPLY

20D series

RoHS compliant & Halogen free



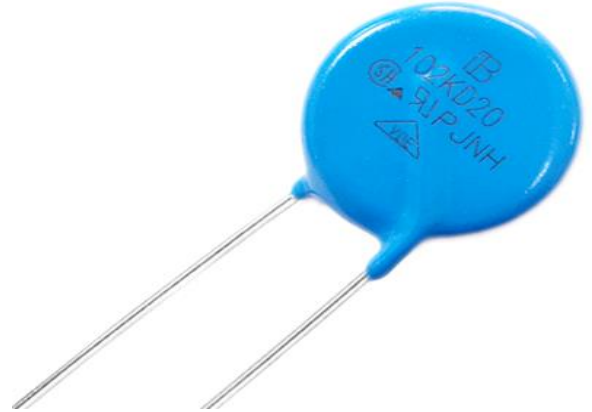
Product specification— April 11, 2022 V.2



## Metal Oxide Varistor (MOV) Data Sheet

### Features

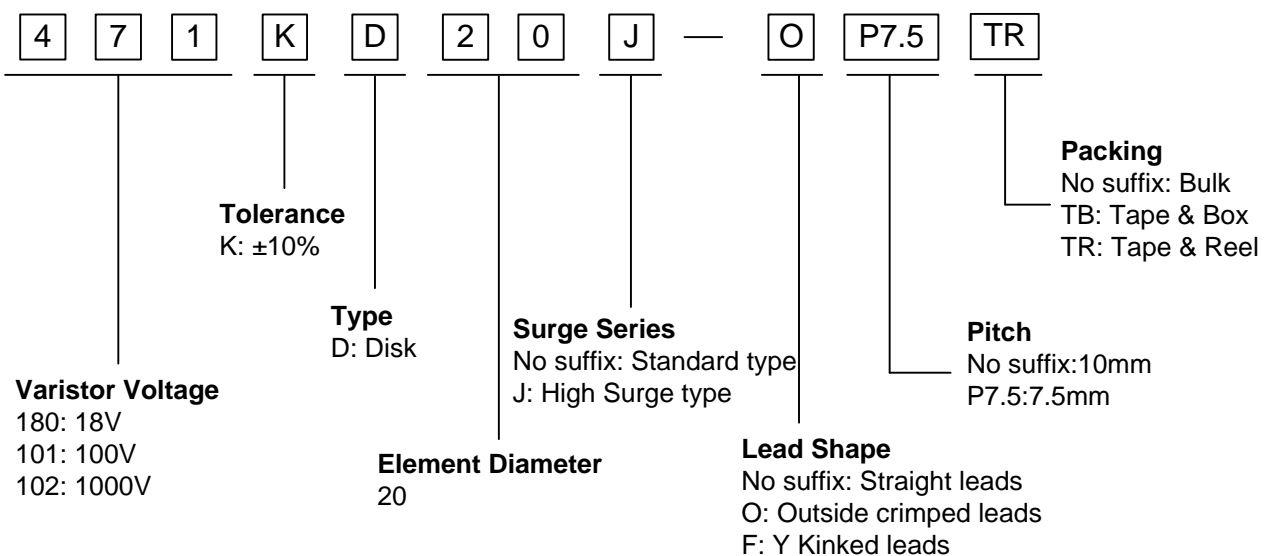
- Wide operating voltage ( $V_{1mA}$ ) range from 18V to 1800V
- Fast responding to transient over-voltage
- Large absorbing transient energy capability
- Low clamping ratio and no follow-on current
- Meets MSL level 1, per J-STD-020
- Operating Temperature:  $-40^{\circ}\text{C} \sim +105^{\circ}\text{C}$
- Storage Temperature:  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$
- Safety certification: UL、CSA、VDE



### 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**



Notes: Varistor voltage  $\geq 1200V$ , structure diagram is F type.

| Table 1  |                  |
|----------|------------------|
| Unit: mm |                  |
| Symbol   | Dimension        |
| H        | 21.0~26.0        |
| H1       | 24.0~28.0        |
| L(min.)  | 20.0             |
| L1(min.) | 15.0             |
| D        | 20.0~23.0        |
| F        | 7.5±0.8/10.0±1.0 |
| T        | Table 2          |
| e(±0.8)  | Table 2          |
| d(±0.05) | 0.8/1.0          |
| d1(±0.4) | 1.4/1.6          |

| Table 2  |         |     |       |          |     |
|----------|---------|-----|-------|----------|-----|
| Unit: mm |         |     |       |          |     |
| Model    | T       | e   | Model | T        | e   |
| 180K     | 2.1~4.3 | 1.7 | 361K  | 3.0~5.4  | 2.9 |
| 220K     | 2.2~4.4 | 1.8 | 391K  | 3.1~5.5  | 3.0 |
| 270K     | 2.2~4.6 | 2.0 | 431K  | 3.3~5.7  | 3.2 |
| 330K     | 2.3~4.8 | 1.9 | 471K  | 3.4~6.0  | 3.4 |
| 390K     | 2.2~4.5 | 2.0 | 511K  | 3.5~6.2  | 3.6 |
| 470K     | 2.3~4.7 | 2.1 | 561K  | 3.7~6.5  | 3.8 |
| 560K     | 2.4~5.0 | 2.3 | 621K  | 3.9~6.8  | 4.1 |
| 680K     | 2.5~5.3 | 2.6 | 681K  | 4.1~7.1  | 4.4 |
| 820K     | 2.2~4.5 | 2.0 | 751K  | 4.4~7.5  | 4.5 |
| 101K     | 2.5~4.6 | 2.2 | 781K  | 4.5~7.7  | 4.6 |
| 121K     | 2.5~4.8 | 2.4 | 821K  | 4.7~7.9  | 4.8 |
| 151K     | 2.3~4.5 | 2.0 | 911K  | 4.9~8.1  | 5.2 |
| 181K     | 2.4~4.6 | 2.1 | 102K  | 5.5~8.6  | 5.2 |
| 201K     | 2.5~4.7 | 2.2 | 112K  | 5.9~9.1  | 5.6 |
| 221K     | 2.6~4.8 | 2.3 | 122K  | 6.0~9.7  | 6.0 |
| 241K     | 2.7~4.9 | 2.4 | 142K  | 7.0~11.2 | 6.8 |
| 271K     | 2.7~5.0 | 2.6 | 162K  | 7.5~11.8 | 7.6 |
| 301K     | 2.8~5.0 | 2.7 | 182K  | 7.7~12.8 | 8.4 |
| 331K     | 2.8~5.2 | 2.7 |       |          |     |

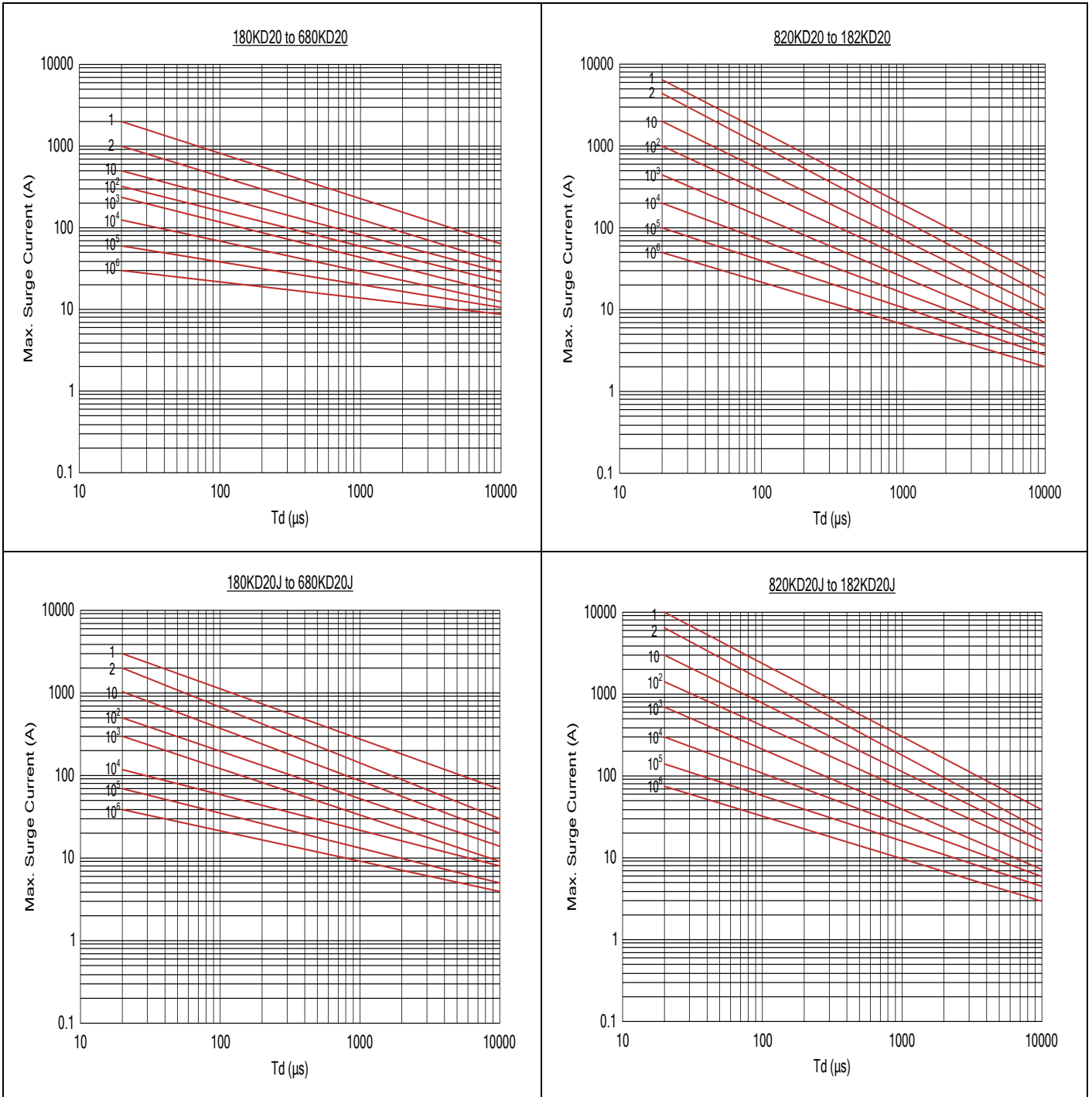
## Electrical Characteristics

| Part Number |            | Maximum Allowable Voltage |                     | Varistor Voltage     | Maximum Clamping Voltage |                    | Withstanding Surge Current |                  | Maximum Energy (10/1000 $\mu$ s) |                | Rated Power | Typical Capacitance (Reference) |
|-------------|------------|---------------------------|---------------------|----------------------|--------------------------|--------------------|----------------------------|------------------|----------------------------------|----------------|-------------|---------------------------------|
| Standard    | High Surge | 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) Standard             | I (A) High Surge | (J) Standard                     | (J) High Surge | (W)         | @1KHz (pf)                      |
| 180KD20     | 180KD20J   | 11                        | 14                  | 18(15~21.6)          | 20                       | 36                 | 2000                       | 3000             | 11                               | 13             | 0.2         | 28500                           |
| 220KD20     | 220KD20J   | 14                        | 18                  | 22(19.5~26)          | 20                       | 43                 | 2000                       | 3000             | 14                               | 16             | 0.2         | 18500                           |
| 270KD20     | 270KD20J   | 17                        | 22                  | 27(24~31)            | 20                       | 53                 | 2000                       | 3000             | 16                               | 19             | 0.2         | 13000                           |
| 330KD20     | 330KD20J   | 20                        | 26                  | 33(29.5~36.5)        | 20                       | 65                 | 2000                       | 3000             | 23                               | 24             | 0.2         | 11500                           |
| 390KD20     | 390KD20J   | 25                        | 31                  | 39(35~43)            | 20                       | 77                 | 2000                       | 3000             | 26                               | 28             | 0.2         | 8500                            |
| 470KD20     | 470KD20J   | 30                        | 38                  | 47(42~52)            | 20                       | 93                 | 2000                       | 3000             | 30                               | 34             | 0.2         | 7400                            |
| 560KD20     | 560KD20J   | 35                        | 45                  | 56(50~62)            | 20                       | 110                | 2000                       | 3000             | 38                               | 44             | 0.2         | 6500                            |
| 680KD20     | 680KD20J   | 40                        | 56                  | 68(61~75)            | 20                       | 135                | 2000                       | 3000             | 41                               | 49             | 0.2         | 5800                            |
| 820KD20     | 820KD20J   | 50                        | 65                  | 82(74~90)            | 100                      | 135                | 6500                       | 10000            | 45                               | 56             | 1.0         | 4900                            |
| 101KD20     | 101KD20J   | 60                        | 85                  | 100(90~110)          | 100                      | 165                | 6500                       | 10000            | 50                               | 70             | 1.0         | 4000                            |
| 121KD20     | 121KD20J   | 75                        | 100                 | 120(108~132)         | 100                      | 200                | 6500                       | 10000            | 55                               | 85             | 1.0         | 3300                            |
| 151KD20     | 151KD20J   | 95                        | 125                 | 150(135~165)         | 100                      | 250                | 6500                       | 10000            | 70                               | 106            | 1.0         | 2700                            |
| 181KD20     | 181KD20J   | 115                       | 150                 | 180(162~198)         | 100                      | 300                | 6500                       | 10000            | 85                               | 130            | 1.0         | 2200                            |
| 201KD20     | 201KD20J   | 130                       | 170                 | 200(180~220)         | 100                      | 340                | 6500                       | 10000            | 95                               | 140            | 1.0         | 2000                            |
| 221KD20     | 221KD20J   | 140                       | 180                 | 220(198~242)         | 100                      | 360                | 6500                       | 10000            | 100                              | 155            | 1.0         | 1800                            |
| 241KD20     | 241KD20J   | 150                       | 200                 | 240(216~264)         | 100                      | 395                | 6500                       | 10000            | 108                              | 168            | 1.0         | 1650                            |
| 271KD20     | 271KD20J   | 175                       | 225                 | 270(243~297)         | 100                      | 455                | 6500                       | 10000            | 127                              | 190            | 1.0         | 1500                            |
| 301KD20     | 301KD20J   | 190                       | 250                 | 300(270~330)         | 100                      | 500                | 6500                       | 10000            | 136                              | 210            | 1.0         | 1300                            |
| 331KD20     | 331KD20J   | 210                       | 275                 | 330(297~363)         | 100                      | 550                | 6500                       | 10000            | 150                              | 228            | 1.0         | 1200                            |
| 361KD20     | 361KD20J   | 230                       | 300                 | 360(324~396)         | 100                      | 595                | 6500                       | 10000            | 163                              | 255            | 1.0         | 1100                            |
| 391KD20     | 391KD20J   | 250                       | 320                 | 390(351~429)         | 100                      | 650                | 6500                       | 10000            | 180                              | 275            | 1.0         | 1000                            |
| 431KD20     | 431KD20J   | 275                       | 350                 | 430(387~473)         | 100                      | 710                | 6500                       | 10000            | 190                              | 305            | 1.0         | 930                             |
| 471KD20     | 471KD20J   | 300                       | 385                 | 470(423~517)         | 100                      | 775                | 6500                       | 10000            | 204                              | 350            | 1.0         | 850                             |
| 511KD20     | 511KD20J   | 320                       | 415                 | 510(459~561)         | 100                      | 845                | 6500                       | 10000            | 210                              | 360            | 1.0         | 780                             |
| 561KD20     | 561KD20J   | 350                       | 460                 | 560(504~616)         | 100                      | 925                | 6500                       | 10000            | 215                              | 380            | 1.0         | 710                             |
| 621KD20     | 621KD20J   | 385                       | 505                 | 620(558~682)         | 100                      | 1025               | 6500                       | 10000            | 224                              | 390            | 1.0         | 650                             |
| 681KD20     | 681KD20J   | 420                       | 560                 | 680(612~748)         | 100                      | 1120               | 6500                       | 10000            | 230                              | 400            | 1.0         | 600                             |
| 751KD20     | 751KD20J   | 460                       | 615                 | 750(675~825)         | 100                      | 1240               | 6500                       | 10000            | 255                              | 420            | 1.0         | 530                             |
| 781KD20     | 781KD20J   | 485                       | 640                 | 780(702~858)         | 100                      | 1290               | 6500                       | 10000            | 265                              | 440            | 1.0         | 510                             |
| 821KD20     | 821KD20J   | 510                       | 670                 | 820(738~902)         | 100                      | 1355               | 6500                       | 10000            | 282                              | 460            | 1.0         | 500                             |
| 911KD20     | 911KD20J   | 550                       | 745                 | 910(819~1001)        | 100                      | 1500               | 6500                       | 10000            | 310                              | 510            | 1.0         | 440                             |
| 102KD20     | 102KD20J   | 625                       | 825                 | 1000(900~1100)       | 100                      | 1650               | 6500                       | 10000            | 342                              | 565            | 1.0         | 400                             |
| 112KD20     | 112KD20J   | 680                       | 895                 | 1100(990~1210)       | 100                      | 1815               | 6500                       | 10000            | 383                              | 620            | 1.0         | 360                             |
| 122KD20     | 122KD20J   | 750                       | 990                 | 1200(1080~1320)      | 100                      | 1980               | 6500                       | 10000            | 408                              | 660            | 1.0         | 350                             |
| 142KD20     | 142KD20J   | 880                       | 1140                | 1400(1260~1540)      | 100                      | 2310               | 6500                       | 10000            | 532                              | 784            | 1.0         | 340                             |
| 162KD20     | 162KD20J   | 1000                      | 1280                | 1600(1440~1760)      | 100                      | 2640               | 6500                       | 10000            | 606                              | 896            | 1.0         | 330                             |
| 182KD20     | 182KD20J   | 1100                      | 1465                | 1800(1620~1980)      | 100                      | 2970               | 6500                       | 10000            | 625                              | 990            | 1.0         | 320                             |

Notes: 1. The tolerance of varistor voltage between 18V and 27V is more than 10%;

2. Varistor voltage  $\geq 1200V$ , structure diagram is F type;3. Leakage Current (@83% of V<sub>1mA</sub>): IR $\leq 50\mu A$  (180K~680K) ; IR $\leq 25\mu A$  (820K~182K).

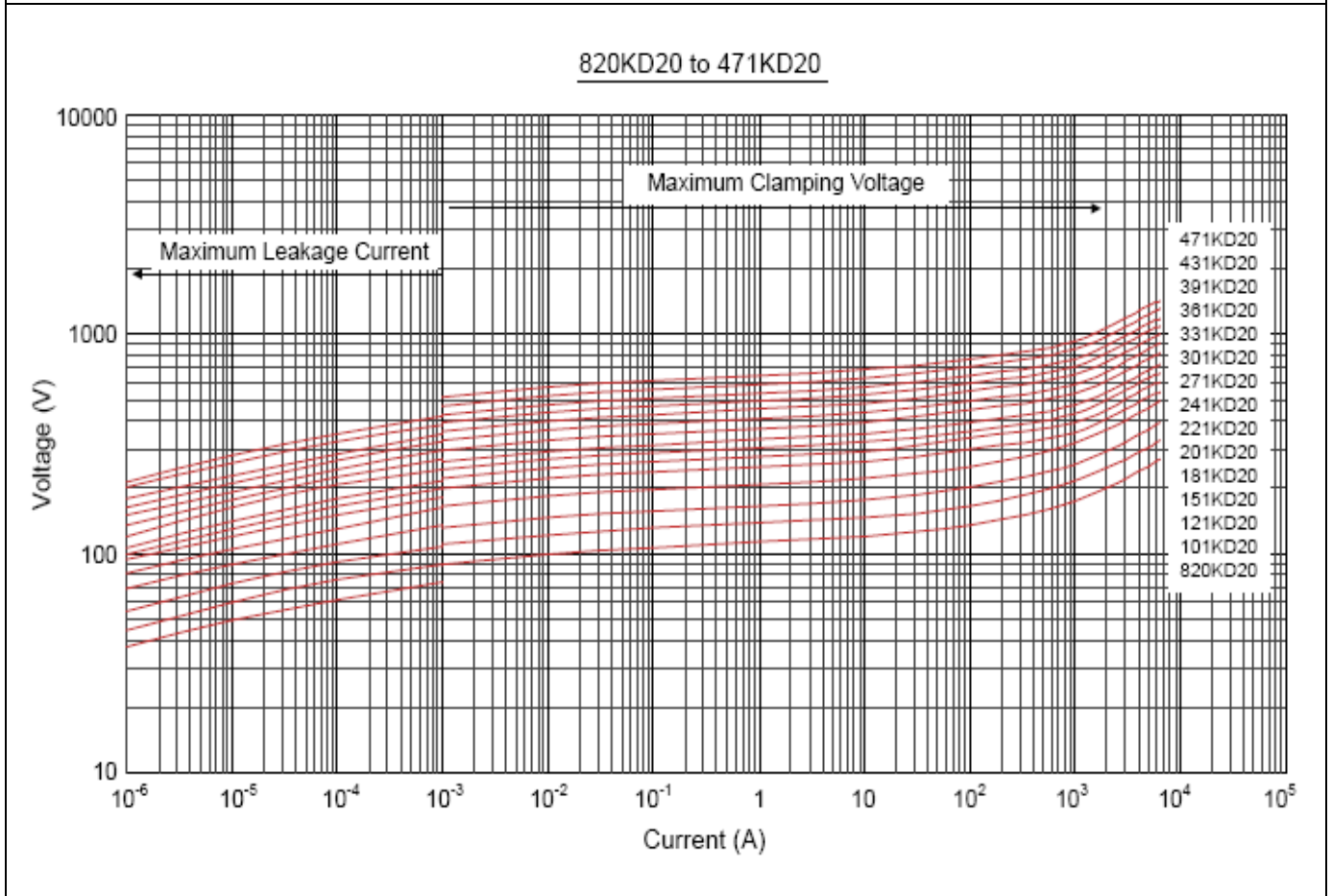
### Maximum Surge Current Derating Curve



**Maximum Leakage Current and Maximum Clamping Voltage Curve**



**Maximum Leakage Current and Maximum Clamping Voltage Curve**



**Maximum Leakage Current and Maximum Clamping Voltage Curve**



**Reliability**

| Items                         | Standard               | Test conditions / Methods                                                                                                                                                                                                                                                                                                                                                                                                                                   | Specifications                                                                                    |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
|-------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------|------------------|-----|------------|------|--------|------------------|-----------------------------------------------------------------|---|-------|------|---|------------------|-----|-----------------------------------------------------------------|
| Tensile Strength of Terminals | IEC60068-2-21          | Gradually applying the force specified and keeping the unit fixed for 10±1 sec.<br><br><table border="1"> <thead> <tr> <th>Terminal diameter (mm)</th> <th>Force (kg)</th> </tr> </thead> <tbody> <tr> <td>0.5&lt;d≤0.8</td> <td>1.0</td> </tr> <tr> <td>0.8&lt;d≤1.25</td> <td>2.0</td> </tr> <tr> <td>1.25&lt;d</td> <td>4.0</td> </tr> </tbody> </table>                                                                                                 | Terminal diameter (mm)                                                                            | Force (kg)       | 0.5<d≤0.8        | 1.0 | 0.8<d≤1.25 | 2.0  | 1.25<d | 4.0              | No visible damage<br> ΔV <sub>1mA</sub> /V <sub>1mA</sub>   ≤5% |   |       |      |   |                  |     |                                                                 |
| Terminal diameter (mm)        | Force (kg)             |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| 0.5<d≤0.8                     | 1.0                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| 0.8<d≤1.25                    | 2.0                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| 1.25<d                        | 4.0                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| Bending Strength of Terminals | IEC60068-2-21          | Hold specimen and apply the force specified below to each lead. Bend the specimen to 90°, then return to the original position. Repeat the procedure in the opposite direction.<br><br><table border="1"> <thead> <tr> <th>Terminal diameter (mm)</th> <th>Force (kg)</th> </tr> </thead> <tbody> <tr> <td>0.5&lt;d≤0.8</td> <td>0.5</td> </tr> <tr> <td>0.8&lt;d≤1.25</td> <td>1.0</td> </tr> <tr> <td>1.25&lt;d</td> <td>2.0</td> </tr> </tbody> </table> | Terminal diameter (mm)                                                                            | Force (kg)       | 0.5<d≤0.8        | 0.5 | 0.8<d≤1.25 | 1.0  | 1.25<d | 2.0              | No visible damage<br> ΔV <sub>1mA</sub> /V <sub>1mA</sub>   ≤5% |   |       |      |   |                  |     |                                                                 |
| Terminal diameter (mm)        | Force (kg)             |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| 0.5<d≤0.8                     | 0.5                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| 0.8<d≤1.25                    | 1.0                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| 1.25<d                        | 2.0                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| Vibration                     | IEC60068-2-6           | Frequency range: 10~55 Hz<br>Amplitude: 0.75mm or 98m/s <sup>2</sup><br>Direction: 3 mutually perpendicular directions, 2hrs each.                                                                                                                                                                                                                                                                                                                          | No visible damage<br> ΔV <sub>1mA</sub> /V <sub>1mA</sub>   ≤5%                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| Solderability                 | IEC60068-2-20          | Solder Temp: 245±5°C<br>Dipping Time: 2±0.5 sec                                                                                                                                                                                                                                                                                                                                                                                                             | At least 95% of terminal electrode is covered by new solder                                       |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| Resistance to Soldering Heat  | IEC60068-2-20          | Solder Temp: 260±5°C<br>Dipping Time: 10±1 sec                                                                                                                                                                                                                                                                                                                                                                                                              | No visible damage<br> ΔV <sub>1mA</sub> /V <sub>1mA</sub>   ≤5%                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| High Temperature Storage      | IEC60068-2-2           | Ambient Temp: 125±2°C<br>Duration: 1000±24hrs                                                                                                                                                                                                                                                                                                                                                                                                               | No visible damage<br> ΔV <sub>1mA</sub> /V <sub>1mA</sub>   ≤5%                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| Low Temperature Storage       | IEC60068-2-1           | Ambient Temp: -40±2°C<br>Duration: 1000±24hrs                                                                                                                                                                                                                                                                                                                                                                                                               | No visible damage<br> ΔV <sub>1mA</sub> /V <sub>1mA</sub>   ≤5%                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| Damp Heat, Steady State       | IEC60068-2-78          | The test is divided into two groups .<br>a. 40±2°C , 90~95% RH for 1344±24hrs<br>b. 40±2°C , 90~95% RH, at 10%VDC , 1344±24 hrs                                                                                                                                                                                                                                                                                                                             | No visible damage<br> ΔV <sub>1mA</sub> /V <sub>1mA</sub>   ≤10%<br>Insulation Resistance ≥ 100MΩ |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| High Temperature Load         | MIL-STD-202 Method 108 | Ambient Temp: 105±2°C Duration: 1000±24hrs<br>Load: Max. Allowable Voltage In AC.                                                                                                                                                                                                                                                                                                                                                                           | ΔV <sub>1mA</sub> /V <sub>1mA</sub>   ≤10%                                                        |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| Temperature Cycle             | IEC60068-2-14          | The conditions shown below shall be repeated 5 cycles<br><table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Period (minutes)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40±3</td> <td>30±3</td> </tr> <tr> <td>2</td> <td>Room temperature</td> <td>5±3</td> </tr> <tr> <td>3</td> <td>125±3</td> <td>30±3</td> </tr> <tr> <td>4</td> <td>Room temperature</td> <td>5±3</td> </tr> </tbody> </table>                         | Step                                                                                              | Temperature (°C) | Period (minutes) | 1   | -40±3      | 30±3 | 2      | Room temperature | 5±3                                                             | 3 | 125±3 | 30±3 | 4 | Room temperature | 5±3 | No visible damage<br> ΔV <sub>1mA</sub> /V <sub>1mA</sub>   ≤5% |
| Step                          | Temperature (°C)       | Period (minutes)                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| 1                             | -40±3                  | 30±3                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| 2                             | Room temperature       | 5±3                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| 3                             | 125±3                  | 30±3                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| 4                             | Room temperature       | 5±3                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                   |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| 8/20uS Surge Life             | IEC61051-1             | 8/20μS waveform, 10 surge currents, unipolar, interval 30secs, amplitude corresponding to max. surge current derating curves for 20μS.                                                                                                                                                                                                                                                                                                                      | No visible damage<br>ΔV <sub>b</sub> (1mA) ≤ ±10%                                                 |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| 10/1000μS Surge Life          | IEC61051-1             | 10/1000μS waveform, 10 surge currents, unipolar, interval 2mins, amplitude corresponding to max. surge current derating curves for 1000μS.                                                                                                                                                                                                                                                                                                                  | No visible damage<br> ΔV <sub>1mA</sub> /V <sub>1mA</sub>   ≤10%                                  |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |
| Voltage Proof                 | IEC61051-1             | Metal balls method, 2500Vac 1 min.                                                                                                                                                                                                                                                                                                                                                                                                                          | No visible damage                                                                                 |                  |                  |     |            |      |        |                  |                                                                 |   |       |      |   |                  |     |                                                                 |

**Soldering Recommendation**

Lead-free Wave Soldering Recommendation

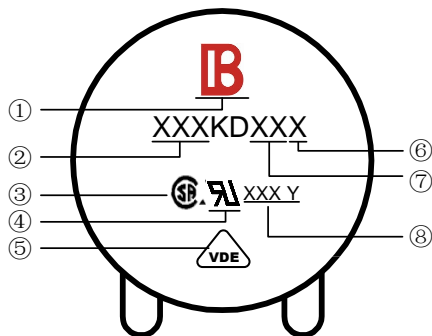


| Item             | Conditions        |
|------------------|-------------------|
| Peak Temperature | 265°C             |
| Dipping Time     | 10 seconds (max.) |
| Soldering        | 1 time            |

Recommendation Reworking Conditions with Soldering Iron

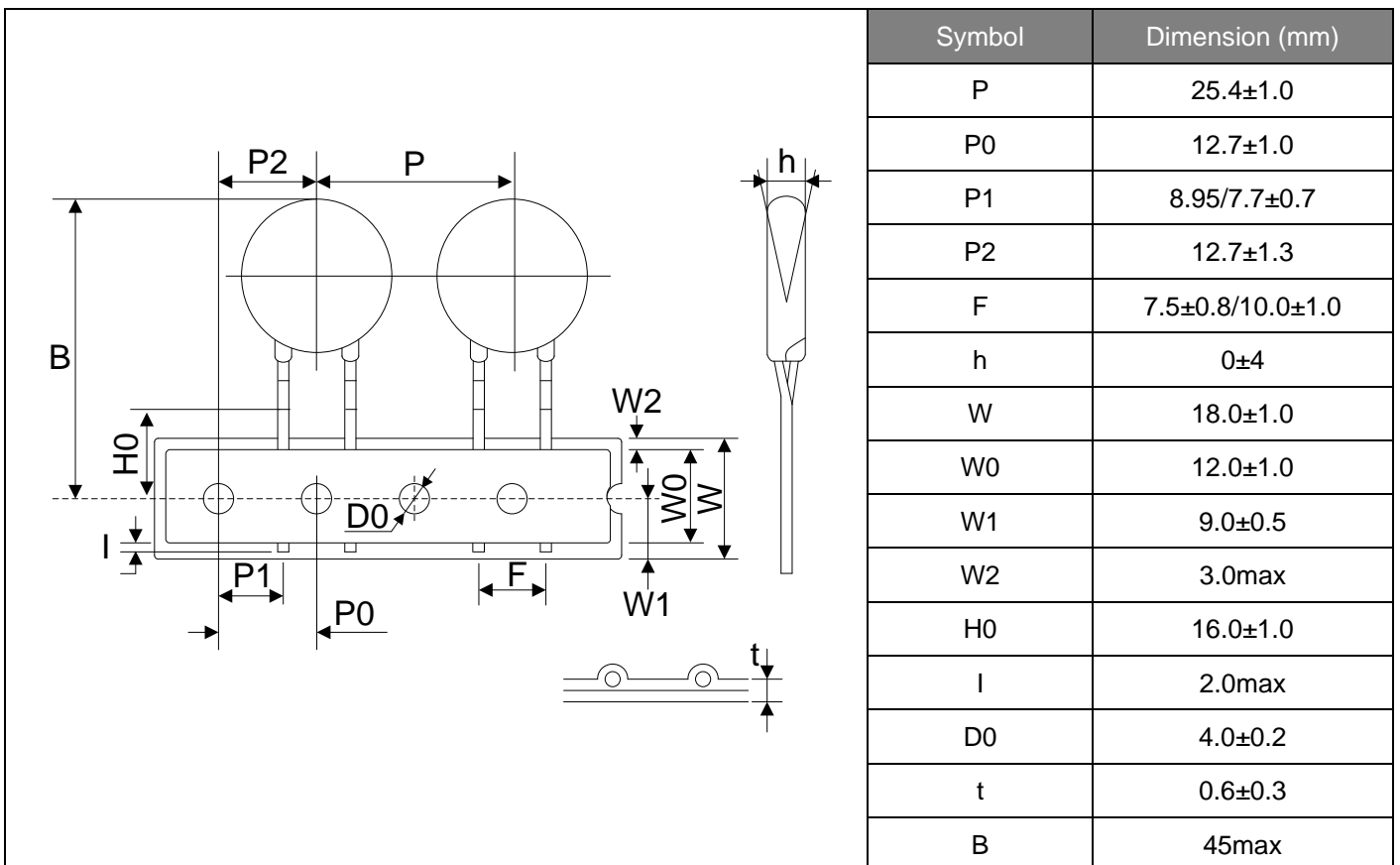
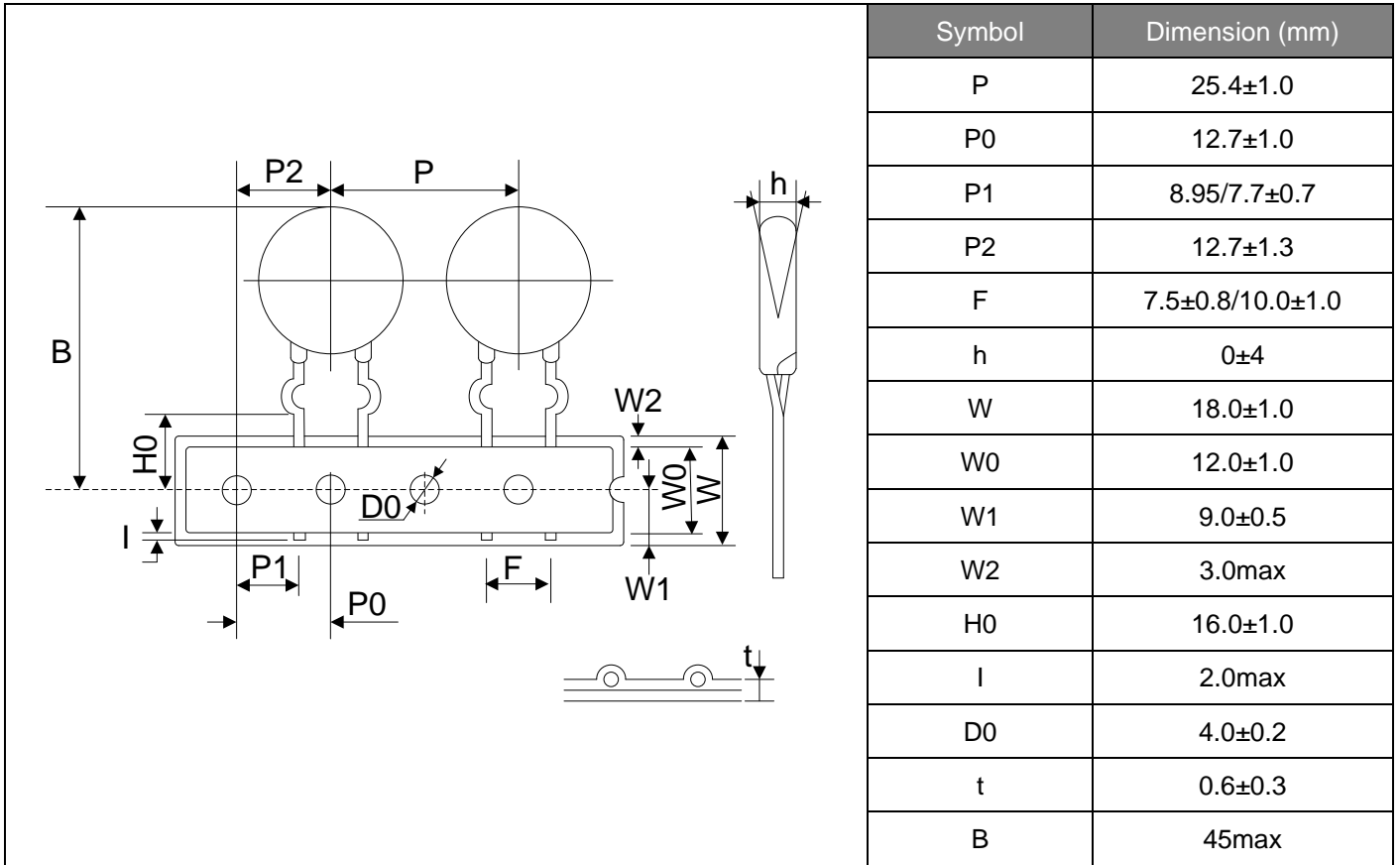
| Item                              | Conditions       |
|-----------------------------------|------------------|
| Temperature of Soldering Iron-tip | 360°C (max.)     |
| Soldering Time                    | 3 seconds (max.) |
| Distance from Varistor            | 2mm (min.)       |

**Marking Code**



- ① Brightking Logo
- ② Varistor Voltage
- ③ CSA Accreditation Logo
- ④ UL Accreditation Logo
- ⑤ VDE Accreditation Logo
- ⑥ “J” is High Surge Code, no “J” is Standard Surge
- ⑦ Disk Size
- ⑧ Internal control code

**Taping Dimensions**



**Taping Dimensions**



**Quantit**

| Packaging Dimensions (Unit: mm)                 | Quantity                               |
|-------------------------------------------------|----------------------------------------|
| <p>In bulk for Terminals Untrimmed Products</p> | 250pcs/bag<br>4bags/box<br>(180K~301K) |
|                                                 | 200pcs/bag<br>4bags/box<br>(331K~561K) |
|                                                 | 150pcs/bag<br>4bags/box<br>(621K~112K) |
|                                                 | 100pcs/bag<br>4bags/box<br>(122K~182K) |

**Quantit**

| Packaging Dimensions (Unit: mm)                                                                                                 | Quantity                                        |
|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <p>In bulk for Terminals Trimmed Products</p>  | <p>250pcs/bag<br/>2bags/box<br/>(180K~301K)</p> |
|                                                                                                                                 | <p>200pcs/bag<br/>2bags/box<br/>(331K~561K)</p> |
|                                                                                                                                 | <p>150pcs/bag<br/>2bags/box<br/>(621K~112K)</p> |
|                                                                                                                                 | <p>100pcs/bag<br/>2bags/box<br/>(122K~182K)</p> |
| Packaging Dimensions (Unit: mm)                                                                                                 | Quantity                                        |
| <p>Tape &amp; Box &amp; P0=12.7mm</p>        | <p>400pcs/box<br/>(180K~301K)</p>               |
|                                                                                                                                 | <p>300pcs/box<br/>(331K~561K)</p>               |
| <p>Tape &amp; Reel &amp; P0=12.7mm</p>      | <p>400pcs/box<br/>(180K~301K)</p>               |
|                                                                                                                                 | <p>300pcs/box<br/>(331K~561K)</p>               |

## Storage Condition of Products

### (I) Storage Conditions :

- 1.Storage Temperature :  $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
- 2.Relative Humidity :  $\leq 80\%RH$
- 3.Keep away from corrosive atmosphere and sunlight.

### (II) Period of Storage : 1 year

## LEGAL DISCLAIMER

YAGEO, its distributors and agents (collectively, "YAGEO"), hereby disclaims any and all liabilities for any errors, inaccuracies or incompleteness contained in any product related information, including but not limited to product specifications, datasheets, pictures and/or graphics. YAGEO may make changes, modifications and/or improvements to product related information at any time and without notice.



YAGEO makes no representation, warranty, and/or guarantee about the fitness of its products for any particular purpose or the continuing production of any of its products. To the maximum extent permitted by law, YAGEO disclaims (i) any and all liability arising out of the application or use of any YAGEO product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for a particular purpose, non-infringement and merchantability.

YAGEO products are designed for general purpose applications under normal operation and usage conditions. Please contact YAGEO for the applications listed below which require especially high reliability for the prevention of defects which might directly cause damage to the third party's life, body or property: Aerospace equipment (artificial satellite, rocket, etc.), Atomic energy-related equipment, Aviation equipment, Disaster prevention equipment, crime prevention equipment, Electric heating apparatus, burning equipment, Highly public information network equipment, data-processing equipment, Medical devices, Military equipment, Power generation control equipment, Safety equipment, Traffic signal equipment, Transportation equipment and Undersea equipment, or for any other application or use in which the failure of YAGEO products could result in personal injury or death, or serious property damage. Particularly **YAGEO Corporation and its affiliates do not recommend the use of commercial or automotive grade products for high reliability applications or manned space flight.**

Information provided here is intended to indicate product specifications only. YAGEO reserves all the rights for revising this content without further notification, as long as products are unchanged. Any product change will be announced by PCN.

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View 391KD20J on WIN SOURCE](#)
-  [Yageo Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management