

20D Series

产品简介

压敏电阻的本身是由氧化锌颗粒组成的矩阵结构。颗粒之间的晶界类似双向 PN 结的电气特性，当低电压时，这些晶界处于高阻抗状态，当电压高时，又会处于击穿状态，是一种非线性器件。



应用领域:

抑制消费类电子产品及工业用电子设备主电源所窜入的浪涌电流。如 LED 照明、电度表、开关电源、排插等。

通讯等有线网络设备窜入的浪涌电流。

房舍装置以及瓦斯和油类设施上所装置的电子器材的浪涌保护

抑制电子线路内发生的浪涌

照相器材用于限压开关

Product Profile

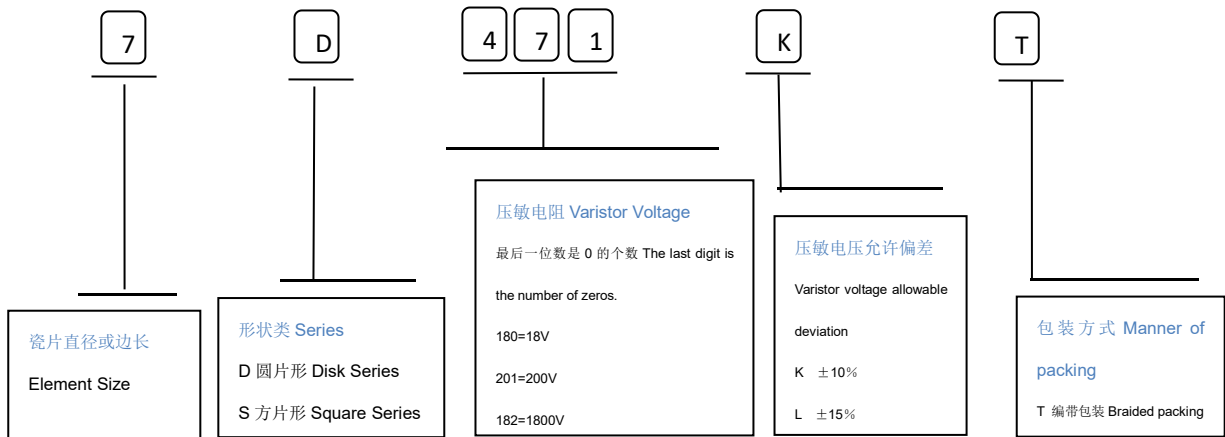
The body of varistor is a matrix structure composed of zinc oxide particles. The grain boundaries between particles are similar to the electrical characteristics of bidirectional PN junctions. When the voltage is low, these grain boundaries are in the high impedance state, and when the voltage is high, they will be in the breakdown state, which is a kind of non-linear device.

Application

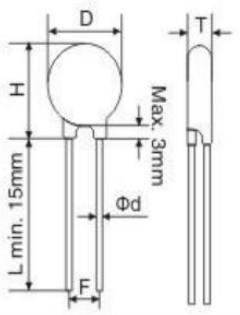
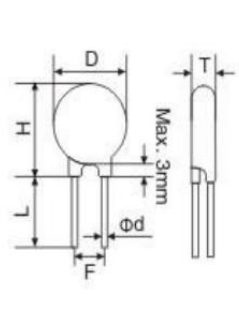
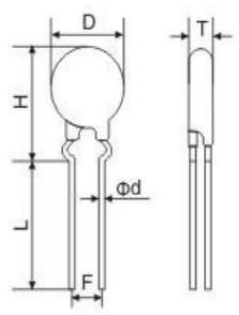
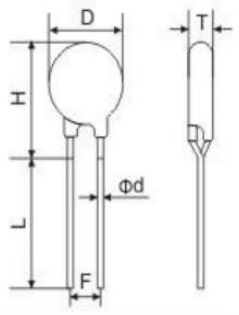
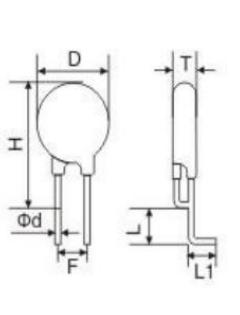
Suppresses surge current from the main power supply of consumer electronics and industrial electronic equipment. Such as LED lighting, watt-hour meter, switching power supply, layout and so on.

Surge protection of electronic equipment on building installations and gas and oil installations Suppression of Surges in Electronic Circuits Photographic equipment for voltage limiting switches

产品料号代码 HOW TO ORDER



产品外形 Product Shape

| Bulk Straight 标准外形 | Cutting Straight 切短脚 | Out Forming 外弯脚 | Y-Forming Y 型脚 | Cutting Bending 折脚 |
|---|---|---|--|---|
|  |  |  |  |  |

口 K 的详解 Detailed explanation of

| 口中的内容 The content of the blank box | K | | KJ | | KH | | KH+ |
|---|--|--|---|---|---|--|---|
| 产品级别 Product Level | 普通型 conventional type | | 加强型 Reinforced type | | 超强型 Superstrong type | | 定制型 Customized |
| 性能参数 property parameter | 1次脉冲最大电 流 Withstanding surge Current (Imax) (A) | 电压冲击 15 次 Impulse voltage15 Times (1.2/50μs) (V) | 1次脉冲最大电 流 Withstanding surge Current (Imax) (A) | 电流冲击 15 次 Impulse current 15 Times (8/20μs) (A) | 1次脉冲最大电 流 Withstanding surge Current (Imax) (A) | 电压冲击 40 次 Impulse voltage40 Times (1.2/50μs) (V) | 超出左边栏的脉冲 标准的特殊规格 Super high Energy |
| 5D | 400 | 1000 | 800 | 250 | 800 | 1000 | 举例 1 Example 14D 满足 20D 的脉 冲性能要求 14D instead of 20D 举例 2 Example 14D561KH+ 能达 到 6KV/3KA 100 次 14D561KH+ reach 6KV/3KA 100times |
| 7D | 1200 | 2000 | 1750 | 500 | 1750 | 2000 | |
| 10D | 1500 | 4000 | 3500 | 1500 | 3500 | 4000 | |
| 14D | 4500 | 6000 | 6000 | 3000 | 6000 | 6000 | |
| 20D | 6500 | 10000 | 10000 | 5000 | 10000 | 10000 | |
| 符合国际和国 家标准 Compliance with international and national standards | IEC61051-1 IEC61051-2 IEC61051-2-2 CSA-C22.2 UL1449 第三版 The third edition of UL1449 | GB/T10193 GB/T10194 GBT10195 | 包含左栏, 并增加以下标准: Include the left column and add the following criteria: IEC60950-1:2005/Annex Q GB4943.1-2011 GB8898-2011 UL1449 第 4 版 The fourth edition of UL1449 | | 包含左栏, 并增加以下标准: Include the left column and add the following criteria: IEC61000-4-5 GB/T17626.5 IEC61643-331 GB/T18802.331 | | |

备注:1 上表仅适用于压敏电压 82V 以上规格的产品。2 上表电压冲击 15 次/40 次仅适用于压敏电压 430V 及以上规格的产品。

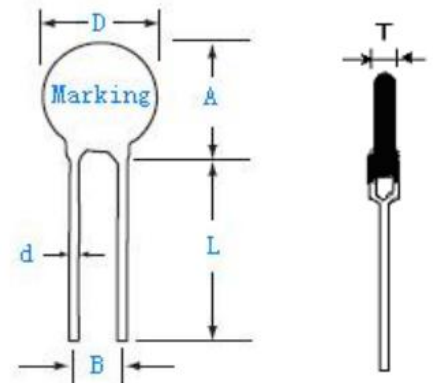
Remarks: 1 The above table is only applicable to products with voltage sensitive voltage of more than 82V.

2The above table voltage shock 15 times/40 times only applies to products with voltage sensitive voltage 430V or above.

产品尺寸

单位 (UNIT) :mm

| A _μ | 25·Max _μ | T (thickness) _μ |
|----------------|------------------------|--|
| B _μ | 10±1 _μ | 180K--201K:5.0***221K--331K:5.5 _μ |
| d _μ | 0.97±0.05 _μ | 361K--471K:6.0***511K--561K:6.5 _μ |
| D _μ | 23·Max _μ | 621K--681K:7.0***751K--821K:7.5 _μ |
| L _μ | 25·Min _μ | 102K--122K:8.0***** |
| | | 142K--1 |
| | | 62K:10 _μ |
| | | 182K:12 _μ |



20D 系列 电气参数 20D Series Electrical Parameters

| 型号规格 Part NO | 压敏电压 Varistor Voltage | | 最大允许使用电压 Maximum allowable voltage | | 最大限制电压 Maximum Limited Voltage | 通流容量 Withstanding Surge current (8/20 μ s) times | | 静态功率 Rated Wattage | 能量耐量 Energy (2ms) | | 静态电容量 (参考值) Typical Capacitance |
|-----------------|--------------------------|-----------|---------------------------------------|-----|-----------------------------------|---|------|-----------------------|----------------------|------|---------------------------------------|
| | 0.1mA | | AC | DC | V5A | 1t | 2t | (W) | 10/1000 | 2ms | 1KHz |
| | (V) | | (V) | | (V) | (A) | | | (A) | | (PF) |
| 20D180L | 18 | 15-21 | 11 | 14 | 36 | 2000 | 1000 | 0.1 | 11.0 | 10.0 | 28500 |
| 20D220K | 22 | 20-24 | 14 | 18 | 43 | 2000 | 1000 | 0.1 | 14.0 | 13 | 18.5k |
| 20D270K | 27 | 24-30 | 17 | 22 | 53 | 2000 | 1000 | 0.1 | 18.0 | 15 | 13K |
| 20D330K | 33 | 30-36 | 20 | 26 | 65 | 2000 | 1000 | 0.1 | 23.0 | 20 | 11.5K |
| 20D390K | 39 | 35-43 | 25 | 31 | 77 | 2000 | 1000 | 0.1 | 26.0 | 24 | 8.5K |
| 20D470K | 47 | 42-52 | 30 | 38 | 93 | 2000 | 1000 | 0.1 | 33.0 | 30 | 7.4K |
| 20D560K | 56 | 50-62 | 35 | 45 | 110 | 2000 | 1000 | 0.1 | 41.0 | 35 | 6.5K |
| 20D680K | 68 | 61-75 | 40 | 56 | 135 | 2000 | 1000 | 0.1 | 46.0 | 40 | 5.8K |
| 20D820K | 82 | 74-90 | 50 | 65 | 135 | 3000 | 2000 | 0.6 | 38.0 | 27 | 4.9K |
| 20D101K | 100 | 90-100 | 60 | 85 | 165 | 10000 | 7000 | 0.6 | 45.0 | 30 | 4.0K |
| 20D121K | 120 | 108-132 | 75 | 100 | 200 | 10000 | 7000 | 0.6 | 55.0 | 40 | 3.3K |
| 20D151K | 150 | 135-165 | 95 | 125 | 250 | 10000 | 7000 | 0.6 | 70.0 | 50 | 2.7K |
| 20D181K | 180 | 162-198 | 115 | 150 | 300 | 10000 | 7000 | 0.6 | 85.0 | 60 | 2.2K |
| 20D201K | 200 | 185-225 | 130 | 170 | 340 | 10000 | 7000 | 0.6 | 95.0 | 70 | 2.0K |
| 20D221K | 220 | 198-242 | 140 | 180 | 360 | 10000 | 7000 | 0.6 | 100.0 | 75 | 1.8K |
| 20D241K | 240 | 216-264 | 150 | 200 | 395 | 10000 | 7000 | 0.6 | 108.0 | 80 | 1.65K |
| 20D271K | 270 | 243-297 | 175 | 225 | 455 | 10000 | 7000 | 0.6 | 127.0 | 90 | 1.5K |
| 20D301K | 300 | 270-330 | 195 | 250 | 500 | 10000 | 7000 | 0.6 | 136.0 | 100 | 1.3K |
| 20D331K | 330 | 297-363 | 210 | 275 | 550 | 10000 | 7000 | 0.6 | 150.0 | 110 | 1.2K |
| 20D361K | 360 | 324-396 | 230 | 300 | 595 | 10000 | 7000 | 0.6 | 163.0 | 120 | 1.1K |
| 20D391K | 390 | 351-429 | 250 | 320 | 650 | 10000 | 7000 | 0.6 | 180.0 | 130 | 1.0K |
| 20D431K | 430 | 387-473 | 275 | 350 | 710 | 10000 | 7000 | 0.6 | 190.0 | 140 | 930 |
| 20D471K | 470 | 423-517 | 300 | 385 | 775 | 10000 | 7000 | 0.6 | 220.0 | 150 | 850 |
| 20D511K | 510 | 459-561 | 320 | 410 | 845 | 10000 | 7000 | 0.6 | 220.0 | 150 | 780 |
| 20D561K | 560 | 504-616 | 350 | 455 | 930 | 10000 | 7000 | 0.6 | 220.0 | 150 | 970 |
| 20D621K | 620 | 558-682 | 385 | 505 | 1025 | 10000 | 7000 | 0.6 | 220.0 | 150 | 950 |
| 20D681K | 680 | 612-748 | 420 | 560 | 1120 | 10000 | 7000 | 0.6 | 230.0 | 160 | 900 |
| 20D751K | 750 | 657-825 | 460 | 615 | 1240 | 10000 | 7000 | 0.6 | 420 | 300 | 850 |
| 20D781K | 780 | 702-858 | 485 | 640 | 1290 | 10000 | 7000 | 0.6 | 445 | 315 | 750 |
| 20D821K | 820 | 738-902 | 510 | 670 | 1355 | 10000 | 7000 | 0.6 | 460 | 325 | 700 |
| 20D911K | 910 | 819-1001 | 550 | 745 | 1500 | 10000 | 7000 | 0.6 | 510 | 360 | 600 |
| 20D951K | 951 | 855-1045 | 575 | 765 | 1580 | 10000 | 7000 | 0.6 | 535 | 380 | 550 |
| 20D102K | 1.0K | 900-1100 | 625 | 825 | 1650 | 10000 | 7000 | 0.6 | 560 | 400 | 500 |
| 20D112K | 1.1K | 990-1210 | 680 | 895 | 1815 | 10000 | 7000 | 0.6 | 620 | 440 | 450 |
| 20D122K | 1.8K | 1080-1320 | 750 | 985 | 1990 | 10000 | 7000 | 0.6 | 675 | 580 | 400 |

| | | | | | | | | | | | |
|---------|------|-----------|------|------|------|-------|------|--|------|-----|-----|
| 20D152K | 1.5K | 1350-1650 | 850 | 1185 | 2310 | 10000 | 7000 | | 810 | 640 | 350 |
| 20D182K | 1.8K | 1860-1980 | 1000 | 1465 | 2970 | 10000 | 7000 | | 1020 | 720 | 220 |

注：压敏电压测试电流 DC1Ma 环境温度： $-45^{\circ}\text{C} \sim +85^{\circ}\text{C}$ 加强型温度： $-45^{\circ}\text{C} \sim +125^{\circ}\text{C}$ 压敏电压温度变化率： $<0.05/^{\circ}\text{C}$

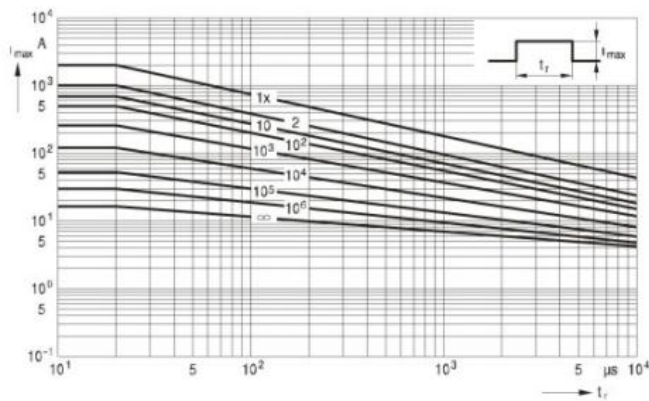
Note: Voltage-sensitive voltage test current DC1Ma working environment temperature: $-45 \sim 85$, intensified temperature: $-45 +125$, temperature change rate of voltage-sensitive voltage: $< 0.05/$.

降额曲线图 Reduction curve

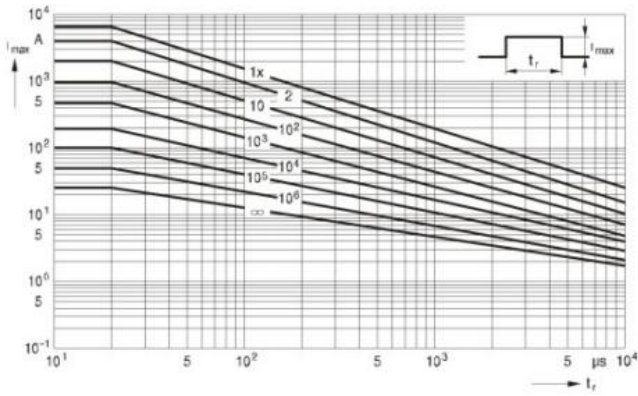
横轴是冲击时间即浪涌波形宽度，纵轴是冲击电流峰值，线上的数字是冲击次数

Maximum Surge current $i_{\max} = f(t_r, \text{pules train})$

20D180L-20D680K



20D820K-20D182K



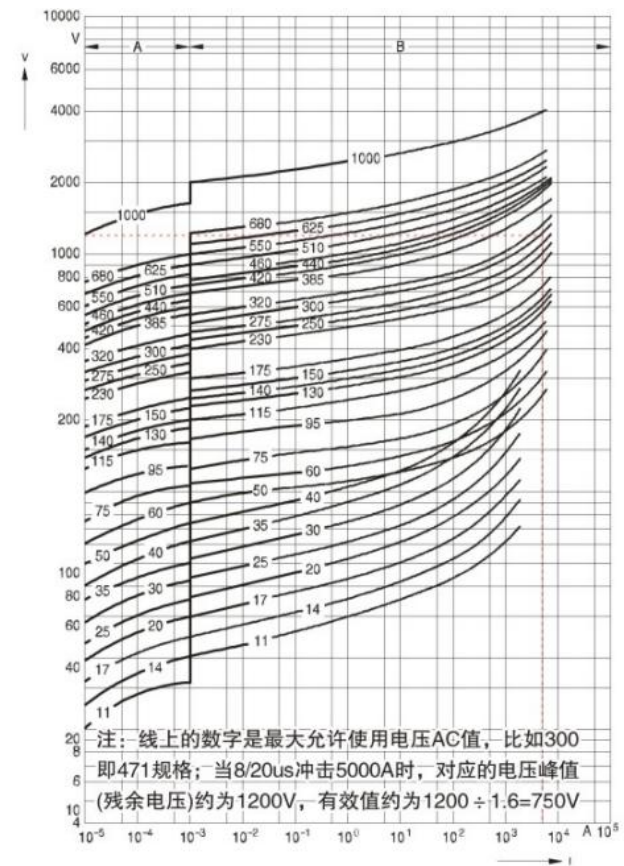
伏安特性图 v/i characteristics

A 区是泄露电流图，A=Leakage current

B 区是冲击电流与限制电流对称区

B=Protection level for worst-case varistor tolerances

20D180L-20D182K



Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.