



## MOV Metal Oxide Varistor 7D 10D 14D 20D 301K 331K 361K 511 621 751 911 102K

Our Product Introduction

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### Basic Information

- Place of Origin: Shenzhen, Guangdong, China
- Brand Name: SOCAY
- Certification: VDE ,UL,REACH,RoHS,ISO
- Model Number: 07d 471k
- Minimum Order Quantity: 1000PCS
- Price: Negotiable
- Packaging Details: AMMO packing
- Delivery Time: 5-8 work days



### Product Specification

- Description: Metal Oxide Varistor
- Package Type:  $\Phi 7\text{mm}$
- VAC: 300V
- VDC: 385V
- Varistor Voltage: 470(423~517)V
- IP: 10A
- VC: 775V
- Rated Power: 0.25W
- Typ. Capacitance: 100pF
- Material: Zinc Oxide
- Highlight: **Metal Oxide Varistor 14D,  
Metal Oxide Varistor 301K**



### More Images



## Product Description

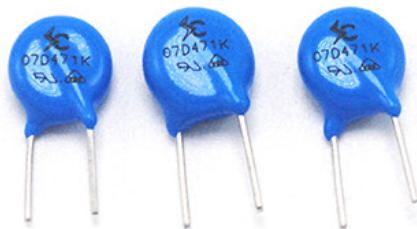
Socay Factory MOV Varistor 7d 10d 14d 20d 301k 331k 361k 511 621 751 911 102K

DATASHEET: [07D Series\\_v2306.1.pdf](#)

| Type Number |            | Maximum Allowable voltage |                     | Varistor Voltage     | Maximum Clamping Voltage |                    | Withstanding Surge Current |        |                 |        | Maximum Energy (10/1000μs) |                | 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)                      |
|             |            |                           |                     |                      |                          |                    | 1 Time                     | 2 Time | 1 Time          | 2 Time |                            |                |             |                                 |
| 07D180K     | 07D180KJ   | 11                        | 14                  | 18(15~21.6)          | 2.5                      | 36                 | 250                        | 125    | 500             | 250    | 0.9                        | 2.0            | 0.02        | 2800                            |
| 07D220K     | 07D220KJ   | 14                        | 18                  | 22(19.5~26)          | 2.5                      | 43                 | 250                        | 125    | 500             | 250    | 1.1                        | 2.4            | 0.02        | 2300                            |
| 07D270K     | 07D270KJ   | 17                        | 22                  | 27(24~30)            | 2.5                      | 53                 | 250                        | 125    | 500             | 250    | 1.4                        | 3.0            | 0.02        | 1800                            |
| 07D330K     | 07D330KJ   | 20                        | 26                  | 33(29.5~36.5)        | 2.5                      | 66                 | 250                        | 125    | 500             | 250    | 1.7                        | 3.5            | 0.02        | 1500                            |
| 07D390K     | 07D390KJ   | 25                        | 31                  | 39(35~43)            | 2.5                      | 77                 | 250                        | 125    | 500             | 250    | 2.1                        | 4.0            | 0.02        | 1300                            |
| 07D470K     | 07D470KJ   | 30                        | 38                  | 47(42~54)            | 2.5                      | 93                 | 250                        | 125    | 500             | 250    | 2.5                        | 5.0            | 0.02        | 1100                            |
| 07D560K     | 07D560KJ   | 35                        | 45                  | 56(50~62)            | 2.5                      | 110                | 250                        | 125    | 500             | 250    | 3.1                        | 6.0            | 0.02        | 900                             |
| 07D680K     | 07D680KJ   | 40                        | 56                  | 68(61~75)            | 2.5                      | 135                | 250                        | 125    | 500             | 250    | 3.6                        | 7.0            | 0.02        | 740                             |
| 07D820K     | 07D820KJ   | 50                        | 65                  | 82(74~90)            | 10                       | 135                | 1200                       | 600    | 1750            | 1250   | 5.5                        | 10.0           | 0.25        | 600                             |
| 07D101K     | 07D101KJ   | 60                        | 85                  | 100(90~110)          | 10                       | 165                | 1200                       | 600    | 1750            | 1250   | 6.5                        | 12.0           | 0.25        | 500                             |
| 07D121K     | 07D121KJ   | 75                        | 100                 | 120(108~132)         | 10                       | 200                | 1200                       | 600    | 1750            | 1250   | 7.8                        | 13.0           | 0.25        | 420                             |
| 07D151K     | 07D151KJ   | 95                        | 125                 | 150(135~165)         | 10                       | 250                | 1200                       | 600    | 1750            | 1250   | 9.7                        | 13.0           | 0.25        | 330                             |
| 07D181K     | 07D181KJ   | 115                       | 150                 | 180(162~198)         | 10                       | 300                | 1200                       | 600    | 1750            | 1250   | 11.7                       | 16.0           | 0.25        | 280                             |
| 07D201K     | 07D201KJ   | 130                       | 170                 | 200(180~220)         | 10                       | 340                | 1200                       | 600    | 1750            | 1250   | 13.0                       | 17.0           | 0.25        | 250                             |
| 07D221K     | 07D221KJ   | 140                       | 180                 | 220(198~242)         | 10                       | 360                | 1200                       | 600    | 1750            | 1250   | 14.0                       | 19.0           | 0.25        | 230                             |
| 07D241K     | 07D241KJ   | 150                       | 200                 | 240(216~264)         | 10                       | 395                | 1200                       | 600    | 1750            | 1250   | 15.0                       | 21.0           | 0.25        | 210                             |
| 07D271K     | 07D271KJ   | 175                       | 225                 | 270(243~297)         | 10                       | 455                | 1200                       | 600    | 1750            | 1250   | 18.0                       | 24.0           | 0.25        | 185                             |
| 07D301K     | 07D301KJ   | 190                       | 250                 | 300(270~330)         | 10                       | 500                | 1200                       | 600    | 1750            | 1250   | 20.0                       | 26.0           | 0.25        | 165                             |
| 07D331K     | 07D331KJ   | 210                       | 275                 | 330(297~363)         | 10                       | 550                | 1200                       | 600    | 1750            | 1250   | 23.0                       | 28.0           | 0.25        | 150                             |
| 07D361K     | 07D361KJ   | 230                       | 300                 | 360(324~396)         | 10                       | 595                | 1200                       | 600    | 1750            | 1250   | 25.0                       | 32.0           | 0.25        | 140                             |
| 07D391K     | 07D391KJ   | 250                       | 320                 | 390(351~429)         | 10                       | 650                | 1200                       | 600    | 1750            | 1250   | 25.0                       | 35.0           | 0.25        | 130                             |
| 07D431K     | 07D431KJ   | 275                       | 350                 | 430(387~473)         | 10                       | 710                | 1200                       | 600    | 1750            | 1250   | 28.0                       | 40.0           | 0.25        | 115                             |
| 07D471K     | 07D471KJ   | 300                       | 385                 | 470(423~517)         | 10                       | 775                | 1200                       | 600    | 1750            | 1250   | 30.0                       | 42.0           | 0.25        | 105                             |
| 07D511K     | 07D511KJ   | 320                       | 415                 | 510(459~561)         | 10                       | 845                | 1200                       | 600    | 1750            | 1250   | 30.0                       | 45.0           | 0.25        | 100                             |
| 07D561K     | 07D561KJ   | 350                       | 460                 | 560(504~616)         | 10                       | 925                | 1200                       | 600    | 1750            | 1250   | 30.0                       | 49.0           | 0.25        | 90                              |
| 07D621K     | 07D621KJ   | 385                       | 505                 | 620(558~682)         | 10                       | 1025               | 1200                       | 600    | 1750            | 1250   | 33.0                       | 55.0           | 0.25        | 80                              |
| 07D681K     | 07D681KJ   | 420                       | 560                 | 680(612~748)         | 10                       | 1120               | 1200                       | 600    | 1750            | 1250   | 33.0                       | 60.0           | 0.25        | 75                              |
| 07D751K     | 07D751KJ   | 460                       | 615                 | 750(675~825)         | 10                       | 1240               | 1200                       | 600    | 1750            | 1250   | 67.2                       | 65.0           | 0.25        | 70                              |
| 07D781K     | 07D781KJ   | 485                       | 640                 | 780(702~858)         | 10                       | 1290               | 1200                       | 600    | 1750            | 1250   | 67.2                       | 65.0           | 0.25        | 70                              |

|         |          |     |     |              |    |      |      |     |      |      |      |      |      |    |
|---------|----------|-----|-----|--------------|----|------|------|-----|------|------|------|------|------|----|
| 07D821K | 07D821KJ | 510 | 670 | 820(738~902) | 10 | 1355 | 1200 | 600 | 1750 | 1250 | 67.2 | 70.0 | 0.25 | 60 |
|---------|----------|-----|-----|--------------|----|------|------|-----|------|------|------|------|------|----|

**Remark:** Voltage>33V, K is  $\pm 10\%$



#### About MOV Varistor

The resistor material of the varistor is a semiconductor, so it is one type of resistor. At present, most zinc oxide varistors are used. Its main raw materials are composed of divalent elements and hexavalent element O. Therefore, from the perspective of raw materials, zinc oxide varistor is a compound semiconductor material oxide semiconductor.

The relationship between the lightning protection effect of MOV multilayer varistor and the working voltage

The function of the varistor in the circuit is for relay protection and resistance to electric shock.

The relay protection function of the varistor in the circuit can usually be combined with the current fuse to protect against electric shock or other relays. When selecting a type, what is the relationship between the lightning protection effect of the varistor and the voltage?

The voltage and current intensity of a varistor do not follow the Euclidean law but exhibit a nonlinear dependence. When the voltage applied on both sides is less than the nominal voltage, the resistance of the varistor is close to infinite, and there is almost no current passing through it.

When the voltage applied on both sides is slightly higher than the nominal voltage value, the varistor will quickly break down and conduct, and change from a high resistance state to a low resistance state, and the operating current will also increase rapidly. When the voltage applied on both sides is lower than the nominal voltage value, the varistor returns to its high resistance state. When the voltage applied on both sides exceeds the specified voltage value, the varistor will all break down and be destroyed, and will no longer be able to recover on its own.

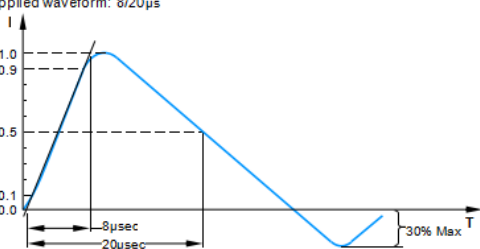
Therefore, the relationship between the voltage of the varistor and the lightning protection effect is not that the higher the voltage, the better the lightning protection effect. The larger the voltage of the varistor, it will only make its overlapping function better. Quality is the lifeline of an enterprise and one of the magic weapons that establishes its competitiveness. Capacitor is one of the essential components in our closely related electronic equipment.

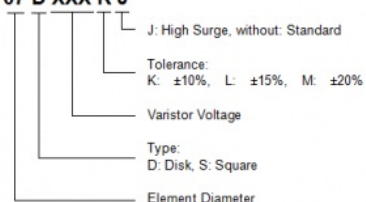
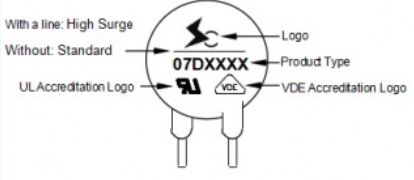
#### Description:

The 07D series radial leaded varistors provides an ideal circuit protection solution for lower DC voltage applications by offering higher surge ratings than ever before available in such small discs.

The maximum peak surge current rating can reach up to 1.75KA (8/20  $\mu$ s pulse) to protect against high peak surges, including indirect lightning strike interference, system switching transients and abnormal fast transients from the power source.

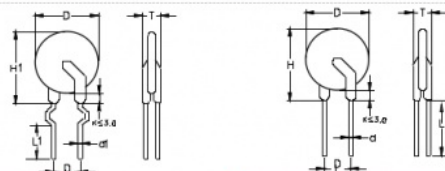
|                              |                         |
|------------------------------|-------------------------|
| <b>Material</b>              | No Radioactive Material |
| <b>Operating Temperature</b> | -40 ~ +85               |
| <b>Storage Temperature</b>   | -55 ~ +125              |
| <b>Body</b>                  | Nickel Plated           |
| <b>Leads</b>                 | Tin Plated              |
| <b>Devices with No lead</b>  | Nickel Plated           |

| Electrical Rating                  |  |               |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
|------------------------------------|--|---------------|-----------------------------|-----------|--------------|--------------|--------------|--------------|-----------|--------------|--------------|--------------|--------------|------------|--------------|--------------|--------------|---------------|------------|--------------|--------------|--------------|---------------|------------|--------------|---------------|--------------|---------------|
| Item                               | Test Condition / Description   |               | Requirement                 |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
| Maximum Allowable Voltage          | The recommended maximum sine wave voltage (RMS) or the maximum DC voltage can be applied continuously.   |               | To meet the specified value |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
| Varistor Voltage                   | The voltage between two terminals with the specified measuring current 1mA.DC applied is call Vb.  |               |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
| Maximum Clamping Voltage           | <p>The maximum voltage between two terminals with the specification standard impulse current.<br/>Applied waveform: 8/20μs</p>    |               |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
| Rated Wattage                      | The maximum average power that can be applied within the specified ambient temperature.  |               |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
| Energy                             | The maximum energy within the varistor voltage change of ±10% when one impulse of 10/1000μs. or 2 msec. is applied.  |               |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
| Withstanding Surge Current         | The maximum current within the varistor voltage change of ±10% with the standard impulse current (8/20μs) applied one time   |               | 0.05% / °C max              |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
| Varistor Voltage Temp. Coefficient | $\frac{V_b \text{ at } 20^{\circ}\text{C} - V_b \text{ at } 70^{\circ}\text{C}}{V_b \text{ at } 20^{\circ}\text{C}} \times \frac{1}{50} \times 100(\% / ^{\circ}\text{C})$   |               |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
| Surge Life                         | <p>The change of Vb shall be measured after the impulse listed below is applied 10,000 times continuously with the interval of ten seconds at room temperature.</p> <table><tr><td rowspan="2">5D Series</td><td>180K to 680K</td><td>10A (8/20μs)</td></tr><tr><td>820K to 751K</td><td>20A (8/20μs)</td></tr><tr><td rowspan="2">7D Series</td><td>180K to 680K</td><td>25A (8/20μs)</td></tr><tr><td>820K to 821K</td><td>50A (8/20μs)</td></tr><tr><td rowspan="2">10D Series</td><td>180K to 680K</td><td>50A (8/20μs)</td></tr><tr><td>820K to 112K</td><td>100A (8/20μs)</td></tr><tr><td rowspan="2">14D Series</td><td>180K to 680K</td><td>75A (8/20μs)</td></tr><tr><td>820K to 182K</td><td>150A (8/20μs)</td></tr><tr><td rowspan="2">20D Series</td><td>180K to 680K</td><td>100A (8/20μs)</td></tr><tr><td>820K to 182K</td><td>200A (8/20μs)</td></tr></table> |               |                             | 5D Series | 180K to 680K | 10A (8/20μs) | 820K to 751K | 20A (8/20μs) | 7D Series | 180K to 680K | 25A (8/20μs) | 820K to 821K | 50A (8/20μs) | 10D Series | 180K to 680K | 50A (8/20μs) | 820K to 112K | 100A (8/20μs) | 14D Series | 180K to 680K | 75A (8/20μs) | 820K to 182K | 150A (8/20μs) | 20D Series | 180K to 680K | 100A (8/20μs) | 820K to 182K | 200A (8/20μs) |
| 5D Series                          | 180K to 680K   | 10A (8/20μs)  |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
|                                    | 820K to 751K   | 20A (8/20μs)  |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
| 7D Series                          | 180K to 680K   | 25A (8/20μs)  |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
|                                    | 820K to 821K   | 50A (8/20μs)  |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
| 10D Series                         | 180K to 680K   | 50A (8/20μs)  |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
|                                    | 820K to 112K   | 100A (8/20μs) |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
| 14D Series                         | 180K to 680K   | 75A (8/20μs)  |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
|                                    | 820K to 182K   | 150A (8/20μs) |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
| 20D Series                         | 180K to 680K   | 100A (8/20μs) |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
|                                    | 820K to 182K   | 200A (8/20μs) |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |
|                                    |  |               |                             |           |              |              |              |              |           |              |              |              |              |            |              |              |              |               |            |              |              |              |               |            |              |               |              |               |

| Part Numbering   | Part Marking   |
|--|--|
| <p><b>07 D XXX K J</b></p>  <p>J: High Surge, without: Standard</p> <p>Tolerance:<br/>K: ±10%, L: ±15%, M: ±20%</p> <p>Varistor Voltage</p> <p>Type:<br/>D: Disk, S: Square</p> <p>Element Diameter</p> |  <p>With a line: High Surge<br/>Without: Standard</p> <p>Logo</p> <p>Product Type</p> <p>UL Accreditation Logo</p> <p>VDE Accreditation Logo</p> |

| Packaging Information |          |                  |                         |
|-----------------------|----------|------------------|-------------------------|
| Part Number           | Quantity | Packaging Option | Packaging Specification |
| 07DXXXXX              | 1000     | Plastic bag      | Bulk Pack               |

# Package Dimensions Unit: mm



| TABLE1    |            |
|-----------|------------|
| Symbol    | Dimensions |
| H(max.)   | 12.0       |
| H1(max.)  | 12.0       |
| L(min.)   | 15.0       |
| L1(min.)  | 15.0       |
| D(max.)   | 9.0        |
| P(±0.8)   | 5.0        |
| T(max.)   | TABLE2     |
| d(±0.05)  | 0.6        |
| d1(±0.05) | 0.6        |

| TABLE2 |         |       |         |
|--------|---------|-------|---------|
| Model  | T(max.) | Model | T(max.) |
| 180K   | 4.50    | 241K  | 4.60    |
| 220K   | 4.60    | 271K  | 4.90    |
| 270K   | 4.70    | 301K  | 5.00    |
| 330K   | 4.90    | 331K  | 5.10    |
| 390K   | 4.80    | 361K  | 5.20    |
| 470K   | 4.90    | 391K  | 5.40    |
| 560K   | 5.00    | 431K  | 5.70    |
| 680K   | 5.20    | 471K  | 6.00    |
| 820K   | 4.10    | 511K  | 6.20    |
| 101K   | 4.30    | 561K  | 6.50    |
| 121K   | 4.50    | 621K  | 7.10    |
| 151K   | 4.80    | 681K  | 7.30    |
| 181K   | 4.30    | 751K  | 7.06    |
| 201K   | 4.40    | 781K  | 7.24    |
| 221K   | 4.50    | 821K  | 7.28    |

If you need full datasheet or more details ,please contact us freely .

SOCAY The main products involve various types of GDTs,Themperature NTc,Mosfets ,IC. diodes,capacitors, resistors and inductors etc components. At present, there are four production bases in China, which are located in Jiangxi, SHENZHEN,Anghui and shijiazhuang. In terms of products research and development, we have obtained a series of product patents under SOCAY's continuous technological innovation. Based on independent research and development capabilities, SOCAY can meet the needs of various customized products



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