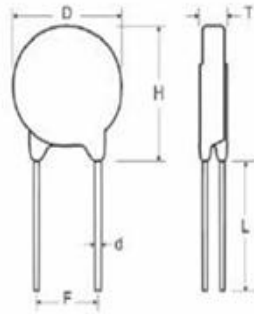




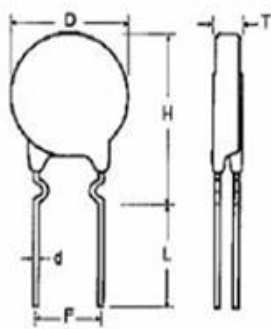


■ Dimensions

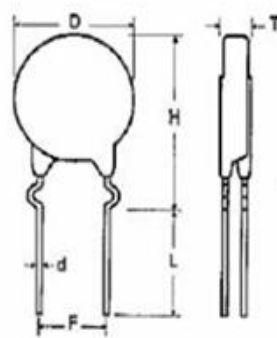
S Type (Straight Lead)



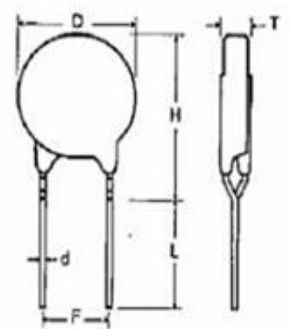
I Type (Inner Crimped Lead)



C Type (Out Crimped Lead)



Y Lead Type (Y Kink Lead)



Unit: mm

| Part No.    | Part No.     | T Max. | D Max. | H Max. |           | L min. | F ±0.8 | d ± 0.05 |
|-------------|--------------|--------|--------|--------|-----------|--------|--------|----------|
|             |              |        |        | S      | I / C / Y |        |        |          |
| VDR-07D180L | VDR-07D180LJ | 4.5    | 9.0    | 11.0   | 14.0      | 20.0   | 5.0    | 0.6      |
| VDR-07D220K | VDR-07D220KJ | 4.6    |        |        |           |        |        |          |
| VDR-07D270K | VDR-07D270KJ | 4.7    |        |        |           |        |        |          |
| VDR-07D330K | VDR-07D330KJ | 4.9    |        |        |           |        |        |          |
| VDR-07D390K | VDR-07D390KJ | 4.8    |        |        |           |        |        |          |
| VDR-07D470K | VDR-07D470KJ | 4.9    |        |        |           |        |        |          |
| VDR-07D560K | VDR-07D560KJ | 5.0    |        |        |           |        |        |          |
| VDR-07D680K | VDR-07D680KJ | 5.2    |        |        |           |        |        |          |
| VDR-07D820K | VDR-07D820KJ | 4.1    |        |        |           |        |        |          |
| VDR-07D101K | VDR-07D101KJ | 4.3    |        |        |           |        |        |          |
| VDR-07D121K | VDR-07D121KJ | 4.5    |        |        |           |        |        |          |
| VDR-07D151K | VDR-07D151KJ | 4.8    |        |        |           |        |        |          |
| VDR-07D181K | VDR-07D181KJ | 4.3    |        |        |           |        |        |          |
| VDR-07D201K | VDR-07D201KJ | 4.4    |        |        |           |        |        |          |
| VDR-07D221K | VDR-07D221KJ | 4.5    |        |        |           |        |        |          |
| VDR-07D241K | VDR-07D241KJ | 4.6    |        |        |           |        |        |          |
| VDR-07D271K | VDR-07D271KJ | 4.9    |        |        |           |        |        |          |
| VDR-07D301K | VDR-07D301KJ | 5.0    |        |        |           |        |        |          |
| VDR-07D331K | VDR-07D331KJ | 5.1    |        |        |           |        |        |          |
| VDR-07D361K | VDR-07D361KJ | 5.2    |        |        |           |        |        |          |
| VDR-07D391K | VDR-07D391KJ | 5.4    |        |        |           |        |        |          |
| VDR-07D431K | VDR-07D431KJ | 5.7    |        |        |           |        |        |          |
| VDR-07D471K | VDR-07D471KJ | 6.0    |        |        |           |        |        |          |
| VDR-07D511K | VDR-07D511KJ | 6.2    |        |        |           |        |        |          |
| VDR-07D561K | VDR-07D561KJ | 6.5    |        |        |           |        |        |          |
| VDR-07D621K | VDR-07D621KJ | 7.1    |        |        |           |        |        |          |
| VDR-07D681K | VDR-07D681KJ | 7.3    |        |        |           |        |        |          |
| VDR-07D751K | VDR-07D751KJ | 7.5    |        |        |           |        |        |          |
| VDR-07D781K | VDR-07D781KJ | 7.7    |        |        |           |        |        |          |
| VDR-07D821K | VDR-07D821KJ | 8.0    |        |        |           |        |        |          |

**ELECTRICAL CHARACTERISTIC**

| Part Number |            | Maximum Allowable Voltage |        | Varistor Voltage | Maximum Voltage |       | Withstanding Surge Current |                 | Energy 10/1000μS |                 | Rated Power | Typical Capacitance (Reference) |
|-------------|------------|---------------------------|--------|------------------|-----------------|-------|----------------------------|-----------------|------------------|-----------------|-------------|---------------------------------|
| Standard    | High Surge | AC (V)                    | DC (V) | V1mA(V)          | IP(A)           | VC(V) | I(A) Standard              | I(A) High Surge | I(A) Standard    | I(A) High Surge | (W)         | @1KHzPF                         |
| 07D180L     | 07D180LJ   | 11                        | 14     | 18(15.0~21.6)    | 2.5             | 36    | 250                        | 500             | 0.9              | 2.0             | 0.02        | 2800                            |
| 07D220K     | 07D220KJ   | 14                        | 18     | 22(19.5~26.0)    | 2.5             | 43    | 250                        | 500             | 1.1              | 2.4             | 0.02        | 2300                            |
| 07D270K     | 07D270KJ   | 17                        | 22     | 27(24~31)        | 2.5             | 53    | 250                        | 500             | 1.4              | 3.0             | 0.02        | 1800                            |
| 07D330K     | 07D330KJ   | 20                        | 26     | 33(29.5~36.5)    | 2.5             | 65    | 250                        | 500             | 1.7              | 3.5             | 0.02        | 1500                            |
| 07D390K     | 07D390KJ   | 25                        | 31     | 39(35~43)        | 2.5             | 77    | 250                        | 500             | 2.1              | 4.0             | 0.02        | 1300                            |
| 07D470K     | 07D470KJ   | 30                        | 38     | 47(42~52)        | 2.5             | 93    | 250                        | 500             | 2.5              | 5.0             | 0.02        | 1100                            |
| 07D560K     | 07D560KJ   | 35                        | 45     | 56(50~62)        | 2.5             | 110   | 250                        | 500             | 3.1              | 6.0             | 0.02        | 890                             |
| 07D680K     | 07D680KJ   | 40                        | 56     | 68(61~75)        | 2.5             | 135   | 250                        | 500             | 3.6              | 7.0             | 0.02        | 740                             |
| 07D820K     | 07D820KJ   | 50                        | 65     | 82(74~90)        | 10              | 135   | 1200                       | 1750            | 5.5              | 10.0            | 0.25        | 600                             |
| 07D101K     | 07D101KJ   | 60                        | 85     | 100(90~110)      | 10              | 165   | 1200                       | 1750            | 6.5              | 12.0            | 0.25        | 500                             |
| 07D121K     | 07D121KJ   | 75                        | 100    | 120(108~132)     | 10              | 200   | 1200                       | 1750            | 7.8              | 12.0            | 0.25        | 420                             |
| 07D151K     | 07D151KJ   | 95                        | 125    | 150(135~165)     | 10              | 250   | 1200                       | 1750            | 9.7              | 13.0            | 0.25        | 330                             |
| 07D181K     | 07D181KJ   | 115                       | 150    | 180(162~198)     | 10              | 300   | 1200                       | 1750            | 11.7             | 16.0            | 0.25        | 280                             |
| 07D201K     | 07D201KJ   | 130                       | 170    | 200(185~225)     | 10              | 330   | 1200                       | 1750            | 13.0             | 17.0            | 0.25        | 250                             |
| 07D221K     | 07D221KJ   | 140                       | 180    | 220(198~242)     | 10              | 360   | 1200                       | 1750            | 14.0             | 19.0            | 0.25        | 230                             |
| 07D241K     | 07D241KJ   | 150                       | 200    | 240(216~264)     | 10              | 395   | 1200                       | 1750            | 15.0             | 21.0            | 0.25        | 210                             |
| 07D271K     | 07D271KJ   | 175                       | 225    | 270(243~297)     | 10              | 455   | 1200                       | 1750            | 18.0             | 24.0            | 0.25        | 185                             |
| 07D301K     | 07D301KJ   | 190                       | 250    | 300(270~330)     | 10              | 505   | 1200                       | 1750            | 20.0             | 26.0            | 0.25        | 165                             |
| 07D331K     | 07D331KJ   | 210                       | 275    | 330(297~363)     | 10              | 550   | 1200                       | 1750            | 23.0             | 28.0            | 0.25        | 150                             |
| 07D361K     | 07D361KJ   | 230                       | 300    | 360(324~396)     | 10              | 595   | 1200                       | 1750            | 25.0             | 32.0            | 0.25        | 140                             |
| 07D391K     | 07D391KJ   | 250                       | 320    | 390(351~429)     | 10              | 650   | 1200                       | 1750            | 25.0             | 35.0            | 0.25        | 130                             |
| 07D431K     | 07D431KJ   | 275                       | 350    | 430(387~473)     | 10              | 710   | 1200                       | 1750            | 28.0             | 40.0            | 0.25        | 115                             |
| 07D471K     | 07D471KJ   | 300                       | 385    | 470(423~517)     | 10              | 775   | 1200                       | 1750            | 30.0             | 42.0            | 0.25        | 105                             |
| 07D511K     | 07D511K    | 320                       | 415    | 510(459~561)     | 10              | 845   | 1200                       | 1750            | 30.0             | 45.0            | 0.25        | 100                             |
| 07D561K     | 07D561KJ   | 350                       | 460    | 560(504~616)     | 10              | 920   | 1200                       | 1750            | 30.0             | 49.0            | 0.25        | 90                              |
| 07D621K     | 07D621KJ   | 385                       | 505    | 620(558~682)     | 10              | 1025  | 1200                       | 1750            | 33.0             | 55.0            | 0.25        | 80                              |
| 07D681K     | 07D681KJ   | 420                       | 560    | 680(612~748)     | 10              | 1120  | 1200                       | 1750            | 33.0             | 60.0            | 0.25        | 75                              |
| 07D751K     | 07D751KJ   | 460                       | 615    | 750(675~825)     | 10              | 1240  | 1200                       | 1750            | 65.0             | 67.2            | 0.25        | 70                              |
| 07D781K     | 07D781KJ   | 485                       | 640    | 780(702~858)     | 10              | 1290  | 1200                       | 1750            | 65.0             | 67.2            | 0.25        | 70                              |
| 07D821K     | 07D821KJ   | 510                       | 670    | 820(738~902)     | 10              | 1355  | 1200                       | 1750            | 65.0             | 70.0            | 0.25        | 60                              |

**The tolerance of varistor voltage between 18V and 68V is more than 10%.**



## Reliability Test

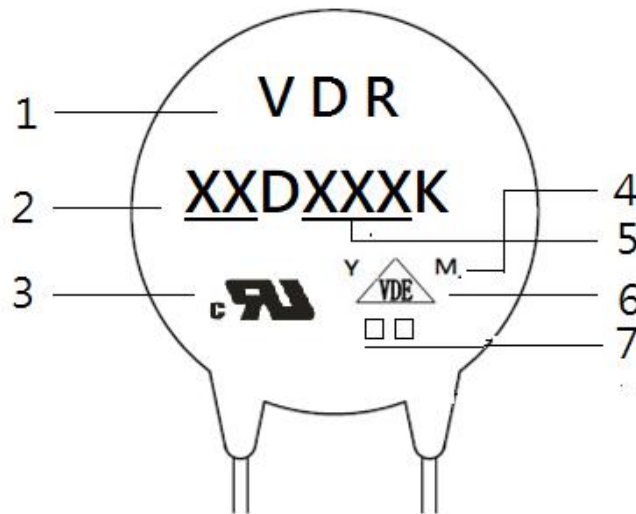
### Mechanical Ratings

| Test Parameter                      | Test Condition / Description  |          |         | Performance Requirements                           |
|-------------------------------------|---|----------|---------|--|
| Terminal Pull Strength              | After gradually applying the load specified below and keeping the unit fixed for ten seconds, the terminal shall be visually examined for any damage.   | Diameter | Loading | No visible damage                                  |
|                                     |   | 0.6mm    | 1.0 Kg  |  |
|                                     |   | 0.8mm    | 1.0 Kg  |  |
|                                     |   | 1.0mm    | 2.0 Kg  |  |
| Terminal Bending Strength           | The unit shall be secured with its terminal kept vertical and the weight specified below be applied in the axial direction. The terminal shall gradually be bent by 90° in one direction, then 90° in the opposite direction, and again back to the original position. The damage of the terminal shall be visually examined. | Diameter | Loading | No visible damage                                  |
|                                     |   | 0.6mm    | 0.5 Kg  |  |
|                                     |   | 0.8mm    | 0.5 Kg  |  |
|                                     |   | 1.0mm    | 1.0 Kg  |  |
| Vibration                           | The Specimen shall be vibrated by its lead wires with a total amplitude of 1.5mm and a varying frequency of 10~55~10HZ(each minutes) for a period of 2 hours respectively in each X,Y and Z directions.   |          |         | No visible damage<br>$\Delta VB/VB\% \leq \pm 5\%$ |
| Soldering-solderability             | After dipping the terminal to depth of approximately 3mm from the specimen in a soldering bath of 260°C for 10±1(D5: 5±1) seconds. Thereafter the terminal shall be visually examined.  |          |         | Terminations shall be uniformly tinned             |
| Soldering-Resistance to Solder Heat | After preheating the specimen, the specimen shall be completely immersed into a soldering bath having a temperature of 260±5°C for 10±1 (D5: 5±1) seconds or iron of 400±5°C for 3±0.5 seconds. There after the change of Vb and mechanical damage shall be examined.   |          |         | No visible damage<br>$\Delta VB/VB\% \leq \pm 5\%$ |

### ENVIRONMENTAL RATINGS

|                          |  |      |           |   |   |
|--------------------------|--|------|-----------|---|---|
| Dry Heat Loading         | The specimen shall be applied continuously the maximum allowable voltage at the specified conditions for specified period and then stored at room temperature and normal humidity over 2 hours. Thereafter, the change of Vb and mechanical damage shall be examined.<br>temp : 125±2°C ; Period : 1000±24hours.                     |      |           | $\Delta VB/VB\% \leq \pm 10\%$                      |   |
| High Temperature Storage | In a drying oven without load.<br>Ambient temp : 125±2°C ; period : 1000±24hours   |      |           | $\Delta VB/VB\% \leq \pm 5\%$                       |   |
| Damp Heat Loading        | The specimen shall be applied continuously the maximum allowable voltage at the specified conditions for specified period and then stored at room temperature and normal humidity over 2 hours. Thereafter, the change of Vb and mechanical damage shall be examined.<br>condition : 40±2°C , 90 to 95%R.H. ; period : 1000±24 hours |      |           | $\Delta VB/VB\% \leq \pm 10\%$                      |   |
| Temperature Cycle        | Condition the specimen to each temperature form step 1 to step 4 in this order for the period shown in the table of specifications. The change of Vb and mechanical damage shall be examined after 2 hours.  | Step | Temp°C    | Period  | No visible damage<br>$\Delta VB/VB\% \leq \pm 10\%$ |
|                          |  | 1    | -40±3°C   | 30 min.   |   |
|                          |  | 2    | Room Temp | 15 min.   |   |
|                          |  | 3    | 85±2°C    | 30 min.   |   |
|                          |  | 4    | Room Temp | 15 min.   |   |
| Surge Lifetime Rating    | 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.   |      |           | No visible damage<br>$\Delta VB/VB\% \leq \pm 10\%$ |   |
| Voltage Proof            | Voltage : 2500VAC Leakage Current ≤ 0.5mA Time : 60 Seconds  |      |           | No Breakdown  |   |

### MARKING CODE



- 1 SongLong Lishang Logo
- 2 Disk Size
- 3 CUL Accreditation Logo
- 4 “Y” & “M” Product Line Code
- 5 Varistor Voltage
- 6 VDE Accreditation Logo
- 7 Energy and frequency of combined wave  
 “J” is High Surge Code, not “J” is Standard Surge  
 “H” is High temperature range, not “H” is Standard

### Packaging specification / bulk packaging quantity

Unit:Pcs

| Dimension       | Part No.     | Bag   | Small Carton | Carton |
|-----------------|--------------|-------|--------------|--------|
| 07D             | 180L to 821K | 1,000 | 10,000       | 20,000 |
| 07D (Short leg) | 180L to 821K | 1,000 | 15,000       | 30,000 |

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