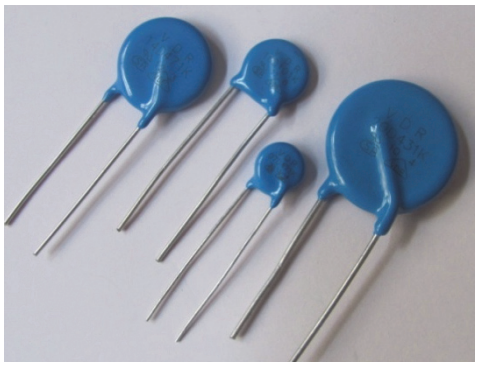
07D Serials



Description

The VDR 07D Series of 7 mm radial leaded varistor devices protects against overvoltage transients such as lightning, power contact and power induction.

Features

- Wide operating AC voltage range 5V to 510V
- DC voltage ratings 6V to 670V
- Fast response to transient over-votage and limited current
- Low clamping ration and no follow-on curent
- Operating temputre range -40℃ to +85℃
- Storage Temperature-40℃ to +125℃

Aplications

- Power supply
- Automotive Eletronics
- Telecommunication Instrument
- Surge Protection Devices
- Motor Drivers
- Relay Drivers

Package Outline Dimension

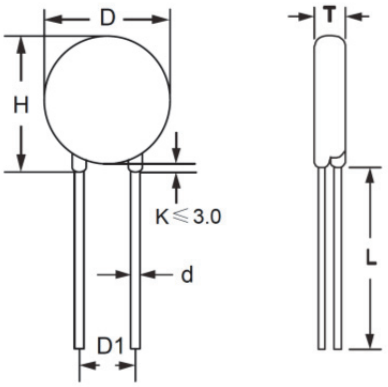


TABLE 1

Unit：mm

Symbol	Dimension
H(max)	12.0
D(max)	9.0
D1	5.0±0.8
d	0.6±0.05
L(min)	20.0

TABLE 2

Unit：mm

Part Number	T(max)	Part Number	T(max)
07D821K(J)	6.9	07D201K(J)	4.4
07D781K(J)	6.7	07D181K(J)	4.3
07D751K(J)	6.5	07D151K(J)	4.8
07D681K(J)	7.3	07D121K(J)	4.5
07D621K(J)	7.1	07D101K(J)	4.3
07D561K(J)	6.5	07D820K(J)	4.1
07D511K(J)	6.2	07D680K(J)	5.2
07D471K(J)	6.0	07D560K(J)	5.0
07D431K(J)	5.7	07D470K(J)	4.9
07D391K(J)	5.4	07D390K(J)	4.8
07D361K(J)	5.2	07D330K(J)	4.9
07D331K(J)	5.1	07D270K(J)	4.7
07D301K(J)	5.0	07D220K(J)	4.6
07D271K(J)	4.9	07D180L(J)	4.5
07D241K(J)	4.6	07D120M(J)	4.6
07D221K(J)	4.5	07D8R0M(J)	4.6

Electrical Character

Part Number		Max Allowable Voltage		Varistor Voltage	Maxim Clamping Voltage	Maxim Energy (10/1000μs (J)		Withstanding Surge Current 8/20μs (A)		Rated Power	Maxim Cap.
Standard	High surge	AC (V)	DC (V)	@ 1mA(V)	@10A (V)	Standard	High surge	Standard	High surge	W	@ 1K HZ (pF)
07D821K	07D821KJ	510	670	820(738-902)	1355	72.0	87.0	1200	1750	0.25	60
07D781K	07D781KJ	485	640	780(702-858)	1290	69.0	83.0	1200	1750	0.25	70
07D751K	07D751KJ	460	615	750(675-825)	1240	67.2	80.0	1200	1750	0.25	70
07D681K	07D681KJ	420	560	680(621-748)	1120	62.5	75.0	1200	1750	0.25	75
07D621K	07D621KJ	385	505	620(558-682)	1025	61.5	68.0	1200	1750	0.25	80
07D561K	07D561KJ	350	460	560(504-616)	920	58.0	61.0	1200	1750	0.25	90
07D511K	07D511KJ	320	415	510(459-561)	845	57.0	58.0	1200	1750	0.25	100
07D471K	07D471KJ	300	385	470(423-517)	775	56.0	57.0	1200	1750	0.25	105
07D431K	07D431KJ	275	350	430(387-473)	710	50.4	51.0	1200	1750	0.25	115
07D391K	07D391KJ	250	320	390(351-429)	650	46.2	47.0	1200	1750	0.25	130
07D361K	07D361KJ	230	300	360(324-396)	595	42.0	43.0	1200	1750	0.25	140
07D331K	07D331KJ	210	275	330(297-363)	550	37.8	38.0	1200	1750	0.25	150
07D301K	07D301KJ	190	250	300(270-330)	500	35.0	36.0	1200	1750	0.25	165
07D271K	07D271KJ	175	225	270(243-297)	455	32.2	33.0	1200	1750	0.25	185
07D241K	07D241KJ	150	200	240(216-264)	395	28.0	30.0	1200	1750	0.25	210
07D221K	07D221KJ	140	180	220(198-242)	360	28.0	29.0	1200	1750	0.25	230
07D201K	07D201KJ	130	170	200(180-220)	330	25.2	27.0	1200	1750	0.25	250
07D181K	07D181KJ	115	150	180(162-198)	300	18.2	22.0	1200	1750	0.25	280
07D151K	07D151KJ	95	125	150(135-165)	250	16.8	17.0	1200	1750	0.25	330
07D121K	07D121KJ	75	100	120(108-132)	200	14.0	14.2	1200	1750	0.25	420
07D101K	07D101KJ	60	85	100(90-110)	165	11.6	12.0	1200	1750	0.25	500
07D820K	07D820KJ	50	65	82(74-90)	135	9.8	10.0	1200	1750	0.25	600
07D680K	07D680KJ	40	56	68(61-75)	135	7.3	7.5	250	500	0.02	740
07D560K	07D560KJ	35	45	56(50-62)	110	6.2	6.5	250	500	0.02	890
07D470K	07D470KJ	30	38	47(42-52)	93	5.0	5.2	250	500	0.02	1100
07D390K	07D390KJ	25	31	39(35-43)	77	4.2	4.6	250	500	0.02	1300
07D330K	07D330KJ	20	26	33(30-36)	65	3.5	4.0	250	500	0.02	1500
07D270K	07D270KJ	17	22	27(24-30)	53	2.8	3.0	250	500	0.02	1800
07D220K	07D220KJ	14	18	22(20-24)	43	2.4	2.8	250	500	0.02	2300
07D180L	07D180LJ	10	14	18(15-21)	38	2.1	2.4	250	500	0.02	2800
07D120M	-	7	9	12(9.6-14.4)	25	1.2	-	250	-	0.02	3000
07D8R0M	-	5	6	8(6.4-9.6)	17	0.8	-	250	-	0.02	3250

Reliability data

<table>
<tr><th>Test</th><th>Test methods/conditions</th><th>Requirement</th></tr>
<tr><td>Max Allowable Voltage</td><td>The recommended maximum sine wave voltage (RMS) or the maximum DC voltage can be applied continuously.</td><td rowspan="5">To meet the specified value</td></tr>
<tr><td>Max Clamping voltage</td><td>The maximum voltage between two terminals with the specified standard impulse current (8/20μs) applied.</td></tr>
<tr><td>Maxim Energy</td><td>The maximum energy within the varistor voltage change of ±10% when one impulse of 10/1000μs or 2ms is applied.</td></tr>
<tr><td>Withstanding Surge Current</td><td>The maximum current within the varistor voltage change of ±10% with the standard impulse current (8/20μS) applied one time.</td></tr>
<tr><td>Rated Power</td><td>The maximum average power that can be applied within the specified ambient temperature.</td></tr>
<tr><td>Temperature Coefficient of Varistor Voltage</td><td>$\frac{Vb\ (@20\,℃) - Vb\ (@70\,℃)}{Vb\ (@20\,℃)} \times \frac{1}{(70-20)} \times 100\%$</td><td><7+ 0.05% / ℃</td></tr>
<tr><td>Surge Life</td><td>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.
<table>
<tr><td rowspan="2">05D Serials</td><td>180K-680K</td><td>10A (8/20μs)</td></tr>
<tr><td>820k-751k</td><td>20A (8/20μs)</td></tr>
<tr><td rowspan="2">07D Serials</td><td>180K-680K</td><td>25A (8/20μs)</td></tr>
<tr><td>820k-821k</td><td>50A (8/20μs)</td></tr>
<tr><td rowspan="2">10D Serials</td><td>180K-680K</td><td>50A (8/20μs)</td></tr>
<tr><td>820k-112k</td><td>100A (8/20μs)</td></tr>
<tr><td rowspan="2">14D Serials</td><td>180K-680K</td><td>75A (8/20μs)</td></tr>
<tr><td>820k-182k</td><td>150A (8/20μs)</td></tr>
<tr><td rowspan="2">20D Serials</td><td>180K-680K</td><td>100A (8/20μs)</td></tr>
<tr><td>820k-182k</td><td>200A (8/20μs)</td></tr>
</table></td><td>$\frac{\Delta Vb}{Vb} \leq 10\%$</td></tr>
</table>

Part Number system