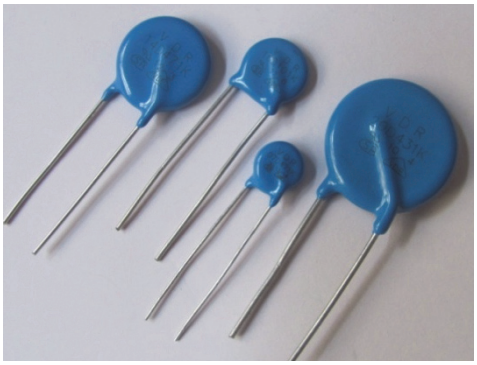
10D Serials



Description

The VDR 10D Series of 10 mm radial leaded varistor devices protects against overvoltage transients such as lightning, power contact and power induction.

Features

- Wide operating AC voltage range 7V to 680V
- DC voltage ratings 9V to 895V
- 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

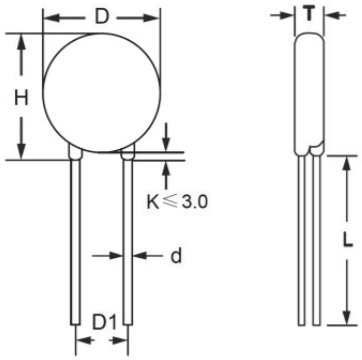


TABLE 1 Unit： mm	
Symbol	**Dimension**
H(max)	16.5
D(max)	12.5
D1	7.5±0.8
d	0.6±0.05
L(min)	20.0
T(max)	TABLE2

TABLE 2 Unit： mm

Part Number	T(max)	Part Number	T(max)
10D112K(J)	9.9	10D241K(J)	5.2
10D102K(J)	9.3	10D221K(J)	5.1
10D911K(J)	8.8	10D201K(J)	5.0
10D821K(J)	8.3	10D181K(J)	4.8
10D781K(J)	8.1	10D151K(J)	5.4
10D751K(J)	8.0	10D121K(J)	5.1
10D681K(J)	7.6	10D101K(J)	4.9
10D621K(J)	7.3	10D820K(J)	4.7
10D561K(J)	7.0	10D680K(J)	5.6
10D511K(J)	6.8	10D560K(J)	5.5
10D471K(J)	6.7	10D470K(J)	5.4
10D431K(J)	6.5	10D390K(J)	5.3
10D391K(J)	6.2	10D330K(J)	5.0
10D361K(J)	6.0	10D270K(J)	4.8
10D331K(J)	5.8	10D220K(J)	4.7
10D301K(J)	5.5	10D180L(J)	4.6
10D271K(J)	5.4	10D120M(J)	4.5

Electrical Character

Part Number		Max Allowable Voltage		Varistor Voltage	Maxim Clamping Voltage	Maxim Energy (10/1000μs (J)		Withstanding Surge Current 8/20 μs (A)		Rated Power	Maxim Cap.
Standard	High surge	AC (V)	DC (V)	@ 0.1mA(V)	@25A (V)	Standard	High surge	Standard	High surge	W	@ 1K HZ (pF)
10D112K	10D112KJ	680	895	1100(990-1200)	1815	133.0	155.0	2500	3500	0.4	90
10D102K	10D102KJ	625	825	1000(900-1100)	1650	133.0	140.0	2500	3500	0.4	100
10D911K	10D911KJ	550	745	910(819-1001)	1500	133.0	134.0	2500	3500	0.4	110
10D821K	10D821KJ	510	670	820(738-902)	1355	125.0	125.0	2500	3500	0.4	120
10D781K	10D781KJ	485	640	780(702-858)	1290	125.0	125.0	2500	3500	0.4	130
10D751K	10D751KJ	460	615	750(675-825)	1240	125.0	125.0	2500	3500	0.4	140
10D681K	10D681KJ	420	560	680(621-748)	1120	102.0	103.0	2500	3500	0.4	150
10D621K	10D621KJ	385	505	620(558-682)	1025	102.0	103.0	2500	3500	0.4	160
10D561K	10D561KJ	350	460	560(504-616)	920	100.0	102.0	2500	3500	0.4	180
10D511K	10D511KJ	320	415	510(459-561)	845	100.0	102.0	2500	3500	0.4	200
10D471K	10D471KJ	300	385	470(423-517)	775	100.0	100.0	2500	3500	0.4	210
10D431K	10D431KJ	275	350	430(387-473)	710	88.2	89.0	2500	3500	0.4	230
10D391K	10D391KJ	250	320	390(351-429)	650	81.2	82.0	2500	3500	0.4	260
10D361K	10D361KJ	230	300	360(324-396)	595	74.2	75.0	2500	3500	0.4	280
10D331K	10D331KJ	210	275	330(297-363)	550	68.6	69.0	2500	3500	0.4	300
10D301K	10D301KJ	190	250	300(270-330)	500	63.0	63.5	2500	3500	0.4	330
10D271K	10D271KJ	175	225	270(243-297)	455	57.4	58.0	2500	3500	0.4	370
10D241K	10D241KJ	150	200	240(216-264)	395	50.4	51.0	2500	3500	0.4	420
10D221K	10D221KJ	140	180	220(198-242)	360	46.2	46.5	2500	3500	0.4	450
10D201K	10D201KJ	130	170	200(180-220)	330	42.0	42.5	2500	3500	0.4	500
10D181K	10D181KJ	115	150	180(162-198)	300	30.8	38.0	2500	3500	0.4	560
10D151K	10D151KJ	95	125	150(135-165)	250	25.2	26.0	2500	3500	0.4	670
10D121K	10D121KJ	75	100	120(108-132)	200	21.0	21.5	2500	3500	0.4	830
10D101K	10D101KJ	60	85	100(90-110)	165	18.2	18.5	2500	3500	0.4	1000
10D820K	10D820KJ	50	65	82(74-90)	135	16.8	17.0	2500	3500	0.4	1200
10D680K	10D680KJ	40	56	68(61-75)	135	15.4	16.0	500	1000	0.05	1500
10D560K	10D560KJ	35	45	56(50-62)	110	12.9	13.0	500	1000	0.05	1800
10D470K	10D470KJ	30	38	47(42-52)	93	10.8	11.0	500	1000	0.05	2100
10D390K	10D390KJ	25	31	39(35-43)	77	9.1	9.5	500	1000	0.05	2400
10D330K	10D330KJ	20	26	33(30-36)	65	7.4	8.0	500	1000	0.05	3000
10D270K	10D270KJ	17	22	27(24-30)	53	6.0	6.5	500	1000	0.05	3700
10D220K	10D220KJ	14	18	22(20-24)	43	4.5	5.0	500	1000	0.05	4500
10D180L	10D180LJ	10	14	18(15-21)	38	2.8	3.0	500	1000	0.05	5600
10D120M	-	7	9	12(9.6-14.4)	25	1.8	-	500	1000	0.05	6300

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>$\frac{\Delta Vb}{Vb} \le 10\%$</td></tr>
</table>

Part Number system