14D180K~182KJ Series

Metal Oxide Varistors

Applications

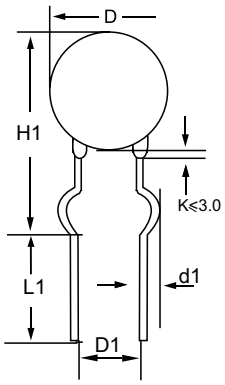
- Transistor, diode, IC, thyristor or triac semiconductor protection.
- Surge protection in consumer electronics.
- Surge protection in industrial electronics.
- Surge protection in electronic home appliances, gas and petroleum appliances.
- Relay and electromagnetic valve surge absorption.

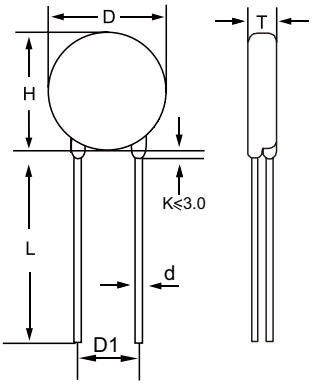


Features

- Wide operating voltage (V1mA) range from 8V to 1800V.
- Fast responding to transient over-voltage.
- Large absorbing transient energy capability.
- Low clamping ratio and no following-on current.

Package Dimensions





Umit:mm

TABLE 1

Symbol	Dimensions
H(max.)	20.0
H1(max.)	21.0
L(min.)	20.0
L1(min.)	15.0
D(max.)	16.5
D1(±0.8)	7.5
T(max.)	TABLE 2
d(±0.05)	0.8
d1(±0.4)	1.4

TABLE 2

Model	T(max.)	Model	T(max.)
180K	4.6	301K	5.8
220K	4.7	331K	6.0
270K	4.8	361K	6.2
330K	5.0	391K	6.5
390K	5.3	431K	6.7
470K	5.4	471K	6.8
560K	5.5	511K	7.0
680K	5.6	561K	7.3
820K	4.7	621K	7.6
101K	4.9	681K	8.0
121K	5.1	751K	8.1
151K	5.4	781K	8.3
181K	4.8	821K	8.8
201K	5.0	911K	9.3
221K	5.1	102K	9.9
241K	5.2	112K	10.4
271K	5.4	182K	13.0
301k	5.5	-	-

Electrical Characteristic

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_{AC}(V)	V_{DC}(V)	V_{1mA}(V)	I_P(A)	V_C(V)	I(A) Standard	I(A) High Surge	(J) Standard	(J) High Surge	(W)	@1KHz(pf)
14D180K	14D180KJ	11	14	18(15~21.6)	10	36	1000	2000	4.0	7.0	0.1	11100
14D220K	14D220KJ	14	18	22(19.5~26)	10	43	1000	2000	5.0	8.0	0.1	9100
14D270K	14D270KJ	17	22	27(24~30)	10	53	1000	2000	6.0	10.0	0.1	7400
14D330K	14D330KJ	20	26	33(29.5~36.5)	10	66	1000	2000	7.5	12.0	0.1	6100
14D390K	14D390KJ	25	31	39(35~43)	10	77	1000	2000	8.6	13.0	0.1	5100
14D470K	14D470KJ	30	38	47(42~54)	10	93	1000	2000	10.0	17.0	0.1	4300
14D560K	14D560KJ	35	45	56(50~62)	10	100	1000	2000	11.0	20.0	0.1	3600
14D680K	14D680KJ	40	56	68(61~75)	10	135	1000	2000	14.0	24.0	0.1	2900
14D820K	14D820KJ	50	65	82(74~90)	50	135	4500	6000	22.0	27.0	0.6	2400
14D101K	14D101KJ	60	85	100(90~110)	50	165	4500	6000	28.0	33.0	0.6	2000
14D121K	14D121KJ	75	100	120(108~132)	50	200	4500	6000	32.0	40.0	0.6	1700
14D151K	14D151KJ	95	125	150(135~165)	50	250	4500	6000	40.0	53.0	0.6	1300
14D181K	14D181KJ	115	150	180(162~198)	50	300	4500	6000	50.0	60.0	0.6	1100
14D201K	14D201KJ	130	170	200(180~220)	50	340	4500	6000	57.0	70.0	0.6	1000
14D221K	14D221KJ	140	180	220(198~242)	50	360	4500	6000	60.0	78.0	0.6	900
14D241K	14D241KJ	150	200	240(216~264)	50	395	4500	6000	63.0	84.0	0.6	830
14D271K	14D271KJ	175	225	270(243~297)	50	455	4500	6000	70.0	99.0	0.6	740
14D301K	14D301KJ	190	250	300(270~330)	50	500	4500	6000	77.0	108	0.6	670
14D331K	14D331KJ	210	275	330(297~363)	50	550	4500	6000	85.0	115	0.6	610
14D361K	14D361KJ	230	300	360(324~396)	50	595	4500	6000	93.0	130	0.6	560
14D391K	14D391KJ	250	320	390(351~429)	50	650	4500	6000	100	140	0.6	510
14D431K	14D431KJ	275	350	430(387~473)	50	710	4500	6000	115	155	0.6	460
14D471K	14D471KJ	300	385	470(423~517)	50	775	4500	6000	125	175	0.6	430
14D511K	14D511KJ	320	415	510(459~561)	50	845	4500	6000	125	180	0.6	390
14D561K	14D561KJ	350	460	560(504~616)	50	925	4500	6000	125	185	0.6	360
14D621K	14D621KJ	385	505	620(558~682)	50	1025	4500	6000	125	190	0.6	320
14D681K	14D681KJ	420	560	680(612~748)	50	1120	4500	6000	130	200	0.6	290
14D751K	14D751KJ	460	615	750(675~825)	50	1240	4500	6000	143	210	0.6	270
14D781K	14D781KJ	485	640	780(702~858)	50	1290	4500	6000	148	220	0.6	260
14D821K	14D821KJ	510	670	820(738~902)	50	1355	4500	6000	157	235	0.6	240
14D911K	14D911KJ	550	745	910(819~1001)	50	1500	4500	6000	175	255	0.6	220
14D102K	14D102KJ	625	825	1000(900~1100)	50	1650	4500	6000	190	280	0.6	200
14D112K	14D112KJ	681	895	1100(990~1210)	50	1815	4500	6000	213	310	0.6	180
14D122K	14D122KJ	750	990	1200(1080_1320)	50	1980	4500	6000	213	310	0.6	150
14D182K	14D182KJ	1000	1465	1800(1620~1980)	50	2970	4500	6000	250	335	0.6	130

Electrical Rating

<table>
<tr><th>Item</th><th>Test Condition / Description</th><th>Requirement</th></tr>
<tr><td>Varistor Voltage</td><td>The voltage between two terminals with the specified measuring current 1mA.DC applied is call Vb.</td><td rowspan="4">To meet the specified value</td></tr>
<tr><td>Maximum Allowable Voltage</td><td>The recommended maximum sine wave voltage (RMS) or the maximum DC voltage can be applied continuously.</td></tr>
<tr><td>Rated Wattaget</td><td>The maximum average power that can be applied within the specified ambient temperature.</td></tr>
<tr><td>IEnergy</td><td>The maximum energy within the varistor voltage change of ±10% when one impulse of10/1000μsec. or 2 msec. 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 (8/20μsec.) applied one time.</td><td rowspan="2">$\frac{\Delta Vb}{Vb} \leqslant \pm 10\%$</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">5D series</td><td>180K to 680K</td><td>10A (8/20μsec.)</td></tr>
<tr><td>820K to 751K</td><td>20A (8/20μsec.)</td></tr>
<tr><td rowspan="2">7Dseries</td><td>180K to 680K</td><td>25A (8/20μsec.)</td></tr>
<tr><td>820K to 821K</td><td>50A (8/20μsec.)</td></tr>
<tr><td rowspan="2">10D series</td><td>180K to 680K</td><td>50A (8/20μsec.)</td></tr>
<tr><td>820K to 182K</td><td>100A (8/20μsec.)</td></tr>
<tr><td rowspan="2">14D series</td><td>180K to 680K</td><td>75A (8/20μsec.)</td></tr>
<tr><td>820K to 182K</td><td>150A (8/20μsec.)</td></tr>
<tr><td rowspan="2">20D series</td><td>180K to 680K</td><td>100A (8/20μsec.)</td></tr>
<tr><td>820K to 182K</td><td>200A (8/20μsec.)</td></tr>
</table></td></tr>
</table>

General Characteristics

No Radioactive Material
Storage Temperature: -55ºC to +125ºC
Operating Temperature: -55ºC to +125ºC
Body: Nickel Plated
Leads: Surface-mount, Axial Devices: Tin Plated
Devices with No Leads: Nickel Plated

Packaging Information

Part Number	Component package	Quantity	Packaging Option	Packaging Specification
14D	14.0	250	BOX	

Part Numbering System

Example Part Number: 14D471KJ

14D=Dise Diameter
471 =$V_{1mA(V)}$ of 470V
K = Tolerance k:+_10%
J= High Surge

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