

Features

- Wide operating voltage (V1mA) range from 18V to 820V
- Fast responding to transient over-voltage.
- Large absorbing transient energy capability.
- Low clamping ratio and no following-on current.

General Information

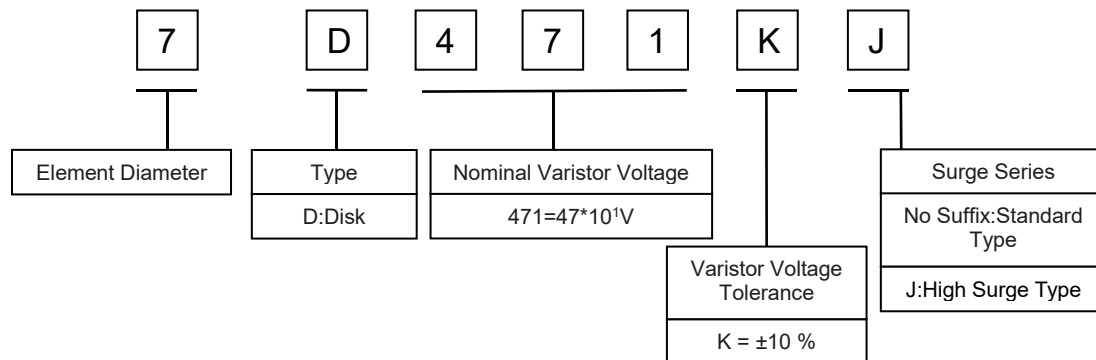
- Surge protection in consumer electronics
- Surge protection in industrial electronics
- Relay and electromagnetic valve surge absorption
- Transistor, diode, IC, thyristor or triac semiconductor protection
- Surge protection in electronic home appliances, gas and petroleum appliances
- Agency: CUL(E479668),CQC(22001337353),
TUV(J50541477)



General Characteristics

- Body: Nickel Plated
- Devices with No Leads: Nickel Plated
- Operating Temperature: -40°C to +85°C
- Storage Temperature: -40 °C to +125°C

Part Number Code



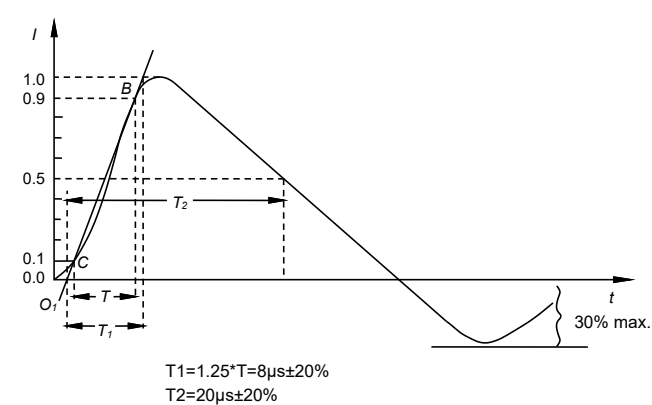
Agency Information

Agency Information		Agency File Number
	CUL	E479668
	CQC	22001337353
	TUV	J50541477

Electrical Characteristics

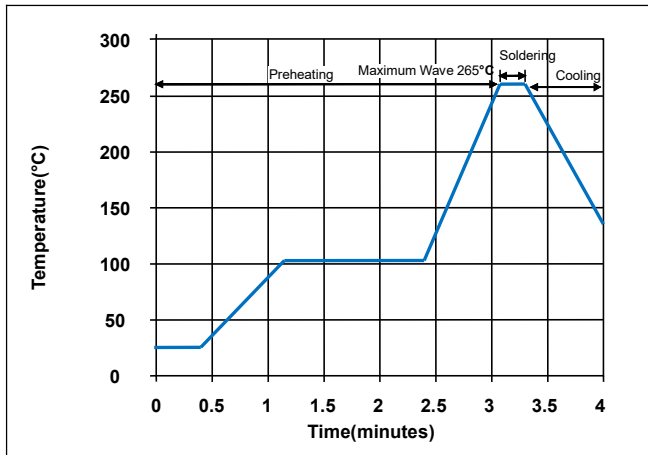
Type Number		Varistor Voltage	Max. Allowable Voltage		Max. Energy (10/1000μs)		Max. Clamping Voltage (8/20μs)		Withstanding Surge Current (8/20μs)		Rated Power	Typical Capacitance (Reference)
Standard	High Surge	V _{1mA} (V)	V _{AC} (V)	V _{DC} (V)	(J) Standard	(J) High Surge	I _P (A)	V _C (V)	I(A) Standard	I(A) High Surge	(W)	@1KHz(pf)
7D180K	/	15~22	11	14	1.3	/	2.5	38	250	/	0.02	3500
7D220K	/	20~26	14	18	1.7	/	2.5	43	250	/	0.02	2800
7D270K	/	24.3~31.1	17	22	2.0	/	2.5	53	250	/	0.02	2200
7D330K	/	29.7~37.9	20	26	2.4	/	2.5	65	250	/	0.02	1800
7D390K	/	35.2~44.8	25	31	2.8	/	2.5	77	250	/	0.02	1450
7D470K	/	43~53	30	38	3.5	/	2.5	93	250	/	0.02	1150
7D560K	/	51~63	35	45	4.1	/	2.5	110	250	/	0.02	1050
7D680K	/	62~76	40	56	5.0	/	2.5	135	250	/	0.02	970
7D820K	7D820KJ	74~90	50	65	6.0	8.4	10	135	1200	1750	0.25	930
7D101K	7D101KJ	90~110	60	85	7.4	10	10	165	1200	1750	0.25	860
7D121K	7D121KJ	108~132	75	100	8.0	12	10	200	1200	1750	0.25	670
7D151K	7D151KJ	135~165	95	125	10	15	10	250	1200	1750	0.25	490
7D181K	7D181KJ	162~198	115	150	12	19	10	300	1200	1750	0.25	330
7D201K	7D201KJ	180~220	130	170	14	21	10	340	1200	1750	0.25	240
7D221K	7D221KJ	198~242	140	180	15	23	10	360	1200	1750	0.25	190
7D241K	7D241KJ	216~264	150	200	16	25	10	395	1200	1750	0.25	165
7D271K	7D271KJ	243~297	175	225	19	28	10	455	1200	1750	0.25	150
7D301K	7D301KJ	270~330	195	250	22	32	10	505	1200	1750	0.25	135
7D331K	7D331KJ	297~363	210	275	24	34	10	550	1200	1750	0.25	130
7D361K	7D361KJ	324~396	230	300	26	37	10	595	1200	1750	0.25	125
7D391K	7D391KJ	351~429	250	320	26	40	10	650	1200	1750	0.25	105
7D431K	7D431KJ	387~473	275	350	29	46	10	710	1200	1750	0.25	100
7D471K	7D471KJ	423~517	300	385	31	49	10	775	1200	1750	0.25	90
7D511K	7D511KJ	459~561	320	418	34	54	10	842	1200	1750	0.25	80
7D561K	7D561KJ	504~616	350	460	34	55	10	920	1200	1750	0.25	75
7D621K	7D621KJ	558~682	385	505	36	59	10	1025	1200	1750	0.25	70
7D681K	7D681KJ	612~748	420	560	36	62	10	1120	1200	1750	0.25	65
7D751K	7D751KJ	675~825	460	615	39	66	10	1240	1200	1750	0.25	61
7D781K	7D781KJ	702~858	485	640	41	68	10	1290	1200	1750	0.25	54
7D821K	7D821KJ	738~902	510	670	43	71	10	1355	1200	1750	0.25	48

Electrical Ratings

Items	Test Condition/Description	Requirement				
Varistor Voltage	The voltage between two terminals with the specified measuring current 1mA.DC applied is called V _b .	To meet the Specified value				
Maximum Allowable Voltage	The recommended maximum sine wave voltage (RMS) or the Maximum DC voltage can be applied continuously.					
Maximum Clamping Voltage	The maximum voltage between two terminals with the specification standard impulse current. Applied waveform: 8/20μs  $T_1 = 1.25 \cdot T = 8\mu s \pm 20\%$ $T_2 = 20\mu s \pm 20\%$					
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 $\pm 10\%$ when one impulse of 10/1000μs or 2ms is applied.					
Withstanding Surge Current	The maximum current within the varistor voltage change of $\pm 10\%$ with the standard impulse current (8/20μs) applied one time.	$\frac{\Delta V_b}{V_b} \leq \pm 10\%$				
Surge Life	The change of V_b shall be measured after the impulse listed below which is applied 10,000 times continuously with the interval of ten seconds at room temperature. <table border="1" data-bbox="523 1265 1169 1357"> <tr> <td rowspan="2">7Φ series</td><td>180K to 680K</td><td>15A (8/20μs)</td></tr> <tr> <td>820K to 821K</td><td>50A (8/20μs)</td></tr> </table>		7Φ series	180K to 680K	15A (8/20μs)	820K to 821K
7Φ series	180K to 680K	15A (8/20μs)				
	820K to 821K	50A (8/20μs)				

Soldering Recommendation

Wave Lead Free Soldering Recommendation



Item	Conditions
Peak Temperature	265°C
Dipping Time	10 seconds (max.)
Soldering	1 time

Recommendation Reworking Conditions with Soldering Iron

Item	Conditions
Temperature of Soldering Iron-tip	360°C (max.)
Soldering Time	3 seconds (max.)
Distance from Varistor	2mm (min.)

Dimensions

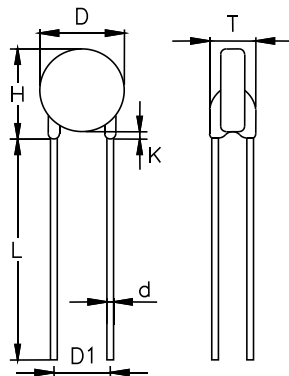
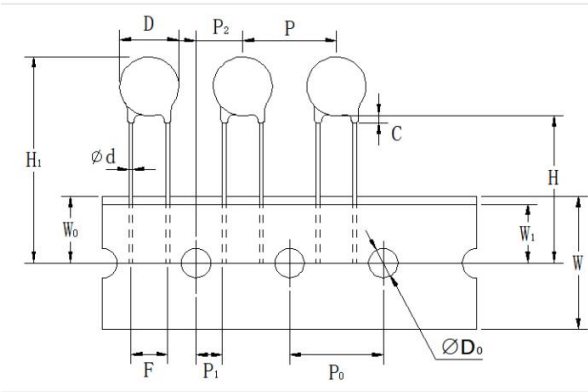


TABLE 1		
Symbol	Millimeters	Inches
H(max.)	12.0	0.472
L(min.)	15.0	0.591
D(max.)	9.0	0.354
D1(±1.0)	5.0	0.197
K(max.)	2.0	0.079
T(max.)	TABLE 2	
d(±0.1)	0.6	0.024
Packaging Quantity: 1000pcs/bag		

TABLE 2---T(max.)

Model	Millimeters	Inches	Model	Millimeters	Inches
18V~39V	3.9	0.154	330V~390V	4.9	0.193
47V~68V	4.4	0.173	430V~560V	5.7	0.224
82V~150V	3.9	0.154	620V~780V	6.5	0.256
180V~270V	4.3	0.169	820V	6.8	0.268



Type Number	
7D	
Symbol	
P±1.0	12.7
P0±1.0	12.7
P1±0.7	3.6
P2±1.3	6.35
H±1.3	20.0
H1 max	30.0
W±1.0	18.0
W0 max	9.0
W1±0.5	8.0
C max	2.0
D max	9.0
ØD0±0.3	4.0
Ød±0.1	0.55
F±1.0	5.0



系列 Series	压敏电压 Varistor Voltage	编带包装数量 Taping Packaging Quantity	
		数量 (K) /内盒 QTY (k) /Linner Box	数量 (K) /箱 QTY (k) /Carton
7D	180K~471K	1.5	15
	511K~821K	1	10