Metal Oxide Varistors-Z2 Series (High Energy) Data Sheet

Feature

■Varistor voltage range from 430V to 1100V

■Operating Temperature: -40℃~ +105℃

■Storage Temperature: 15℃~35℃

Applications

■The over-voltage protection for transistors, IC, SCR and semiconductor switching components and a variety of electronic, electrical equipment

■Surge absorption and over-voltage protection for household appliances

■Industrial electrical surge absorption

■Electrostatic discharge and noise signal cancellation

■Surge absorption of relays and solenoid valves

■Over-voltage protection for leakage switch

■The lightning protection and over-voltage protection for Telephone program-controlled switches and communications equipment

■7D is mainly for 2KV surge products, and 10D is mainly for 4KV surge products.

Applicable Standard

Approval		Organization	Safety Standards	Certificate No.
China	CQC	CQC	GB/T10193 GB/T10194 GB 4943.1-2022; IEC 61051-2:1991 +Amd1:2009	7D: CQC19001213190 10D: CQC19001213188
USA Canada	c UL us	UL/cUL	UL1449	E330837
Germany	VDE REG C559	VDE	IEC61051 IEC60950-1:2013 IEC62368-1:2018/G.8.1	40023049

Part numbering on request.

Electrical Characteristics

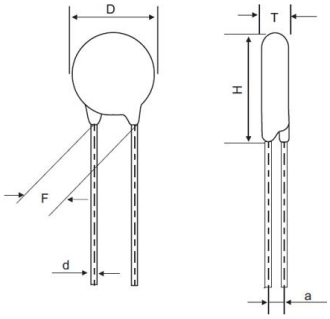
7D-Z2 Series

Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Peak Current Rating(8/20μs)		Maximum Energy (10/1000μs)	Rated Power	Typical Capacitance (Reference)
	AC_{rms} (V)	DC_{rms} (V)	V_{1mA} (V)	VC (V)	IP (A)	1 pulse (A)	2 pulse (A)	(J)	(W)	1KHz (pF)
STE-07D431KZ2	275	350	430(387-473)	710	10	1750	1200	46.0	0.25	120
STE-07D471KZ2	300	385	470(423-517)	775	10	1750	1200	49.0	0.25	100
STE-07D511KZ2	320	415	510(459-561)	845	10	1750	1200	54.0	0.25	90
STE-07D561KZ2	350	460	560(504-616)	925	10	1750	1200	56.0	0.25	90
STE-07D621KZ2	385	505	620(558-682)	1025	10	1750	1200	59.0	0.25	80
STE-07D681KZ2	420	560	680(612-748)	1120	10	1750	1200	62.0	0.25	75
STE-07D821KZ2	510	670	820(738-902)	1355	10	1750	1200	73.0	0.25	60

10D-Z2 Series

Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Peak Current Rating(8/20μs)		Maximum Energy (10/1000μs)	Rated Power	Typical Capacitance (Reference)
	AC_{rms} (V)	DC_{rms} (V)	V_{1mA} (V)	VC (V)	IP (A)	1 pulse (A)	2 pulse (A)	(J)	(W)	1KHz (pF)
STE-10D431KZ2	275	350	430(387-473)	710	25	3500	2500	80	0.4	270
STE-10D471KZ2	300	385	470(423-517)	775	25	3500	2500	85	0.4	230
STE-10D511KZ2	320	415	510(459-561)	845	25	3500	2500	92	0.4	210
STE-10D561KZ2	350	460	560(504-616)	925	25	3500	2500	92	0.4	180
STE-10D621KZ2	385	505	620(558-682)	1025	25	3500	2500	95	0.4	190
STE-10D681KZ2	420	560	680(612-748)	1120	25	3500	2500	98	0.4	170
STE-10D751KZ2	460	615	750(675-825)	1240	25	3500	2500	100	0.4	160
STE-10D781KZ2	485	640	780(702-858)	1290	25	3500	2500	105	0.4	125
STE-10D821KZ2	510	670	820(738-902)	1355	25	3500	2500	110	0.4	140
STE-10D911KZ2	550	745	910(819-1001)	1500	25	3500	2500	130	0.4	120
STE-10D102KZ2	625	825	1000(900-1100)	1650	25	3500	2500	140	0.4	110
STE-10D112KZ2	680	895	1100(990-1210)	1815	25	3500	2500	155	0.4	90

Dimensions (mm) and Approval



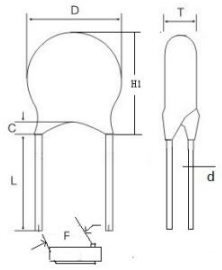
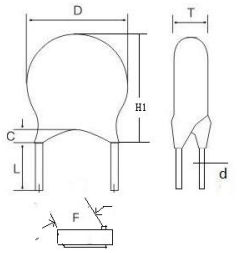
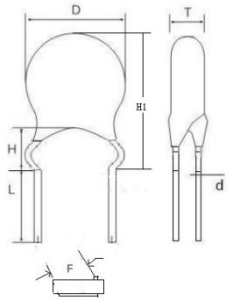
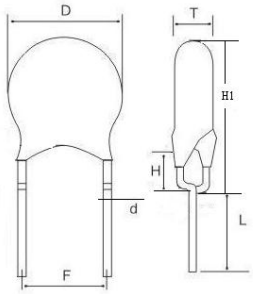
07D-Z2 Series

Part No.	Size (mm)				Approval			
	D Max.	T Max.	F±0.5	d±0.05	CQC	VDE	UL (USA)	cUL (Canada)
STE-07D431KZ2	9.0	5.0	5.0	0.5	√	√	√	√
STE-07D471KZ2	9.0	5.5	5.0	0.5	√	√	√	√
STE-07D511KZ2	9.0	5.5	5.0	0.5	√	√	√	√
STE-07D561KZ2	9.0	6.0	5.0	0.5	√	√	√	√
STE-07D621KZ2	9.0	6.0	5.0	0.5	√	√	√	√
STE-07D681KZ2	9.0	6.5	5.0	0.5	√	√	√	√
STE-07D821KZ2	9.0	7.0	5.0	0.5	√			

10D-Z2 Series

Part No.	Size (mm)				Approval			
	D Max.	T Max.	F±0.5	d±0.05	CQC	VDE	UL (USA)	cUL (Canada)
STE-10D431KZ2	12.5	5.5	7.5	0.7	√	√	√	√
STE-10D471KZ2	12.5	6.0	7.5	0.7	√	√	√	√
STE-10D511KZ2	12.5	6.0	7.5	0.7	√	√	√	√
STE-10D561KZ2	12.5	6.5	7.5	0.7	√	√	√	√
STE-10D621KZ2	12.5	6.5	7.5	0.7	√	√	√	√
STE-10D681KZ2	12.5	7.0	7.5	0.7	√	√	√	√
STE-10D751KZ2	12.5	7.0	7.5	0.7	√	√	√	√
STE-10D781KZ2	12.5	7.5	7.5	0.7			√	√
STE-10D821KZ2	12.5	7.5	7.5	0.7	√	√	√	√
STE-10D911KZ2	12.5	8.0	7.5	0.7	√	√	√	√
STE-10D102KZ2	12.5	8.5	7.5	0.7	√	√	√	√
STE-10D112KZ2	12.5	9.0	7.5	0.7	√		√	√

Lead Configuration

Lead Style	Drawing	Lead Length L (mm)	Coating Lead Length C (mm)	Height H (mm)
Long Straight		16.0 min	3.0 Max	/
Short Straight		①[2.5≤L＜6.0]+/-0.5; ②[6.0≤L≤10]+/-1.0	3.0 Max	/
Outside Crimped		①[2.5≤L＜6.0]+/-0.5; ②[6.0≤L≤10]+/-1.0	Not exceed the bend point	5.5mm Max
Vertical Crimped		①[2.5≤L＜6.0]+/-0.5; ②[6.0≤L≤10]+/-1.0	Not exceed the bend point	4.5mm Max

Taping And Dimensions (mm)

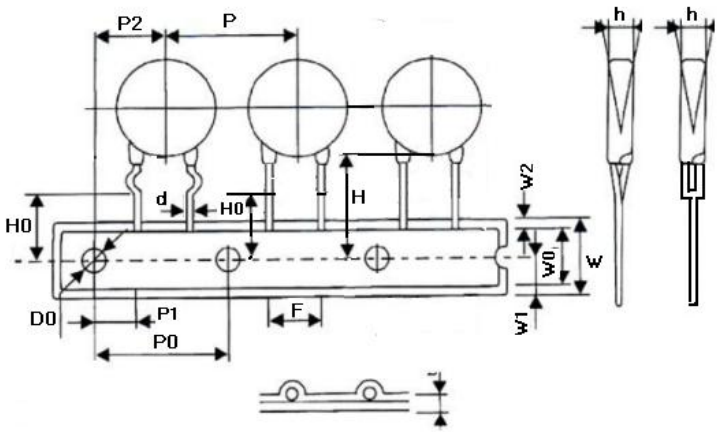
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<tr><th rowspan="2">Figure</th><th colspan="2">Fig.1</th><th colspan="2">Fig.2</th></tr>
<tr><th>Symbol</th><th colspan="2">P=5.0</th><th colspan="2">P=7.5</th></tr>
<tr><td rowspan="13">

Fig.1 (P=5.0)

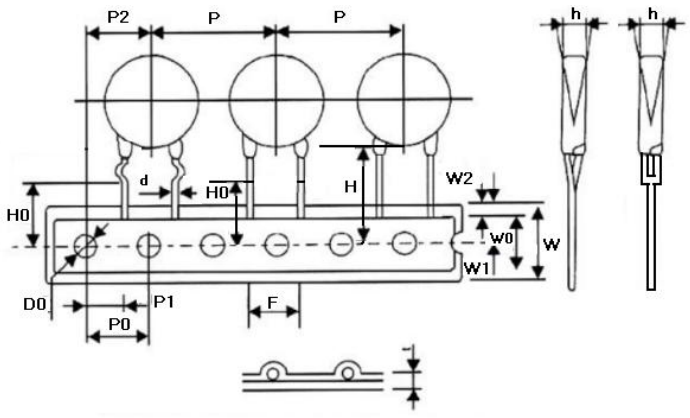
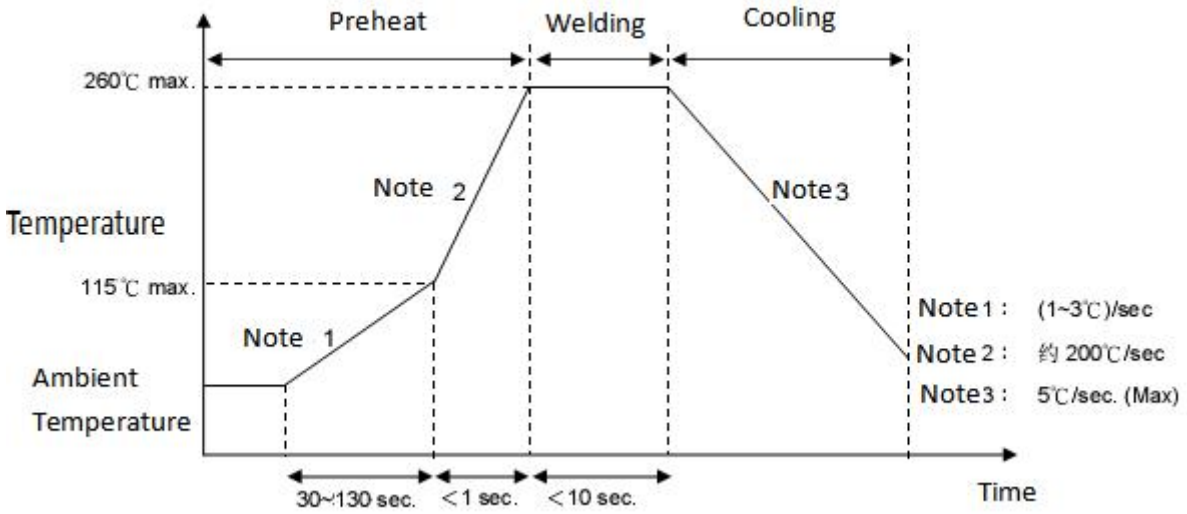


Fig.2 (P=7.5)</td><td>Po</td><td colspan="2">12.7±0.3</td><td colspan="2">12.7±0.3</td></tr>
<tr><td>P</td><td colspan="2">12.7±1.0</td><td colspan="2">25.4±1.0</td></tr>
<tr><td>P1</td><td colspan="2">3.85±0.7</td><td colspan="2">8.95±0.7</td></tr>
<tr><td>P2</td><td colspan="2">6.35±1.3</td><td colspan="2">12.7±1.3</td></tr>
<tr><td>F</td><td colspan="2">5±0.5</td><td colspan="2">7.5±0.5</td></tr>
<tr><td>Δh</td><td colspan="2">0±2.0</td><td colspan="2">0±2.0</td></tr>
<tr><td>W</td><td colspan="2">18.0+1.5/-1.0</td><td colspan="2">18.0 +1.5/-1.0</td></tr>
<tr><td>Wo</td><td colspan="2">10.5 Max</td><td colspan="2">10.5 Max</td></tr>
<tr><td>W1</td><td colspan="2">9.0+0.75/-0.5</td><td colspan="2">9.0+0.75/-0.5</td></tr>
<tr><td>W2</td><td colspan="2">3.0 Max</td><td colspan="2">3.0 Max</td></tr>
<tr><td>Do</td><td colspan="2">4.0±0.2</td><td colspan="2">4.0±0.2</td></tr>
<tr><td>H</td><td colspan="2">20+1.5/-1.0</td><td colspan="2">20+1.5/-1.0</td></tr>
<tr><td>Ho</td><td colspan="2">16.5&17.0&19.0
+1.5/-1.0</td><td colspan="2">16.5&17.0&19.0
+1.5/-1.0</td></tr>
<tr><td rowspan="2">L</td><td>Straight Lead</td><td>Crimped Lead</td><td>Straight Lead</td><td>Crimped Lead</td></tr>
<tr><td>11.0 Max</td><td>9.0 Max</td><td>11.0 Max</td><td>9.0 Max</td></tr>
<tr><td>t1</td><td colspan="2">0.5±0.2</td><td colspan="2">0.5±0.2</td></tr>
<tr><td>t2</td><td colspan="2">1.7 Max</td><td colspan="2">1.7 Max</td></tr>
</table>

Soldering Condition

Wave Soldering Graph



Iron Soldering Condition

Item	Condition
Temperature of soldering copper bit	350℃（max.）
Soldering duration	3sec（max.）
Space between soldering position and coating layer	2mm（min.）

Storage Conditions

- Storage Temperature: ≤35℃.
- Relative Humidity: ≤70% RH.
- Keep away from corrosive atmosphere and sunlight.
- Shelf Life: No more than 12 months. (from the date on the packaging).