

## Metal Oxide Varistors (MOV) Data Sheet

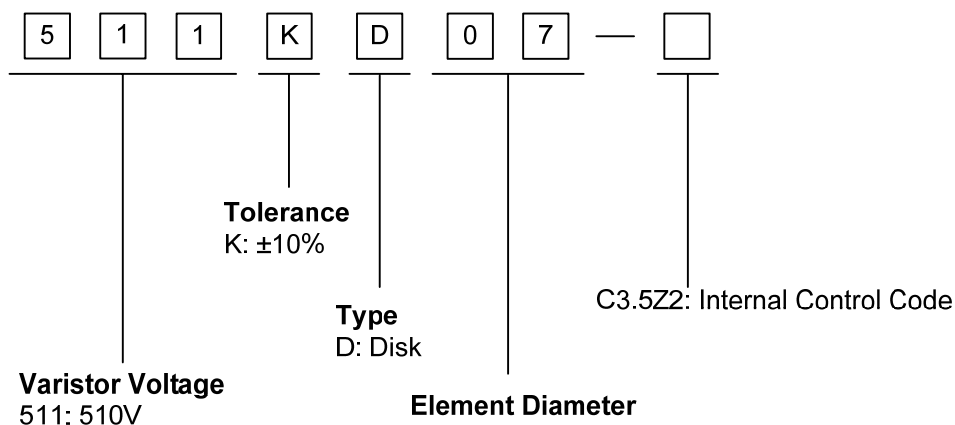
### Features

- Wide operating voltage ( $V_{1mA}$ ) range
- Fast responding to transient over-voltage
- Large absorbing transient energy capability
- Low clamping ratio and no follow-on current
- Meets MSL level 1, per J-STD-020
- Operating Temperature:  $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
- Storage Temperature:  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$
- Safety certification: UL: E327997  
CSA: 246579  
VDE: 40027827

### 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

### Part Number Code



**Dimensions**

	Symbol	Dimension (mm)
	H	7.5~12.0
	L(±0.5)	3.5
	D	7.0~9.0
	F(±0.8)	5.0
	T	2.9~6.2
	d(±0.05)	0.6
	e(±0.8)	3.2

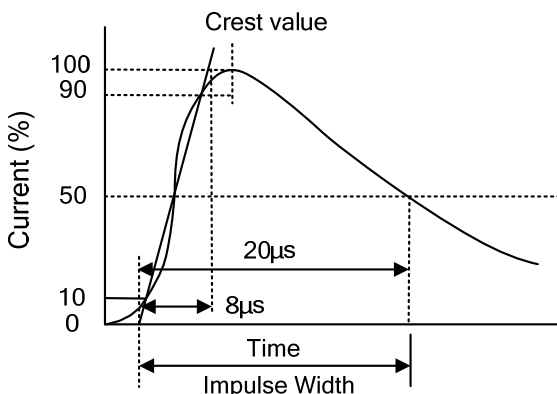
**Electrical Characteristics**

Model Number: 511KD07					Part Number: 511KD07-C3.5Z2				
Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge current	Maximum Energy (10/1000µs)	Rated Power	Leakage Current	Typical Capacitance (Reference)
V <sub>AC</sub> (V)	V <sub>DC</sub> (V)	V <sub>1mA</sub> (V)	I <sub>P</sub> (A)	V <sub>C</sub> (V)	I (A)	(J)	(W)	@83% of V <sub>1mA</sub> (µA)	@1KHz (pf)
320	415	510(459~561)	10	845	1200	30.0	0.25	≤25	100

**Marking Code**

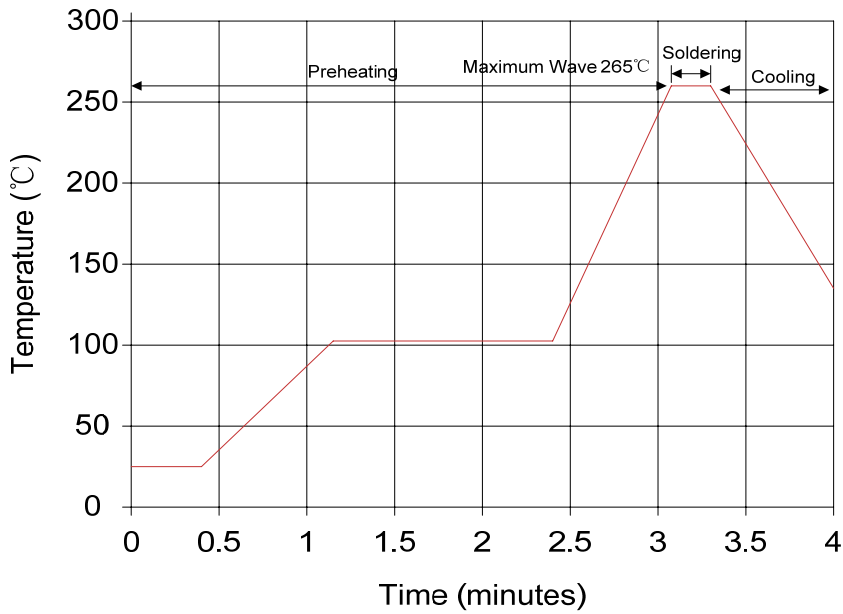
	<ul style="list-style-type: none"> <li>① Brightking Logo</li> <li>② Varistor Voltage</li> <li>③ UL Accreditation Logo</li> <li>④ CSA Accreditation Logo</li> <li>⑤ VDE Accreditation Logo</li> <li>⑥ Disk Size</li> <li>⑦ “H” is Halogen Free Code, no “H” is Halogen</li> <li>⑧ Date Code</li> <li>⑨ Product Line Code ( “Y” may be A thru Z or blank)</li> </ul>
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**Electrical Ratings**

Items	Test Condition/Description	Requirement					
Varistor Voltage	The voltage between two terminals with the specified measuring current 1mA.DC applied is called Vb.						
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 						
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 ±10% when one impulse of 10/1000μs or 2ms is applied.						
Withstanding Surge Current	The maximum current within the varistor voltage change of ±10% with the standard impulse current (8/20μs) applied one time.						
Varistor Voltage Temp. Coefficient	$\left  \frac{V_{1mA@85^{\circ}C} - V_{1mA@25^{\circ}C}}{V_{1mA@25^{\circ}C}} \times \frac{1}{60} \times 100\% (\%/^{\circ}C) \right $ $\left  \frac{V_{1mA@-40^{\circ}C} - V_{1mA@25^{\circ}C}}{V_{1mA@25^{\circ}C}} \times \frac{1}{65} \times 100\% (\%/^{\circ}C) \right $	≤0.05%/°C					
Surge Life	The change of Vb 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="438 1881 1197 2004"> <tr> <td rowspan="2">07Φ series</td> <td>180K to 680K</td> <td>25A (8/20μs)</td> </tr> <tr> <td>820K to 821K</td> <td>50A (8/20μs)</td> </tr> </table>	07Φ series	180K to 680K	25A (8/20μs)	820K to 821K	50A (8/20μs)	$\frac{\Delta V_b}{V_b} \leq \pm 10\%$
07Φ series	180K to 680K		25A (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.)

**Quantity**

Packaging Dimensions (Unit: mm)	Quantity
<p>Bulk</p>	<p>1000pcs/bag 2bags/box</p>