

Metal Oxide Varistor (MOV) Data Sheet

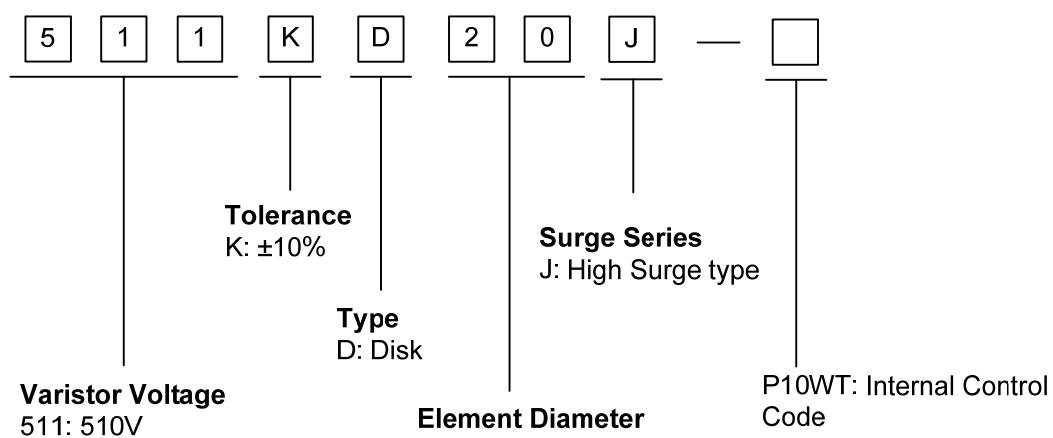
Features

- 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°C ~ +85°C
- Storage Temperature: -40°C ~ +125°C
- Safety certification: UL: E327997
CSA: 246579
VDE: 40027827

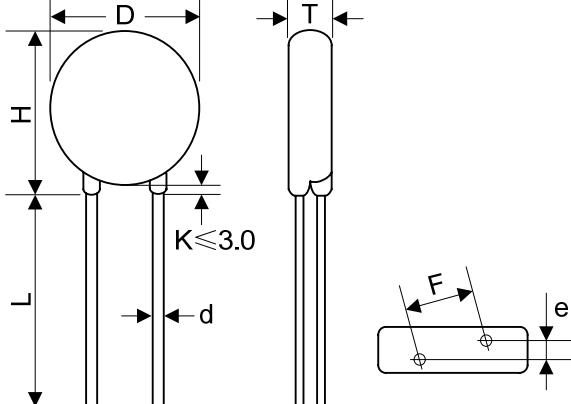
Applications

- 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



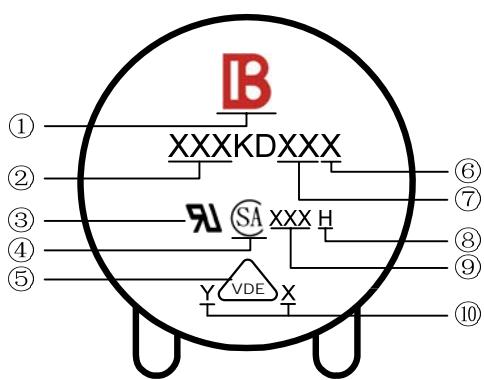
Symbol	Dimension (mm)
H	21.0~26.0
L(min.)	20
D	20.0~23.0
F(± 1.0)	10.0
T	3.5~6.2
d(± 0.05)	1.0
e(± 0.8)	3.6

Electrical Characteristics

Model Number: 511KD20J					Part Number: 511KD20J-P10WT				
Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge current	Maximum Energy (10/1000μs)	Rated Power	Leakage Current	Typical Capacitance (Reference)
V _{AC} (V)	V _{DC} (V)	V _{1mA} (V)	I _P (A)	V _c (V)	I (A)	(J)	(W)	@83% of V _{1mA} (μA)	@1KHz (pf)
320	415	510(459~561)	100	845	10000	360	1.0	≤25	780

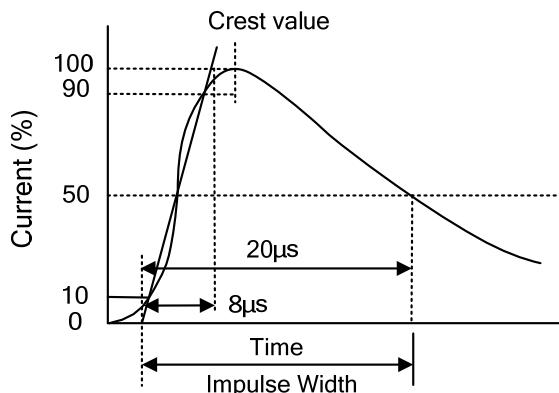
Note: Put the product into an oven and set the temperature at 125 degrees. Put the output device of the digital bridge equipment to both sides of MOV. Under the condition of 1mA direct current output, we can observe the variation trend of MOV varistor voltage by the display of digital bridge equipment. Every batch we can test 3 to 5 pcs. If the varistor voltage goes up then goes down, or the voltage fluctuates obviously within 30 minutes, this batch is rejects.

Marking Code



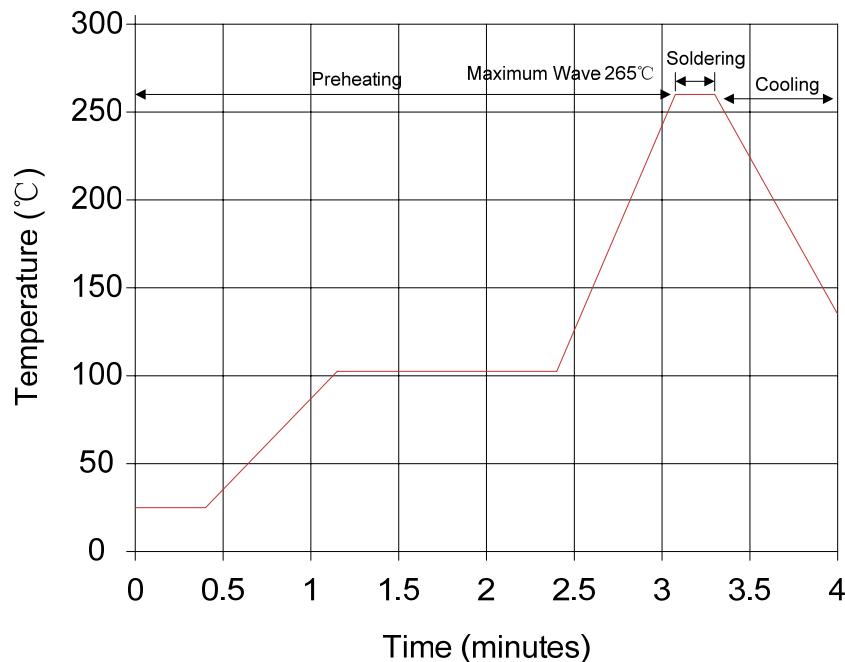
- ① Brightking Logo
- ② Varistor Voltage
- ③ UL Accreditation Logo
- ④ CSA Accreditation Logo
- ⑤ VDE Accreditation Logo
- ⑥ “J” is High Surge Code, no “J” is Standard Surge
- ⑦ Disk Size
- ⑧ “H” is Halogen Free Code, no “H” is Halogen
- ⑨ Date Code
- ⑩ Product Line Code (“Y” may be A thru Z or blank)

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	<p>The maximum voltage between two terminals with the specification standard impulse current.</p> <p>Applied waveform: 8/20μs</p> 	To meet the Specified value						
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	<p>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.</p> <table border="1" data-bbox="436 1886 1198 2010"> <tr> <td>20Φ series</td> <td>180K to 680K</td> <td>100A (8/20μs)</td> </tr> <tr> <td></td> <td>820K to 182K</td> <td>200A (8/20μs)</td> </tr> </table>	20Φ series	180K to 680K	100A (8/20μs)		820K to 182K	200A (8/20μs)	$\frac{\Delta Vb}{Vb} \leq \pm 10\%$
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	820K to 182K	200A (8/20μs)						

Soldering Recommendation

Wave Lead Free Soldering Recommendation

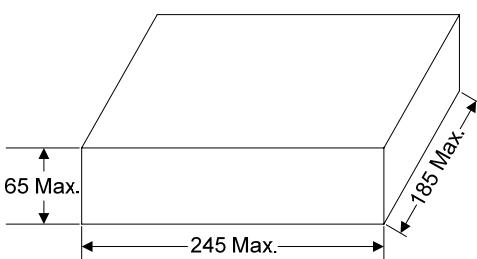


Item	Conditions
Peak Temperature	265°C
Dipping Time	10 seconds(max.)
Soldering	1 time

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
Bulk 	200pcs/bag 2bags/box