

## Metal Oxide Varistor (MOV) Data Sheet

### Features

- Wide operating voltage ( $V_{1mA}$ ) range from 120V to 1600V
- 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
- Safety certification: UL: E327997  
CSA: 246579



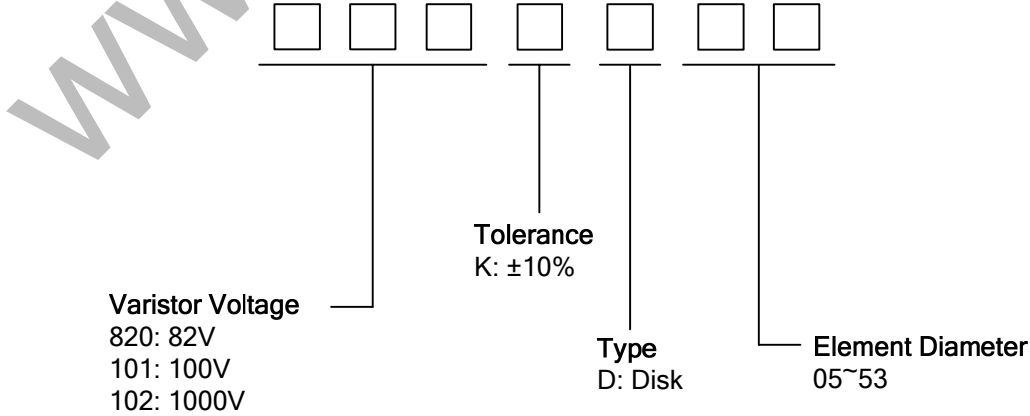
### Applications

- 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

### General characteristics definition

- Operating Temperature:  $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
- Storage Temperature:  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$

### Part number code



**Dimensions**

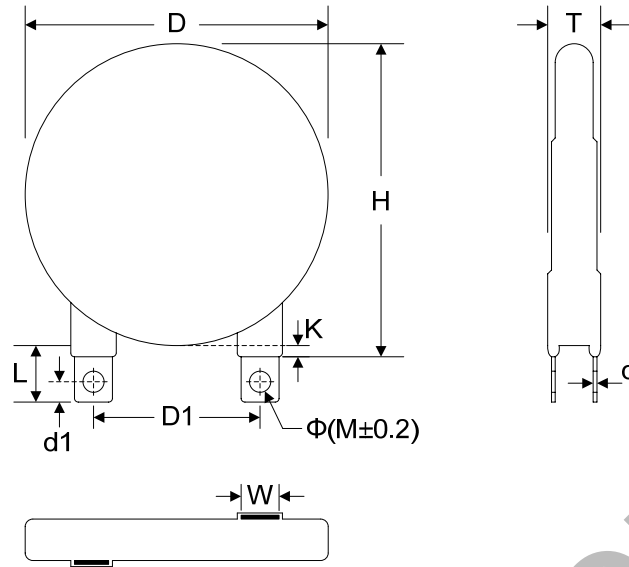


TABLE 1	
Unit: mm	
Symbol	Dimension
H(max.)	64.0
L(min.)	14.5
D(max.)	56.5
D1( $\pm 1.0$ )	25.4
T(max.)	TABLE 2
d( $\pm 0.25$ )	0.5
d1( $\pm 0.3$ )	3.6
K(max.)	3.2
W( $\pm 0.5$ )	9.7
$\Phi M(\pm 0.2)$	3.8

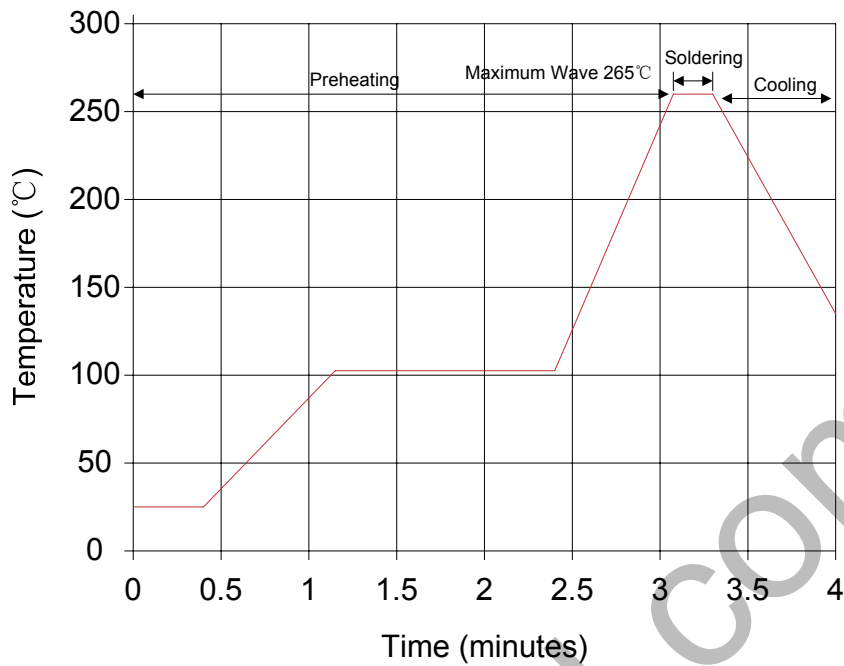
TABLE 2			
Unit: mm			
Model	T(max.)	Model	T(max.)
121K	6.0	561K	8.6
151K	6.1	621K	8.8
181K	6.2	681K	9.1
201K	6.3	751K	9.5
221K	6.4	781K	9.7
241K	6.5	821K	9.9
271K	6.7	911K	10.5
301K	6.9	951K	10.7
331K	7.0	102K	11.3
361K	7.2	112K	11.9
391K	7.4	122K	12.4
431K	7.6	142K	13.4
471K	7.9	162K	14.4
511K	8.1		

**Electrical characteristics**

Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage		Withstanding Surge Current	Maximum Energy (10/1000μs)	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)	@1KHz (pf)
121KD53	75	100	120(108~132)	500	200	70000	390	26000
151KD53	95	125	150(135~165)	500	250	70000	430	21000
181KD53	115	150	180(162~198)	500	300	70000	500	18000
201KD53	130	170	200(180~220)	500	340	70000	550	15000
221KD53	140	180	220(198~242)	500	360	70000	600	13750
241KD53	150	200	240(216~264)	500	395	70000	650	12500
271KD53	175	225	270(243~297)	500	455	70000	700	11000
301KD53	190	250	300(270~330)	500	500	70000	765	10000
331KD53	210	275	330(297~363)	500	550	70000	825	9000
361KD53	230	300	360(324~396)	500	595	70000	850	8500
391KD53	250	320	390(351~429)	500	650	70000	885	7500
431KD53	275	350	430(387~473)	500	710	70000	990	7000
471KD53	300	385	470(423~517)	500	775	70000	1080	6500
511KD53	320	415	510(459~561)	500	845	70000	1150	6000
561KD53	350	460	560(504~616)	500	925	70000	1200	5500
621KD53	385	505	620(558~682)	500	1025	70000	1300	5000
681KD53	420	560	680(612~748)	500	1120	70000	1350	4500
751KD53	460	615	750(675~825)	500	1240	70000	1400	4000
781KD53	485	640	780(702~858)	500	1290	70000	1450	3900
821KD53	510	670	820(738~902)	500	1355	70000	1600	3700
911KD53	550	745	910(819~1001)	500	1500	70000	1700	3300
951KD53	575	765	950(855~1045)	500	1570	70000	1800	3200
102KD53	625	825	1000(900~1100)	500	1650	70000	1890	3000
112KD53	680	895	1100(990~1210)	500	1815	70000	2050	2700
122KD53	750	990	1200(1080~1320)	500	1980	70000	2160	2500
142KD53	880	1140	1400(1260~1540)	500	2310	70000	2300	2150
162KD53	1000	1280	1600(1440~1760)	500	2640	70000	2500	1900

**Soldering Recommendation**

Wave Lead Free Soldering Recommendation

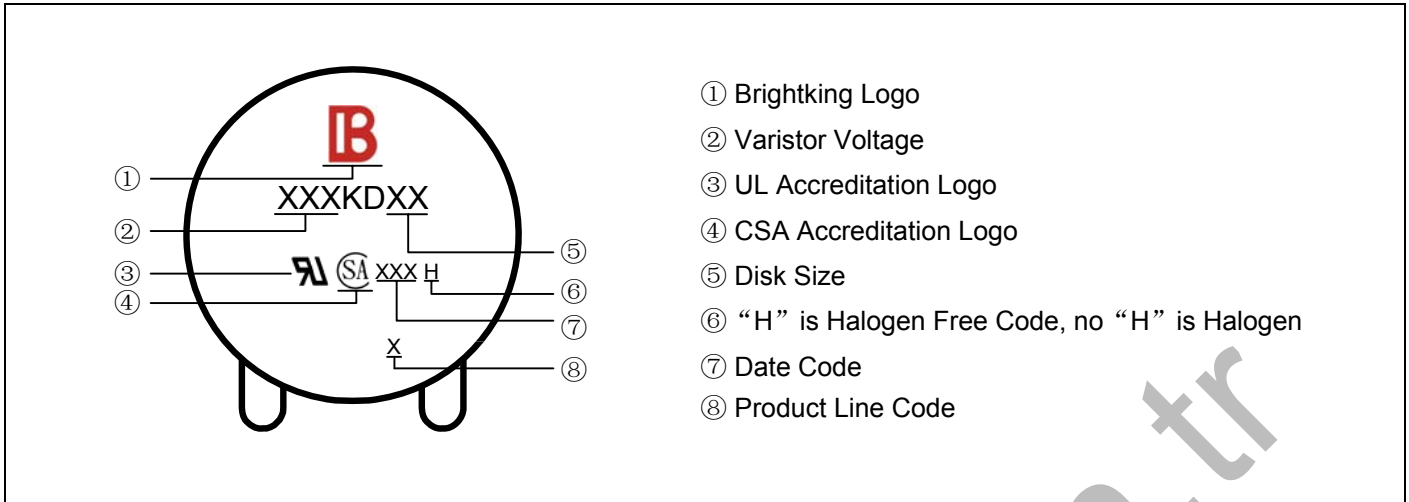


Item	Conditions
Peak Temperature	265°C
Dipping Time	10 seconds (max.)
Soldering	1 time

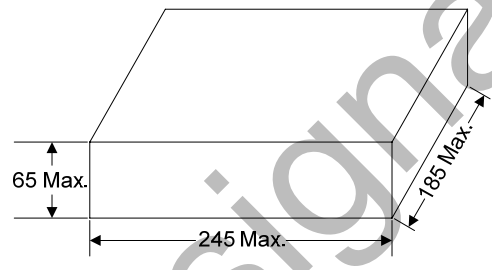
Recommendation Reworking Conditions with Soldering Iron

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

**Marking code**



**Quantity**

Packaging Dimensions (Unit: mm)	Quantity
Bulk	60pcs/box (121K~511K)
	32pcs/box (561K~162K)