25D Disc Varistor

FEATURES

* Wide operating voltages ranging from 5Vrms to 1000Vrms (6Vdc to 1465Vdc).
* Fast response time of less than 25nS, instantly clamping the transient over voltage.
* High surge current handling capability.
* High energy absorption capability.
* Low clamping voltages, providing better surge protection
* Low capacitance values, providing digital switching circuitry protection.
* High insulation resistance, preventing electric arching to the adjacent devices or circuits.

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 °C ~ +85 °C
*Storage Temperature:	-40 °C ~ +125 °C
*Working Surface Temperature:	+115 °C
*Insulation Resistance:	> 100M Ω
*Coating (Epoxy Resin):	Flame-Retardant to UL 94 V-0

Material

*Coating:	Epoxy Resin
*Lead Wire:	The Copper Wire
*Electrode:	Silver Solder
*Disk:	Zinc Oxide

Ordering Information

VDR □□ D □□□ K □ □ □

Brand Mark :

Size(mm) : 05mm to 32mm

Type: D: Disk , S: Square

Varistor Voltage : 180L(18V) to 821K(820V)

Tolerance : K±10%, L±15%, M±20%

Coating : H:Epoxy Coating 125

Short leg : NO : □.□

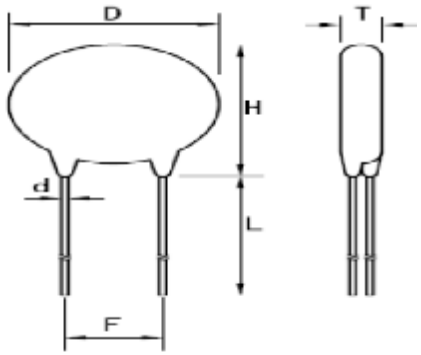
Lead Form :

P:Straight, C:Crimped, I:Inner, Y:Y kink

E: 4KV2KA S:6KV/3KA Y:10KV/5KA

J:High Surge & High Energy

Taping Mode : TA : Ammo, TR : Reel



Unit:mm

Part No.	T Max.	D Max.	H Max.	L min.	F ±0.8	d ± 0.05
25D182K	12.5	27.0	31.0	20.0	10.0	1.0
25D152K	11.0					
25D112K	8.5					
25D102K	7.8					
25D911K	7.6					
25D821K	7.2					
25D781K	6.8					
25D751K	6.5					
25D681K	6.4					
25D621K	6.4					
25D561K	6.2					
25D511K	5.8					
25D471K	5.6					
25D431K	5.3					
25D391K	5.1					
25D361K	5.0					
25D331K	4.8					
25D301K	4.7					
25D271K	4.5					
25D241K	4.3					
25D221K	4.2					
25D201K	4.1					

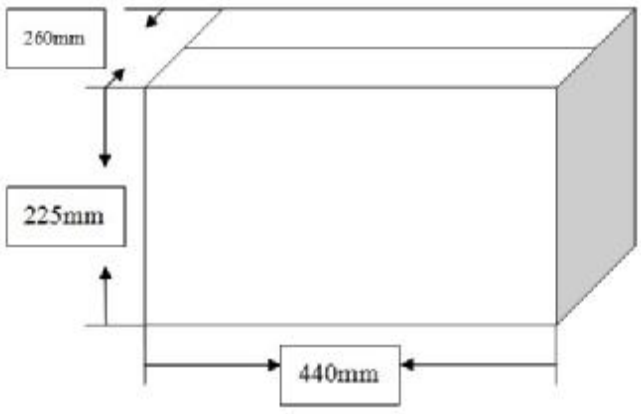
Marking & DIMENSIONS

Trademark	VDR
Part No.	25D201K-182K

25D Standard & High Surge

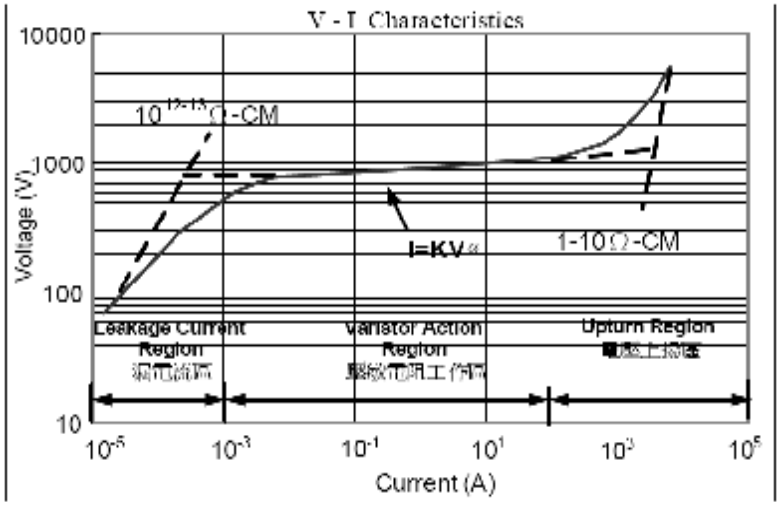
Part No.	Maximum Allowable Voltage		Energy 10/1000μS	Withstanding Surge Current 8/20μS		Rated POWER	Varistor Voltage	Max Clamping Voltage	Capacitance
	ACrms	DC	High Surge	Standard (A)	High Surge(A)	(W)	AT 1mA	AT 150A	1KHz
	(V)	(V)	(J)	1 TIME	1 TIME		(V)	(V)	P^F
25D201K	130	170	190	15KA	20KA	1.2	200(185-225)	330	3200
25D221K	140	180	200				220(198-242)	360	2900
25D241K	150	200	220				240(216-264)	395	2650
25D271K	175	225	255				270(243-297)	455	2400
25D301K	190	250	275				300(270-330)	505	2100
25D331K	210	275	295				330(297-363)	550	1900
25D361K	230	300	300				360(324-396)	595	1750
25D391K	250	320	330				390(351-429)	650	1600
25D431K	275	350	360				430(387-473)	710	1500
25D471K	300	385	380				470(423-517)	775	1400
25D511K	320	415	400				510(459-561)	845	1250
25D561K	350	460	440				560(504-616)	920	1150
25D621K	385	505	450				620(558-682)	1025	1050
25D681K	420	560	460				680(612-748)	1120	950
25D751K	460	615	510				750(675-825)	1240	850
25D781K	485	640	530				780(702-858)	1290	830
25D821K	510	670	570				820 (738-902)	1355	800
25D911K	550	745	620				910 (819-1001)	1500	700
25D102K	625	825	685				1000(900-1100)	1650	650
25D112K	680	895	720				1100(990-1210)	1815	600
25D152K	900	1200	950				1500(1350-1650)	2475	475
25D182K	1000	1465	1090				1800(1620-1980)	2970	400

Packing Specifications /Bulk Packing Dimension /Quantity per Packing Method

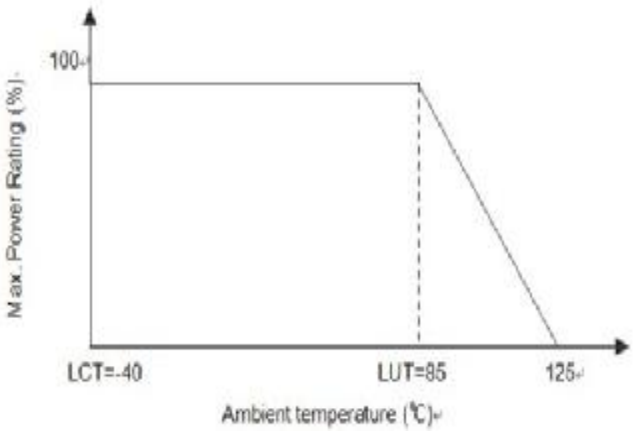


Dimension	Part No.	Bag	Small Carton	Carton
25D	201k to 182K	100	500	1,000

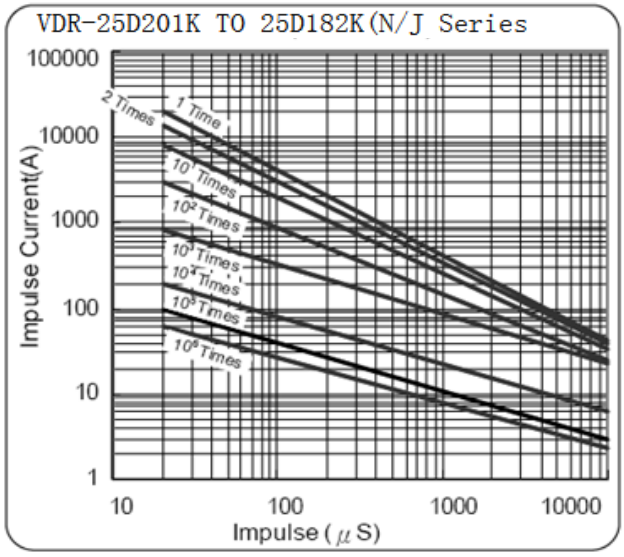
VARISTOR V - I CHARACTERISTICS

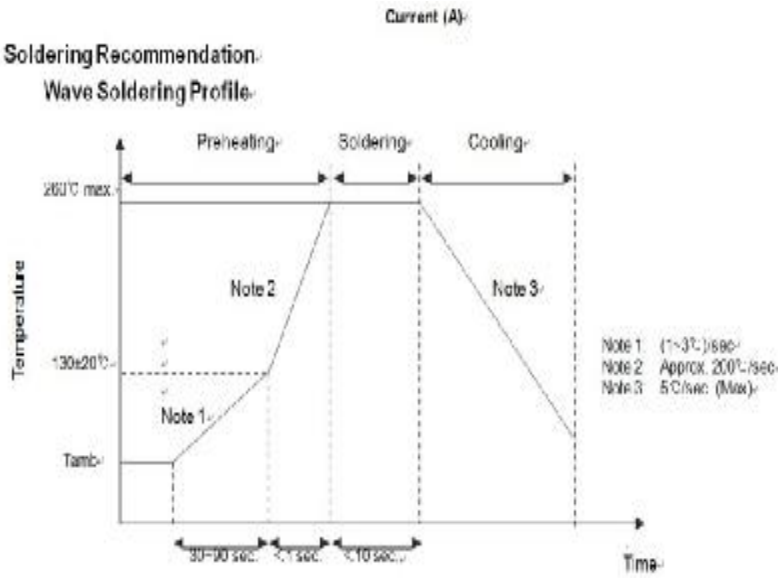


Power Derating Curve

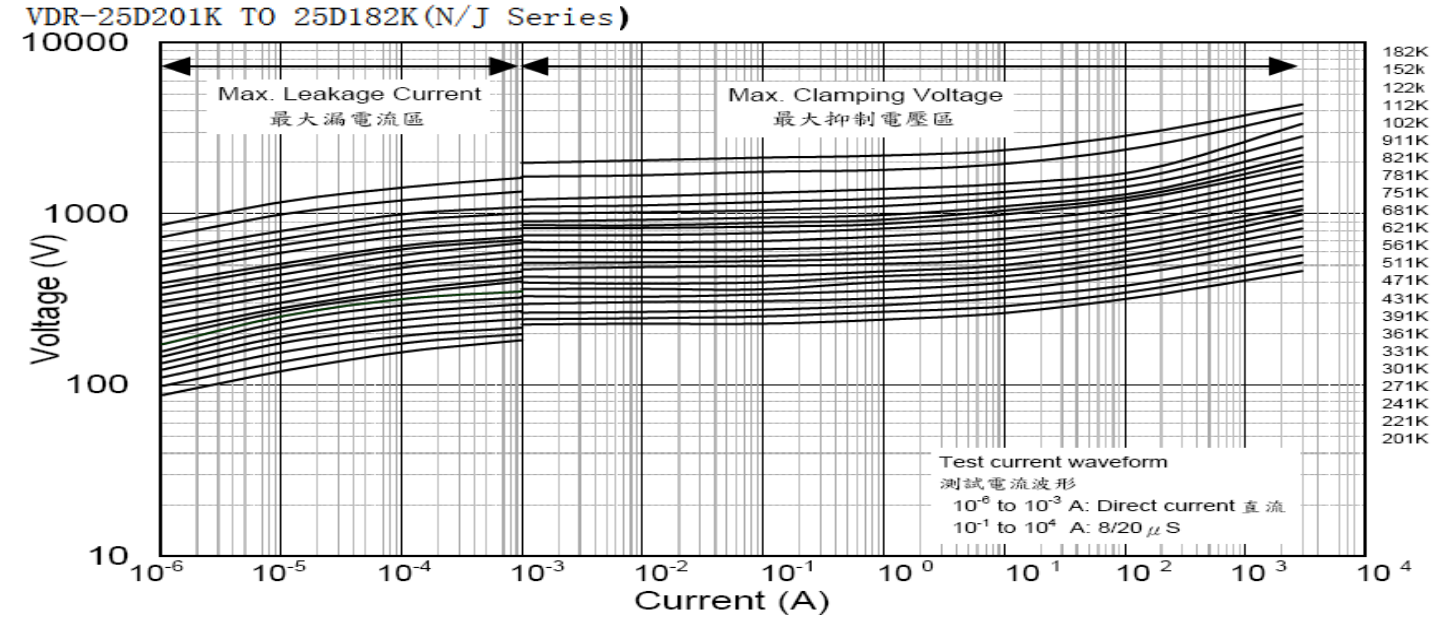


Surge Life Time Ratings N (Standard) / K (Low Capacitance) Series





V-I CURVE



Reliability Test

Mechanical Ratings

Test Parameter	Test Condition / Description			Performance Requirements
Terminal Pull Strength	After gradually applying the load specified below and keeping the unit fixed for ten seconds, the terminal shall be visually examined for any damage.	Diameter	Loading	No visible damage
		0.6mm	1.0 Kg	
		0.8mm	1.0 Kg	
		1.0mm	2.0 Kg	
Terminal Bending Strength	The unit shall be secured with its terminal kept vertical and the weight specified below be applied in the axial direction. The terminal shall gradually be bent by 90° in one direction, then 90° in the opposite direction, and again back to the original position. The damage of the terminal shall be visually examined.	Diameter	Loading	No visible damage
		0.6mm	0.5 Kg	
		0.8mm	0.5 Kg	
		1.0mm	1.0 Kg	
Vibration	The Specimen shall be vibrated by its lead wires with a total amplitude of 1.5㎜ and a varying frequency of 10~55~10HZ(each minutes) for a period of 2 hours respectively in each X,Yand Z directions.			No visible damage △VB/VB%≦±5%
Soldering-solderability	After dipping the terminal to depth of approximately 3㎜ from the specimen in a soldering bath of 260℃ for 10±1(D5: 5±1) seconds. Thereafter the terminal shall be visually examined.			Terminations shall be uniformly tinned
Soldering-Resistance to Solder Heat	After preheating the specimen, the specimen shall be completely immersed into a soldering bath having a temperature of 260±5℃ for 10±1 (D5: 5±1) seconds or iron of 400±5℃ for 3±0.5 seconds. There after the change of Vb and mechanical damage shall be examined.			No visible damage △VB/VB% ≦±5%

ENVIRONMENTAL RATINGS

Dry Heat Loading	The specimen shall be applied continuously the maximum allowable voltage at the specified conditions for specified period and then stored at room temperature and normal humidity over 2 hours. Thereafter, the change of Vb and mechanical damage shall be examined. Ambient temp：125±2℃ ; Period：1000±24hours.			△VB/VB%≦±10%
High Temperature Storage	In a drying oven without load. Ambient temp：125±2℃ ; period：1000±24hours			△VB/VB%≦±5%
Damp Heat Loading	The specimen shall be applied continuously the maximum allowable voltage at the specified conditions for specified period and then stored at room temperature and normal humidity over 2 hours. Thereafter, the change of Vb and mechanical damage shall be examined. Ambient condition：40±2℃ , 90 to 95%R.H. ; period：1000±24 hours			△VB/VB%≦±10%
Temperature Cycle	Condition the specimen to each temperature form step 1 to step 4 in this order for the period shown in the table of specifications. The change of Vb and mechanical damage shall be examined after 2 hours.	Step	Temp°C	Period
		1	-40±3°C	30 min.
		2	Room Temp	15 min.
		3	85±2°C	30 min.
		4	Room Temp	15 min.
				No visible damage △VB/VB%≦±10%
Surge Lifetime Rating	The change of Vb shall be measured after the impulse listed below is applied 10,000 times continuously with the interval of ten seconds at room temperature.			No visible damage △VB/VB%≦±10%
Voltage Proof	Voltage：2500VAC Leakage Current≦0.5mA Time：60 Seconds			No Breakdown