



## Features

- Wide range of operating voltages from 5 Vrms to 1000 Vrms (6 Vdc to 1465 Vdc)
- Fast response time of less than 25ns, instantly clamping of transient over-voltage
- Capable to handle high surge current
- High energy protection capability
- Low clamping voltages for efficient surge behavior
- Low capacitance values, ideal for digital switching circuit protection
- High insulation resistance, preventing electric arcing to adjacent components or circuits

## Application

- Transistors, diodes, integrated circuits (IC), thyristors or Triac semiconductor protection
- Surge protection for consumer electronics
- Surge protection for industrial appliances
- Surge protection for electronic home appliances, gas or petroleum operated appliances
- Relay and electromagnetic surge absorption.



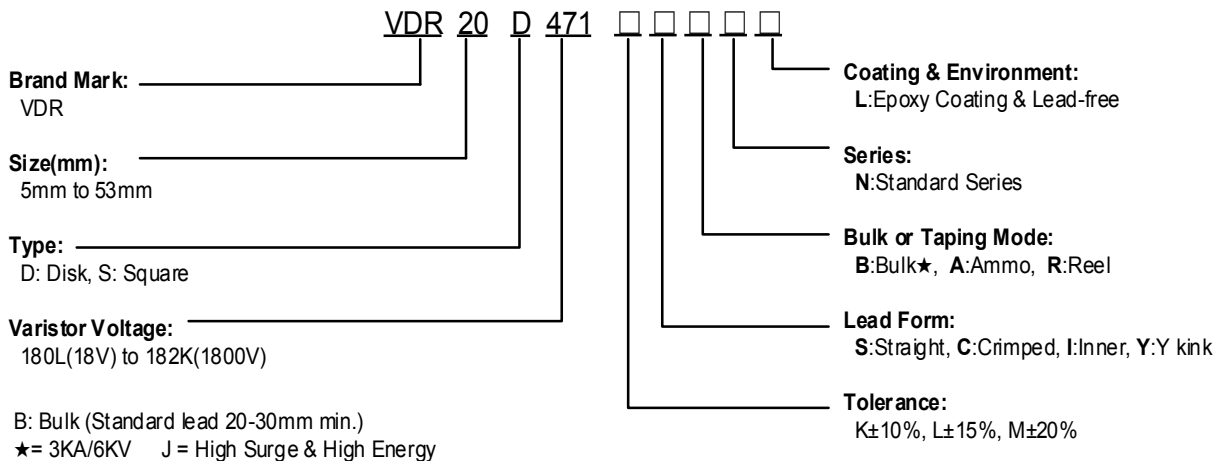
## General Characteristics

- Operating Temperature: -40° C ~ +85° C
- Storage Temperature: -40° C ~ +125° C
- Working Surface Temperature: +115° C
- Insulation Resistance: > 100 MΩ
- Coating (Epoxy Resin): Flame-Retardant to UL94V-0

## Material

- Coating: Epoxy Resin
- Lead Wires: Copper
- Electrode: Silver
- Disc: Zinc Oxide

## Part Numbering System



## Ordering Information

Series	Amp code	Packaging Code	Qty
20D			



## Electrical Characteristics

Part No.	Maximum Allowable Voltage		Energy 10/1000µS		Withstanding Surge Current 8/20µS				Rated Power (W)	Varistor Voltage (V)	Max Clamping Voltage (V)	Capacitance (pF)
	ACrms (V)	DC (V)	Standard (J)	High Surge (J)	Standard (A)		High Surge(A)					
					1 TIME	2 TIME	1 TIME	2 TIME				
20D180L	10	14	6.1	13	2000	1000	3000	1000	0.2	18(15-21)	38	19000
20D220K	14	18	7.4	16	2000	1000	3000	1000	0.2	22(20-24)	43	15000
20D270K	17	22	9.1	19	2000	1000	3000	1000	0.2	27(24-30)	53	12000
20D330K	20	26	11.2	24	2000	1000	3000	1000	0.2	33(30-36)	65	10000
20D390K	25	31	13.2	28	2000	1000	3000	1000	0.2	39(35-43)	77	8500
20D470K	30	38	16.8	34	2000	1000	3000	1000	0.2	47(42-52)	93	7400
20D560K	35	45	19.6	41	2000	1000	3000	1000	0.2	56(50-62)	110	6500
20D680K	40	56	23.8	49	2000	1000	3000	1000	0.2	68(61-75)	135	5800

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	ACrms (V)	DC (V)	Standard (J)	High Surge (J)	Standard (A)		High Surge(A)					
					1 TIME	2 TIME	1 TIME	2 TIME				
20D820K	50	65	37.8	56	6500	4000	10000	7000	1	82(74-90)	135	4900
20D101K	60	85	42	70	6500	4000	10000	7000	1	100(90-110)	165	4000
20D121K	75	100	56	85	6500	4000	10000	7000	1	120(108-132)	200	3300
20D151K	95	125	70	106	6500	4000	10000	7000	1	150(135-165)	250	2700
20D181K	115	150	84	130	6500	4000	10000	7000	1	180(162-198)	300	2200
20D201K	130	170	98	140	6500	4000	10000	7000	1	200(185-225)	330	2000
20D221K	140	180	105	155	6500	4000	10000	7000	1	220(198-242)	360	1800
20D241K	150	200	112	168	6500	4000	10000	7000	1	240(216-264)	395	1650
20D271K	175	225	126	190	6500	4000	10000	7000	1	270(243-297)	455	1500
20D301K	190	250	133	210	6500	4000	10000	7000	1	300(270-330)	505	1300
20D331K	210	275	140	228	6500	4000	10000	7000	1	330(297-363)	550	1200
20D361K	230	300	168	255	6500	4000	10000	7000	1	360(324-396)	595	1100
20D391K	250	320	182	275	6500	4000	10000	7000	1	390(351-429)	650	1000
20D431K	275	350	196	305	6500	4000	10000	7000	1	430(387-473)	710	930
20D471K	300	385	202	350	6500	4000	10000	7000	1	470(423-517)	775	850
20D511K	320	415	207	360	6500	4000	10000	7000	1	510(459-561)	845	780
20D561K	350	460	210	366	6500	4000	10000	7000	1	560(504-616)	920	715
20D621K	385	505	224	372	6500	4000	10000	7000	1	620(558-682)	1025	650
20D681K	420	560	224	382	6500	4000	10000	7000	1	680(612-748)	1120	600
20D751K	460	615	230	410	6500	4000	10000	7000	1	750(675-825)	1240	530
20D781K	485	640	240	421	6500	4000	10000	7000	1	780(702-858)	1290	510
20D821K	510	670		460	6500	4000	10000	7000	1	820 (738-902)	1355	500
20D911K	550	745	260	510	6500	4000	10000	7000	1	910 (819-1001)	1500	440
20D102K	625	825	270	560	6500	4000	10000	7000	1	1000(900-1100)	1650	400
20D112K	680	895	280	620	6500	4000	10000	7000	1	1100(990-1210)	1815	360
20D152K	900	1200	420	780	6500	4000	10000	7000	1	1500(1350-1650)	2475	260
20D182K	1000	1465	560	860	6500	4000	10000	7000	1	1800(1620-1980)	2970	220

# 20D Series Metal-Oxide Varistor



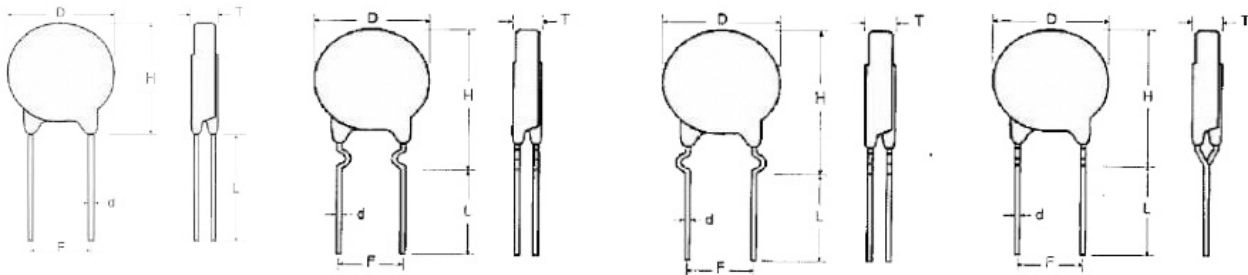
## Product Dimensions (mm)

S Type(Straight Lead)

I Type(Inner Crimped Lead)

C Type(Out Crimped Lead)

Y Lead Type(Y Kink Lead)



Part No.	D Max.	H Max.		L min.	F±0.8	d±0.05	T Max.
		SB	CB/IB/YB				
20D182K	22.5	26	21	20	7.5/10.0	0.8/1.0	12.5
20D152K	22.5	26	21	20	7.5/10.0	0.8/1.0	11.0
20D112K	22.5	26	21	20	7.5/10.0	0.8/1.0	8.5
20D102K	22.5	26	21	20	7.5/10.0	0.8/1.0	7.8
20D911K	22.5	26	21	20	7.5/10.0	0.8/1.0	7.6
20D821K	22.5	26	21	20	7.5/10.0	0.8/1.0	7.2
20D781K	22.5	26	21	20	7.5/10.0	0.8/1.0	6.8
20D751K	22.5	26	21	20	7.5/10.0	0.8/1.0	6.5
20D681K	22.5	26	21	20	7.5/10.0	0.8/1.0	6.4
20D621K	22.5	26	21	20	7.5/10.0	0.8/1.0	6.4
20D561K	22.5	26	21	20	7.5/10.0	0.8/1.0	6.2
20D511K	22.5	26	21	20	7.5/10.0	0.8/1.0	5.8
20D471K	22.5	26	21	20	7.5/10.0	0.8/1.0	5.6
20D431K	22.5	26	21	20	7.5/10.0	0.8/1.0	5.3
20D391K	22.5	26	21	20	7.5/10.0	0.8/1.0	5.1
20D361K	22.5	26	21	20	7.5/10.0	0.8/1.0	5.0
20D331K	22.5	26	21	20	7.5/10.0	0.8/1.0	4.8
20D301K	22.5	26	21	20	7.5/10.0	0.8/1.0	4.7
20D271K	22.5	26	21	20	7.5/10.0	0.8/1.0	4.5
20D241K	22.5	26	21	20	7.5/10.0	0.8/1.0	4.3
20D221K	22.5	26	21	20	7.5/10.0	0.8/1.0	4.2
20D201K	22.5	26	21	20	7.5/10.0	0.8/1.0	4.1
20D181K	22.5	26	21	20	7.5/10.0	0.8/1.0	4.1
20D151K	22.5	26	21	20	7.5/10.0	0.8/1.0	4.8
20D121K	22.5	26	21	20	7.5/10.0	0.8/1.0	4.5
20D101K	22.5	26	21	20	7.5/10.0	0.8/1.0	4.3
20D820K	22.5	26	21	20	7.5/10.0	0.8/1.0	4.1
20D680K	22.5	26	21	20	7.5/10.0	0.8/1.0	4.1
20D560K	22.5	26	21	20	7.5/10.0	0.8/1.0	4.1
20D470K	22.5	26	21	20	7.5/10.0	0.8/1.0	4.5

