

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.



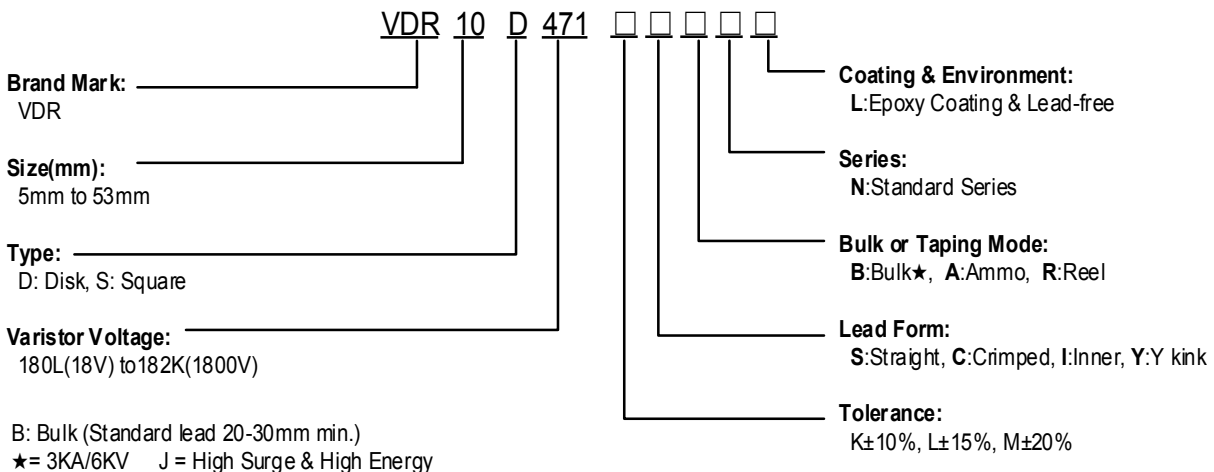
General Characteristics

- 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
10D			

10D Series Metal-Oxide Varistor



Electrical Characteristics

Part No.	Maximum Allowable Voltage		Energy 10/1000 μ S		Withstanding Surge Current 8/20 μ S				Rated Power (W)	Varistor Voltage AT 0.1mA (V)	Max Clamping Voltage AT 1A (V)	Capacitance 1KHz pF
	ACrms (V)	DC (V)	Standard (J)	High Surge (J)	Standard (A)		High Surge(A)					
					1 TIME	2 TIME	1 TIME	2 TIME				
10D180L	10.0	14.0	2.8	3.0	500.0	250.0	1000.0	500.0	0.05	18(15-21)	38.0	5600.0
10D220K	14.0	18.0	4.5	5.0	500.0	250.0	1000.0	500.0	0.05	22(20-24)	43.0	4500.0
10D270K	17.0	22.0	6.0	6.5	500.0	250.0	1000.0	500.0	0.05	27(24-30)	53.0	3700.0
10D330K	20.0	26.0	7.4	8.0	500.0	250.0	1000.0	500.0	0.05	33(30-36)	65.0	3000.0
10D390K	25.0	31.0	9.1	9.5	500.0	250.0	1000.0	500.0	0.05	39(35-43)	77.0	2600.0
10D470K	30.0	38.0	10.8	11.0	500.0	250.0	1000.0	500.0	0.05	47(42-52)	93.0	2100.0
10D560K	35.0	45.0	12.9	13.0	500.0	250.0	1000.0	500.0	0.05	56(50-62)	110.0	1800.0
10D680K	40.0	56.0	15.4	16.0	500.0	250.0	1000.0	500.0	0.05	68(61-75)	135.0	1500.0

Part No.	Maximum Allowable Voltage		Energy 10/1000 μ S		Withstanding Surge Current 8/20 μ S				Rated Power (W)	Varistor Voltage AT 1mA (V)	Max Clamping Voltage AT 25A (V)	Capacitance 1KHz pF
	ACrms (V)	DC (V)	Standard (J)	High Surge (J)	Standard (A)		High Surge(A)					
					1 TIME	2 TIME	1 TIME	2 TIME				
10D820K	50	65	16.8	17.0	2500	1250	3500	2500	0.4	82(74-90)	135	1200
10D101K	60	85	18.2	18.5	2500	1250	3500	2500	0.4	100(90-110)	165	1000
10D121K	75	100	21.0	21.5	2500	1250	3500	2500	0.4	120(108-132)	200	830
10D151K	95	125	25.2	26.0	2500	1250	3500	2500	0.4	150(135-165)	250	670
10D181K	115	150	30.8	38.0	2500	1250	3500	2500	0.4	180(162-198)	300	560
10D201K	130	170	42.0	42.5	2500	1250	3500	2500	0.4	200(185-225)	330	500
10D221K	140	180	46.2	46.5	2500	1250	3500	2500	0.4	220(198-242)	360	450
10D241K	150	200	50.4	51.0	2500	1250	3500	2500	0.4	240(216-264)	395	420
10D271K	175	225	57.4	58.0	2500	1250	3500	2500	0.4	270(243-297)	455	370
10D301K	190	250	63.0	63.5	2500	1250	3500	2500	0.4	300(270-330)	505	330
10D331K	210	275	68.6	69.0	2500	1250	3500	2500	0.4	330(297-363)	550	300
10D361K	230	300	74.2	75.0	2500	1250	3500	2500	0.4	360(324-396)	595	280
10D391K	250	320	81.2	82.0	2500	1250	3500	2500	0.4	390(351-429)	650	260
10D431K	275	350	88.2	89.0	2500	1250	3500	2500	0.4	430(387-473)	710	230
10D471K	300	385	96.0	100	2500	1250	3500	2500	0.4	470(423-517)	775	210
10D511K	320	415	98.0	102	2500	1250	3500	2500	0.4	510(459-561)	845	200
10D561K	350	460	100	104	2500	1250	3500	2500	0.4	560(504-616)	920	180
10D621K	385	505	102	106	2500	1250	3500	2500	0.4	620(558-682)	1025	160
10D681K	420	560	104	108	2500	1250	3500	2500	0.4	680(612-748)	1120	150
10D751K	460	615	110	118	2500	1250	3500	2500	0.4	750(675-825)	1240	140
10D781K	485	640	118	120	2500	1250	3500	2500	0.4	780(702-858)	1290	130
10D821K	510	670	122	125	2500	1250	3500	2500	0.4	820 (738-902)	1355	120
10D911K	550	745	128	134	2500	1250	3500	2500	0.4	910 (819-1001)	1500	110
10D102K	625	825	131	140	2500	1250	3500	2500	0.4	1000(900-1100)	1650	100
10D112K	680	895	133	155	2500	1250	3500	2500	0.4	1100(990-1210)	1815	90

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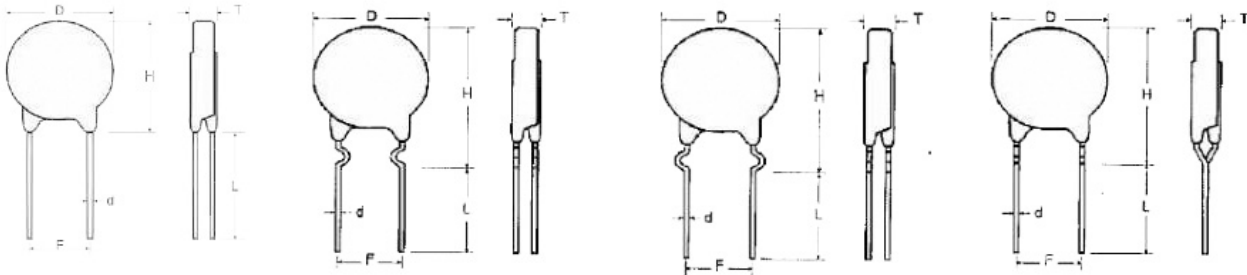
Product Dimensions (mm)

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				
10D112K	12.5	14.0	17.0	20.0	7.5	0.8	7.8
10D102K	12.5	14.0	17.0	20.0	7.5	0.8	7.6
10D911K	12.5	14.0	17.0	20.0	7.5	0.8	7.2
10D821K	12.5	14.0	17.0	20.0	7.5	0.8	6.8
10D751K	12.5	14.0	17.0	20.0	7.5	0.8	6.5
10D681K	12.5	14.0	17.0	20.0	7.5	0.8	6.4
10D621K	12.5	14.0	17.0	20.0	7.5	0.8	6.4
10D561K	12.5	14.0	17.0	20.0	7.5	0.8	6.2
10D511K	12.5	14.0	17.0	20.0	7.5	0.8	5.8
10D471K	12.5	14.0	17.0	20.0	7.5	0.8	5.6
10D431K	12.5	14.0	17.0	20.0	7.5	0.8	5.3
10D391K	12.5	14.0	17.0	20.0	7.5	0.8	5.1
10D361K	12.5	14.0	17.0	20.0	7.5	0.8	5.0
10D331K	12.5	14.0	17.0	20.0	7.5	0.8	4.8
10D301K	12.5	14.0	17.0	20.0	7.5	0.8	4.7
10D271K	12.5	14.0	17.0	20.0	7.5	0.8	4.5
10D241K	12.5	14.0	17.0	20.0	7.5	0.8	4.3
10D221K	12.5	14.0	17.0	20.0	7.5	0.8	4.2
10D201K	12.5	14.0	17.0	20.0	7.5	0.8	4.1
10D181K	12.5	14.0	17.0	20.0	7.5	0.8	4.1
10D151K	12.5	14.0	17.0	20.0	7.5	0.8	4.8
10D121K	12.5	14.0	17.0	20.0	7.5	0.8	4.5
10D101K	12.5	14.0	17.0	20.0	7.5	0.8	4.3
10D820K	12.5	14.0	17.0	20.0	7.5	0.8	4.1
10D680K	12.5	14.0	17.0	20.0	7.5	0.8	4.5
10D560K	12.5	14.0	17.0	20.0	7.5	0.8	4.5
10D470K	12.5	14.0	17.0	20.0	7.5	0.8	4.5
10D390K	12.5	14.0	17.0	20.0	7.5	0.8	4.5
10D330K	12.5	14.0	17.0	20.0	7.5	0.8	4.5
10D270K	12.5	14.0	17.0	20.0	7.5	0.8	4.5
10D220K	12.5	14.0	17.0	20.0	7.5	0.8	4.5
10D180L	12.5	14.0	17.0	20.0	7.5	0.8	4.5