HUAAN 华兴安电子 HUAAN LIMITED

VDR-20D Straight Leads Series

Metal Oxide Varistors (MOV)

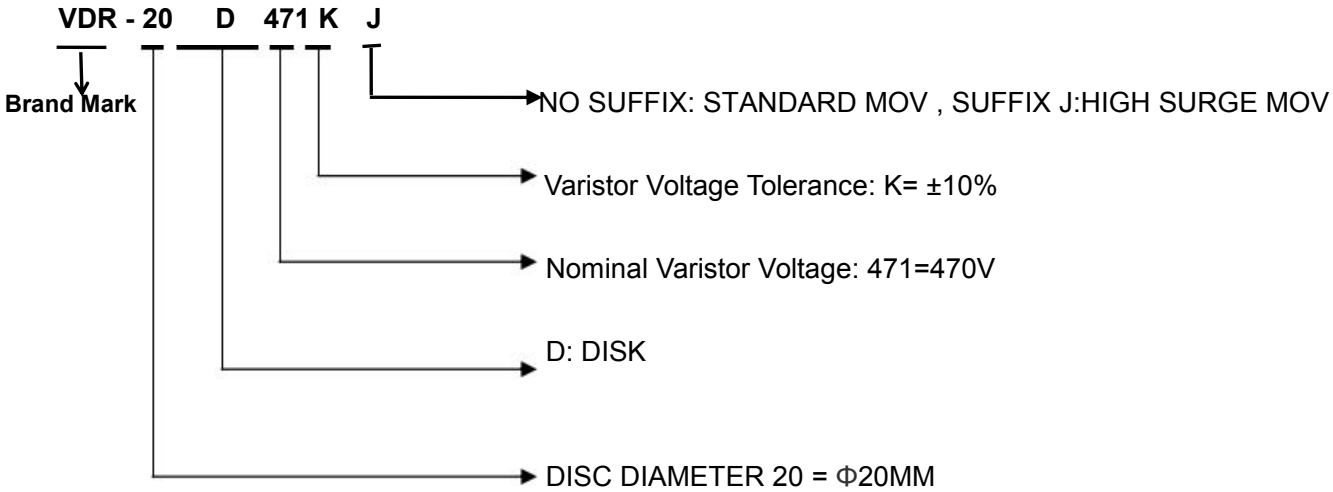
Features

·Wide operating voltage (V1mA) range from 18V to 1800V
·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℃ ~ +85℃
·Storage Temperature：-40℃ ~ +125℃
·Safety certification:

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

Description of Part Number



Delivery Time

Standard MOV	Delivery Time	High Surge MOV	Delivery Time
VDR-20D180L ~ VDR-20D182K	13days	VDR-20D180LJ ~ VDR-20D182KJ	14days

Electrical Characteristics

Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage	Max Surge Current 8/20μs	Maximum Energy (10/1000μs)	Typical Capacitance (Reference)	Safety Certification	
Standard MOV	V_{AC}(V)	V_{DC}(V)	V_{1mA}(V)	Vc(V)AT100A	Imax	(J)	1KHz(pf)	UL / CUL	VDE
VDR-20D180L	11	14	18(15.3~20.7)	36	2000A	11	28500	√	-
VDR-20D220K	14	18	22(19.8~24.2)	43	2000A	14	18500	√	-
VDR-20D270K	17	22	27(24.3~29.7)	53	2000A	16	13000	√	√
VDR-20D330K	20	26	33(29.7~36.3)	65	2000A	23	11500	√	√
VDR-20D390K	25	31	39(35.1~42.9)	77	2000A	26	8500	√	√
VDR-20D470K	30	38	47(42.3~51.7)	93	2000A	30	7400	√	√
VDR-20D560K	35	45	56(50.4~61.6)	100	2000A	41	6500	√	√
VDR-20D680K	40	56	68(61.2~74.8)	135	2000A	46	5800	√	√
VDR-20D820K	50	65	82(73.8~90.2)	135	6500A	38	4900	√	√
VDR-20D101K	60	85	100(90~110)	165	6500A	45	4000	√	√
VDR-20D121K	75	100	120(108~132)	200	6500A	55	3300	√	√
VDR-20D151K	95	125	150(135~165)	250	6500A	70	2700	√	√
VDR-20D181K	115	150	180(162~198)	300	6500A	85	2200	√	√
VDR-20D201K	130	170	200(180~220)	340	6500A	95	2000	√	√
VDR-20D221K	140	180	220(198~242)	360	6500A	100	1800	√	√
VDR-20D241K	150	200	240(216~264)	395	6500A	108	1650	√	√
VDR-20D271K	175	225	270(243~297)	455	6500A	127	1500	√	√
VDR-20D301K	190	250	300(270~330)	500	6500A	136	1300	√	√
VDR-20D331K	210	275	330(297~363)	550	6500A	150	1200	√	√
VDR-20D361K	230	300	360(324~396)	595	6500A	163	1100	√	√
VDR-20D391K	250	320	390(351~429)	650	6500A	180	1000	√	√
VDR-20D431K	275	350	430(387~473)	710	6500A	190	930	√	√
VDR-20D471K	300	385	470(423~517)	775	6500A	220	850	√	√
VDR-20D511K	320	415	510(459~561)	845	6500A	220	780	√	√
VDR-20D561K	350	460	560(504~616)	925	6500A	220	710	√	√
VDR-20D621K	385	505	620(558~682)	1025	6500A	220	650	√	√
VDR-20D681K	420	560	680(612~748)	1120	6500A	230	600	√	√
VDR-20D751K	460	615	750(675~825)	1240	6500A	255	580	√	√
VDR-20D781K	485	640	780(702~858)	1290	6500A	265	560	√	√
VDR-20D821K	510	670	820(738~902)	1355	6500A	282	525	√	√
VDR-20D911K	550	745	910(819~1001)	1500	6500A	310	495	√	√
VDR-20D102K	625	825	1000(900~1100	1650	6500A	342	480	√	-
VDR-20D112K	680	895	1100(990~1210	1815	6500A	383	460	√	-
VDR-20D122K	750	990	1200(1080~1320	1980	6500A	408	350	√	-
VDR-20D182K	1000	1465	1800(1620~1980	2970	6500A	625	320	√	-

Electrical Characteristics

Part Number	Maximum Allowable Voltage		Varistor Voltage	Maximum Clamping Voltage	Max Surge Current 8/20μs	Maximum Energy (10/1000μs)	Typical Capacitance (Reference)	Safety Certification	
High Surge MOV	V_{AC}(V)	V_{DC}(V)	V_{1mA}(V)	Vc(V)AT100A	Imax	(J)	1KHz(pf)	UL / CUL	VDE
VDR-20D180LJ	11	14	18(15.3~20.7)	36	3000A	13	28500	-	-
VDR-20D220KJ	14	18	22(19.8~24.2)	43	3000A	16	18500	-	-
VDR-20D270KJ	17	22	27(24.3~29.7)	53	3000A	19	13000	-	-
VDR-20D330KJ	20	26	33(29.7~36.3)	65	3000A	24	11500	-	-
VDR-20D390KJ	25	31	39(35.1~42.9)	77	3000A	28	8500	-	-
VDR-20D470KJ	30	38	47(42.3~51.7)	93	3000A	34	7400	-	-
VDR-20D560KJ	35	45	56(50.4~61.6)	100	3000A	41	6500	-	-
VDR-20D680KJ	40	56	68(61.2~74.8)	135	3000A	49	5800	-	-
VDR-20D820KJ	50	65	82(73.8~90.2)	135	10000A	56	4900	-	-
VDR-20D101KJ	60	85	100(90~110)	165	10000A	70	4000	-	-
VDR-20D121KJ	75	100	120(108~132)	200	10000A	85	3300	-	-
VDR-20D151KJ	95	125	150(135~165)	250	10000A	106	2700	-	-
VDR-20D181KJ	115	150	180(162~198)	300	10000A	130	2200	-	-
VDR-20D201KJ	130	170	200(180~220)	340	10000A	140	2000	-	-
VDR-20D221KJ	140	180	220(198~242)	360	10000A	155	1800	-	-
VDR-20D241KJ	150	200	240(216~264)	395	10000A	168	1650	-	-
VDR-20D271KJ	175	225	270(243~297)	455	10000A	190	1500	-	-
VDR-20D301KJ	190	250	300(270~330)	500	10000A	210	1300	-	-
VDR-20D331KJ	210	275	330(297~363)	550	10000A	228	1200	-	-
VDR-20D361KJ	230	300	360(324~396)	595	10000A	255	1100	-	-
VDR-20D391KJ	250	320	390(351~429)	650	10000A	275	1000	-	-
VDR-20D431KJ	275	350	430(387~473)	710	10000A	305	930	-	-
VDR-20D471KJ	300	385	470(423~517)	775	10000A	350	850	-	-
VDR-20D511KJ	320	415	510(459~561)	845	10000A	360	780	-	-
VDR-20D561KJ	350	460	560(504~616)	925	10000A	380	710	-	-
VDR-20D621KJ	385	505	620(558~682)	1025	10000A	390	650	-	-
VDR-20D681KJ	420	560	680(612~748)	1120	10000A	400	600	-	-
VDR-20D751KJ	460	615	750(675~825)	1240	10000A	420	580	-	-
VDR-20D781KJ	485	640	780(702~858)	1290	10000A	440	560	-	-
VDR-20D821KJ	510	670	820(738~902)	1355	10000A	460	525	-	-
VDR-20D911KJ	550	745	910(819~1001)	1500	10000A	510	495	-	-
VDR-20D102KJ	625	825	1000(900~1100)	1650	10000A	565	480	-	-
VDR-20D112KJ	680	895	1100(990~1210)	1815	10000A	620	460	-	-
VDR-20D122KJ	750	990	1200(1080~1320	1980	10000A	660	350	-	-
VDR-20D182KJ	1000	1465	1800(1620~1980	2970	10000A	750	320	-	-

VDR-20D Straight Leads Series

Dimension(mm) Straight Leads

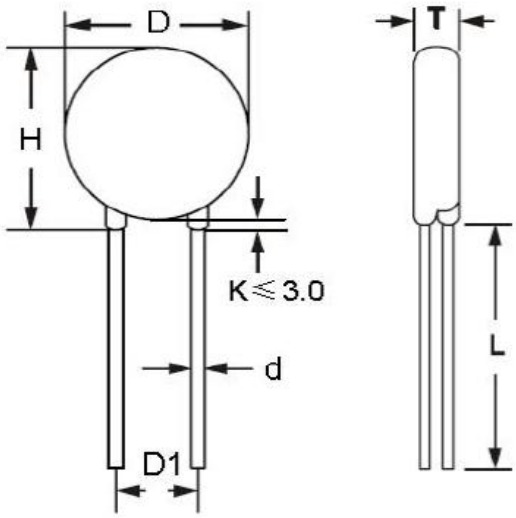


TABLE1		TABLE2			
Symbol	**Dimensions**	**Part number**	**T(±1.0mm)**	**Part number**	**T(±1.0mm)**
H(Max)	26.5mm	VDR-20D180L	3.95mm	VDR-20D361K	4.08mm
L(Min)	22.0mm	VDR-20D220K	4.04mm	VDR-20D391K	4.25mm
D(Max)	23.0mm	VDR-20D270K	4.19mm	VDR-20D431K	4.47mm
D1(±0.8)	7.5±0.8/10.0±1.0	VDR-20D330K	4.40mm	VDR-20D471K	4.69mm
T	TABLE2	VDR-20D390K	4.16mm	VDR-20D511K	4.91mm
d(±0.05)	0.8mm/1.0mm	VDR-20D470K	4.37mm	VDR-20D561K	5.18mm
		VDR-20D560K	4.02mm	VDR-20D621K	5.51mm
		VDR-20D680K	4.32mm	VDR-20D681K	5.84mm
		VDR-20D820K	3.48mm	VDR-20D751K	6.23mm
		VDR-20D101K	3.65mm	VDR-20D781K	6.39mm
		VDR-20D121K	3.80mm	VDR-20D821K	6.61mm
		VDR-20D151K	3.52mm	VDR-20D911K	6.87mm
		VDR-20D181K	3.66mm	VDR-20D102K	8.34mm
		VDR-20D201K	3.76mm	VDR-20D112K	8.86mm
		VDR-20D221K	3.84mm	VDR-20D122K	8.39mm
		VDR-20D241K	3.95mm	VDR-20D142K	9.96mm
		VDR-20D271K	4.00mm	VDR-20D162K	10.48mm
		VDR-20D301K	4.05mm	VDR-20D182K	11.53mm
		VDR-20D331K	4.22mm		

Packing Information

Part Number	Quantity	Packaging Option	Packaging Specification
VDR-20DxxxK	**250PCS**	**Plastic bag**	**Bulk Pack**

Notice for use

To avoid damage to other equipment due to fire or deterioration caused by varistor, please refer to and observe the following principles:

1) When a high current or high voltage flows into the varistor, the varistor itself may be damaged, heated, smoke, catch fire and burst.

To avoid this, fuses or circuit breakers can be installed at both ends of the varistor or power supply;

The fuses of the following specifications are for reference only:

Diameter	05D	07D	10D	14D	20D
Rated current of fuse	1-2A	2-3A	3-5A	3-10A	5-15A

2) Do not allow the current and energy flowing into the varistor to exceed its rated value.

3) The marked VDR product brand names and marks are all patent applications of the company. Customers who use or sell VDR products that are not specifically designated for such applications are at their own risk.

4) All VDR products, product specifications and data are subject to change without notice, please improve. For any data sheet Or any other data sheet. Any errors included. Inaccurate or incomplete shall not be liable.

5) Regarding the suitability of products for specific applications. It is the customer's responsibility to confirm that products with the characteristics described in the product specifications application. The data provided in the parameter data sheets and / or specifications may vary for different applications and performance may vary over time Variety. All operating parameters, including typical parameters, must be provided by the customer ’s technical experts. Product specifications will not expand or Modify the VDR procurement terms and conditions in other ways, including but not limited to the guarantees described therein.

6) Do not place flammable substances near the varistor.

7) The varistor can only emit a small amount of heat energy, so it is not suitable for use in equipment that often generates sudden heat.

In addition, the higher the working environment of the varistor, the smaller the proportion of heat dissipated. Varistors can only dissipate a small amount of heat energy, so they are not suitable for use in equipment that often generates sudden heat.

If a large amount of heat acts on the varistor in an instant, it is possible that the heat energy cannot be dissipated within the pulse time And the varistor is damaged.

8) When welding, please be careful not to melt the welding points of the varistor and the resin coating.

Material category policy

All products of VDR hereby certify that RoHS-compliant products are in accordance with the definitions and Restrictions on June 8, 2011 regarding restrictions on the use of certain hazardous substances (Reach) in electrical and electronic equipment. We confirm All VDR products comply with the IEC 61249-2-21 JEDEC JS709A standard.