

### Metal Oxide Varistors (MOV)

#### Features

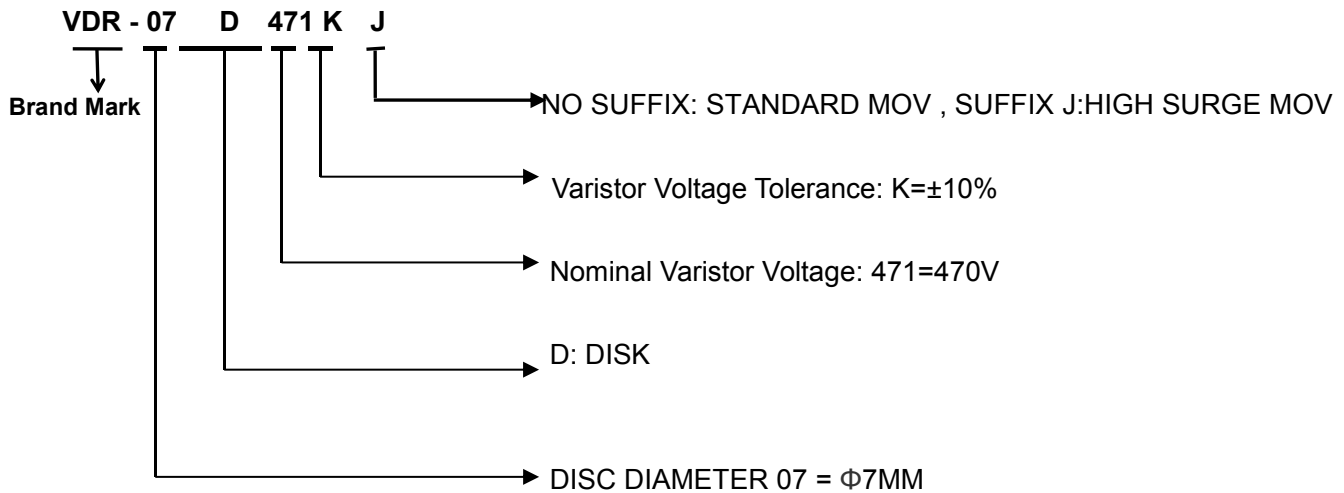
- Wide operating voltage (V1mA) range from 18V to 820V
- Fast responding to transient over-voltage
- Large absorbing transient energy capability
- Low clamping ratio and no follow-on current
- Meets MSL level 1, per J-STD-020
- Operating Temperature: -40°C ~ +85°C
- Storage Temperature: -40°C ~ +125°C
- 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
VDR07D180L~ VDR07D821K	13days	VDR07D180LJ ~ VDR07D821KJ	14days

Electrical Characteristics



Part Number	Maximum Allowable Voltage		Varistor Voltage V <sub>1mA</sub> (V)	Maximum Clamping Voltage V <sub>c</sub> (V)AT 10A	Max Surge Current I <sub>max</sub> 8/20μs	Maximum Energy (10/1000μs) (J)	Typical Capacitance (Reference) 1KHz(pf)	Safety Certification	
	V <sub>AC</sub> (V)	V <sub>DC</sub> (V)						UL / CUL	VDE
VDR07D180L	11	14	18(15.3~20.7)	36	250A	0.9	2800	√	√
VDR07D220K	14	18	22(19.8~24.2)	43	250A	1.1	2300	√	√
VDR07D270K	17	22	27(24.3~29.7)	53	250A	1.4	1800	√	√
VDR07D330K	20	26	33(29.7~36.3)	66	250A	1.7	1500	√	√
VDR07D390K	25	31	39(35.1~42.9)	77	250A	2.1	1300	√	√
VDR07D470K	30	38	47(42.3~51.7)	93	250A	2.5	1100	√	√
VDR07D560K	35	45	56(50.4~61.6)	100	250A	3.1	890	√	√
VDR07D680K	40	56	68(61.2~74.8)	135	250A	3.6	740	√	√
VDR07D820K	50	65	82(73.8~90.2)	135	1200A	5.0	600	√	√
VDR07D101K	60	85	100(90~110)	165	1200A	6.5	500	√	√
VDR07D121K	75	100	120(108~132)	200	1200A	7.8	420	√	√
VDR07D151K	95	125	150(135~165)	250	1200A	9.7	330	√	√
VDR07D181K	115	150	180(162~198)	300	1200A	11.7	280	√	√
VDR07D201K	130	170	200(180~220)	340	1200A	13.0	250	√	√
VDR07D221K	140	180	220(198~242)	360	1200A	14.0	230	√	√
VDR07D241K	150	200	240(216~264)	395	1200A	15.0	210	√	√
VDR07D271K	175	225	270(243~297)	455	1200A	18.0	185	√	√
VDR07D301K	190	250	300(270~330)	500	1200A	20.0	165	√	√
VDR07D331K	210	275	330(297~363)	550	1200A	23.0	150	√	√
VDR07D361K	230	300	360(324~396)	595	1200A	25.0	140	√	√
VDR07D391K	250	320	390(351~429)	650	1200A	25.0	130	√	√
VDR07D431K	275	350	430(387~473)	710	1200A	28.0	115	√	√
VDR07D471K	300	385	470(423~517)	775	1200A	30.0	105	√	√
VDR07D511K	320	415	510(459~561)	845	1200A	30.0	100	√	√
VDR07D561K	350	460	560(504~616)	925	1200A	30.0	90	√	√
VDR07D621K	385	505	620(558~682)	1025	1200A	33.0	80	√	-
VDR07D681K	420	560	680(612~748)	1120	1200A	33.0	75	√	-
VDR07D751K	460	615	750(675~825)	1240	1200A	65.0	70	√	-
VDR07D781K	485	640	780(702~858)	1290	1200A	65.0	70	√	-
VDR07D821K	510	670	820(738~902)	1355	1200A	65.0	60	√	-



Electrical Characteristics

Part Number	Maximum Allowable Voltage		Varistor Voltage V <sub>1mA</sub> (V)	Maximum Clamping Voltage V <sub>c</sub> (V)AT 10A	Max Surge Current I <sub>max</sub> 8/20μs	Maximum Energy (10/1000μs) (J)	Typical Capacitance (Reference) 1KHz(pf)	Safety Certification	
	V <sub>AC</sub> (V)	V <sub>DC</sub> (V)						UL / CUL	VDE
VDR07D180LJ	11	14	18(15.3~20.7)	36	500A	2.0	2800	-	-
VDR07D220KJ	14	18	22(19.8~24.2)	43	500A	2.4	2300	-	-
VDR07D270KJ	17	22	27(24.3~29.7)	53	500A	3.0	1800	-	-
VDR07D330KJ	20	26	33(29.7~36.3)	66	500A	3.5	1500	-	-
VDR07D390KJ	25	31	39(35.1~42.9)	77	500A	4.0	1300	-	-
VDR07D470KJ	30	38	47(42.3~51.7)	93	500A	5.0	1100	-	-
VDR07D560KJ	35	45	56(50.4~61.6)	100	500A	6.0	890	-	-
VDR07D680KJ	40	56	68(61.2~74.8)	135	500A	7.0	740	-	-
VDR07D820KJ	50	65	82(73.8~90.2)	135	1750A	10.0	600	-	-
VDR07D101KJ	60	85	100(90~110)	165	1750A	12.0	500	-	-
VDR07D121KJ	75	100	120(108~132)	200	1750A	13.0	420	-	-
VDR07D151KJ	95	125	150(135~165)	250	1750A	13.0	330	-	-
VDR07D181KJ	115	150	180(162~198)	300	1750A	16.0	280	-	-
VDR07D201KJ	130	170	200(180~220)	340	1750A	17.0	250	-	-
VDR07D221KJ	140	180	220(198~242)	360	1750A	19.0	230	-	-
VDR07D241KJ	150	200	240(216~264)	395	1750A	21.0	210	-	-
VDR07D271KJ	175	225	270(243~297)	455	1750A	24.0	185	-	-
VDR07D301KJ	190	250	300(270~330)	500	1750A	26.0	165	-	-
VDR07D331KJ	210	275	330(297~363)	550	1750A	28.0	150	-	-
VDR07D361KJ	230	300	360(324~396)	595	1750A	32.0	140	-	-
VDR07D391KJ	250	320	390(351~429)	650	1750A	35.0	130	-	-
VDR07D431KJ	275	350	430(387~473)	710	1750A	40.0	115	-	-
VDR07D471KJ	300	385	470(423~517)	775	1750A	42.0	105	-	-
VDR07D511KJ	320	415	510(459~561)	845	1750A	45.0	100	-	-
VDR07D561KJ	350	460	560(504~616)	925	1750A	49.0	90	-	-
VDR07D621KJ	385	505	620(558~682)	1025	1750A	58.0	80	-	-
VDR07D681KJ	420	560	680(612~748)	1120	1750A	60.0	75	-	-
VDR07D751KJ	460	615	750(675~825)	1240	1750A	67.0	70	-	-
VDR07D781KJ	485	640	780(702~858)	1290	1750A	67.0	70	-	-
VDR07D821KJ	510	670	820(738~902)	1355	1750A	70.0	60	-	-

Dimension(mm) Straight Leads

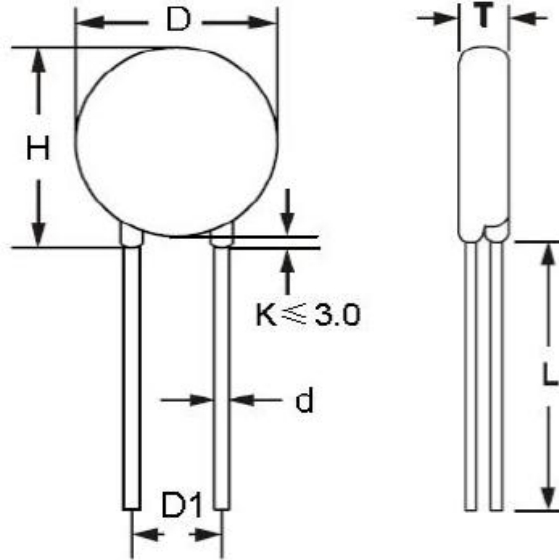


TABLE1

TABLE2

Symbol	Dimensions	Part number	T(±1.0mm)	Part number	T(±1.0mm)
H(Max)	11.0mm	VDR07D180L	2.5mm	VDR07D241K	2.6mm
L(Min)	22.0mm	VDR07D220K	2.6mm	VDR07D271K	2.9mm
D(Max)	9.0mm	VDR07D270K	2.7mm	VDR07D301K	3.0mm
D1(±0.8)	4.5mm	VDR07D330K	2.9mm	VDR07D331K	3.1mm
T	TABLE2	VDR07D390K	2.8mm	VDR07D361K	3.2mm
d(±0.05)	0.6mm	VDR07D470K	2.9mm	VDR07D391K	3.4mm
		VDR07D560K	3.0mm	VDR07D431K	3.7mm
		VDR07D680K	3.2mm	VDR07D471K	4.0mm
		VDR07D820K	2.1mm	VDR07D511K	4.2mm
		VDR07D101K	2.3mm	VDR07D561K	4.5mm
		VDR07D121K	2.5mm	VDR07D621K	5.1mm
		VDR07D151K	2.8mm	VDR07D681K	5.3mm
		VDR07D181K	2.3mm	VDR07D751K	5.03mm
		VDR07D201K	2.4mm	VDR07D781K	5.24mm
		VDR07D221K	2.5mm	VDR07D821K	5.48mm

Packing Information

Part Number	Quantity	Packaging Option	Packaging Specification
VDR07DxxxK	1000PCS	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.

Specifications are subject to change without notice

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Tel: +86-755-27465585

**HUAAN LIMITED**

[www.huaandz.com](http://www.huaandz.com)

Email: [sales@huaandz.com](mailto:sales@huaandz.com)



### Bulk Pack



### Ammo Pack

