

### Add Black Casing Metal Oxide Varistors (MOV)

#### Features

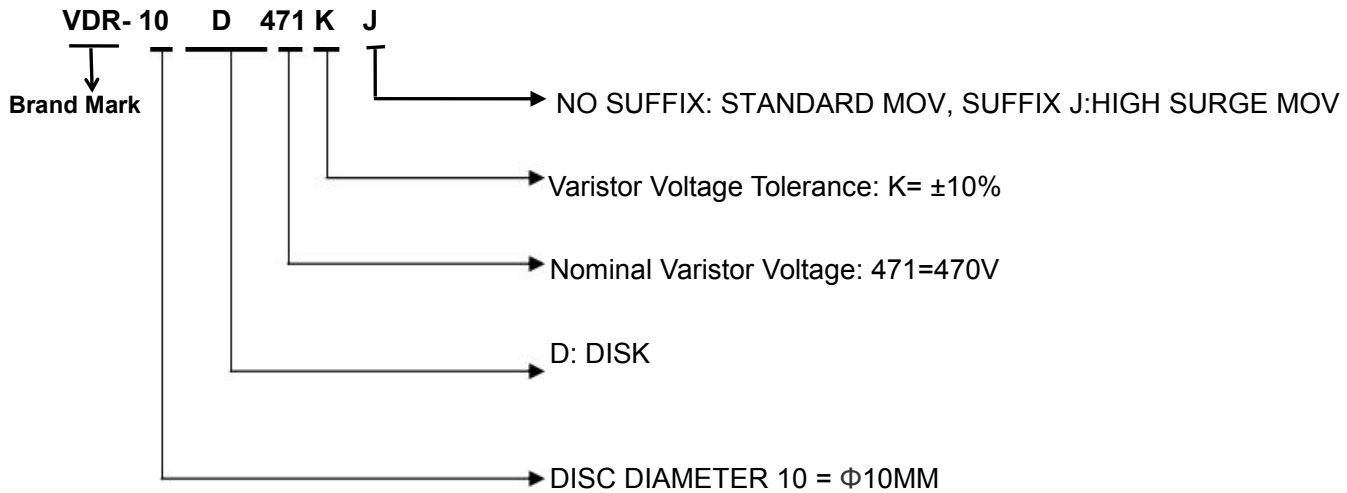
- Wide operating voltage (V1mA) range from 18V to 1100V
- Fast responding to transient over-voltage
- Large absorbing transient energy capability
- Low clamping ratio and no follow-on current
- Meets MSL level 1, per J-STD-020
- Operating Temperature: -40°C ~ +85°C
- Storage Temperature: -40°C ~ +125°C
- 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
VDR-10D180L ~ VDR-10D112K	13days	VDR-10D180LJ ~ VDR-10D112KJ	14days

Electrical Characteristics

Part Number	Maximum Allowable Voltage		Varistor Voltage $V_{1mA}(V)$	Maximum Clamping Voltage	Max Surge Current 8/20 $\mu$ s	Maximum Energy (10/1000 $\mu$ s)	Typical Capacitance (Reference)	Safety Certification	
	$V_{AC}(V)$	$V_{DC}(V)$		$V_c(V)$ AT 25A	$I_{max}$ Standard	(J) Standard	1KHz(pf)	UL / CUL	VDE
VDR-10D180L	11	14	18(15~21.6)	36	500A	2.1	5600	√	√
VDR-10D220K	14	18	22(19.5~26)	43	500A	2.5	4500	√	√
VDR-10D270K	17	22	27(24~30)	53	500A	3	3700	√	√
VDR-10D330K	20	26	33(29.5~36.5)	66	500A	4	3000	√	√
VDR-10D390K	25	31	39(35~43)	77	500A	4.6	2400	√	√
VDR-10D470K	30	38	47(42~54)	93	500A	5.5	2100	√	√
VDR-10D560K	35	45	56(50~62)	100	500A	7	1800	√	√
VDR-10D680K	40	56	68(61~75)	135	500A	8.2	1500	√	√
VDR-10D820K	50	65	82(74~90)	135	2500A	12	1200	√	√
VDR-10D101K	60	85	100(90~110)	165	2500A	15	1000	√	√
VDR-10D121K	75	100	120(108~132)	200	2500A	18	830	√	√
VDR-10D151K	95	125	150(135~165)	250	2500A	22	670	√	√
VDR-10D181K	115	150	180(162~198)	300	2500A	27	560	√	√
VDR-10D201K	130	170	200(180~220)	340	2500A	30	500	√	√
VDR-10D221K	140	180	220(198~242)	360	2500A	32	450	√	√
VDR-10D241K	150	200	240(216~264)	395	2500A	35	420	√	√
VDR-10D271K	175	225	270(243~297)	455	2500A	40	370	√	√
VDR-10D301K	190	250	300(270~330)	500	2500A	40	330	√	√
VDR-10D331K	210	275	330(297~363)	550	2500A	40	300	√	√
VDR-10D361K	230	300	360(324~396)	595	2500A	43	280	√	√
VDR-10D391K	250	320	390(351~429)	650	2500A	47	260	√	√
VDR-10D431K	275	350	430(387~473)	710	2500A	60	230	√	√
VDR-10D471K	300	385	470(423~517)	775	2500A	65	210	√	√
VDR-10D511K	320	415	510(459~561)	845	2500A	70	200	√	√
VDR-10D561K	350	460	560(504~616)	925	2500A	70	180	√	√
VDR-10D621K	385	505	620(558~682)	1025	2500A	70	160	√	√
VDR-10D681K	420	560	680(612~748)	1120	2500A	70	150	√	√
VDR-10D751K	460	615	750(675~825)	1240	2500A	70	130	√	√
VDR-10D781K	485	640	780(702~858)	1290	2500A	80	130	√	√
VDR-10D821K	510	670	820(738~902)	1355	2500A	85	120	√	√
VDR-10D911K	550	745	910(819~1001)	1500	2500A	93	110	√	√
VDR-10D102K	625	825	1000(900~1100)	1650	2500A	102	100	√	√
VDR-10D112K	680	895	1100(990~1210)	1815	2500A	115	90	√	√

Electrical Characteristics

Part Number	Maximum Allowable Voltage		Varistor Voltage V <sub>1mA</sub> (V)	Maximum Clamping Voltage V <sub>c</sub> (V) AT 25A	Max Surge Current 8/20μs I <sub>max</sub> High Surge	Maximum Energy (10/1000μs) (J) High Surge	Typical Capacitance (Reference) 1KHz(pf)	Safety Certification	
	V <sub>AC</sub> (V)	V <sub>DC</sub> (V)						UL / CUL	VDE
VDR-10D180LJ	11	14	18(15~21.6)	36	1000A	3.0	5600	-	-
VDR-10D220KJ	14	18	22(19.5~26)	43	1000A	5.0	4500	-	-
VDR-10D270KJ	17	22	27(24~30)	53	1000A	6.0	3700	-	-
VDR-10D330KJ	20	26	33(29.5~36.5)	66	1000A	7.0	3000	-	-
VDR-10D390KJ	25	31	39(35~43)	77	1000A	9.0	2400	-	-
VDR-10D470KJ	30	38	47(42~54)	93	1000A	11.0	2100	-	-
VDR-10D560KJ	35	45	56(50~62)	100	1000A	13.0	1800	-	-
VDR-10D680KJ	40	56	68(61~75)	135	1000A	15.0	1500	-	-
VDR-10D820KJ	50	65	82(74~90)	135	3500A	17.0	1200	-	-
VDR-10D101KJ	60	85	100(90~110)	165	3500A	18.0	1000	-	-
VDR-10D121KJ	75	100	120(108~132)	200	3500A	21.0	830	-	-
VDR-10D151KJ	95	125	150(135~165)	250	3500A	25.0	670	-	-
VDR-10D181KJ	115	150	180(162~198)	300	3500A	30.0	560	-	-
VDR-10D201KJ	130	170	200(180~220)	340	3500A	35.0	500	-	-
VDR-10D221KJ	140	180	220(198~242)	360	3500A	39.0	450	-	-
VDR-10D241KJ	150	200	240(216~264)	395	3500A	42.0	420	-	-
VDR-10D271KJ	175	225	270(243~297)	455	3500A	49.0	370	-	-
VDR-10D301KJ	190	250	300(270~330)	500	3500A	54.0	330	-	-
VDR-10D331KJ	210	275	330(297~363)	550	3500A	58.0	300	-	-
VDR-10D361KJ	230	300	360(324~396)	595	3500A	65.0	280	-	-
VDR-10D391KJ	250	320	390(351~429)	650	3500A	70.0	260	-	-
VDR-10D431KJ	275	350	430(387~473)	710	3500A	80.0	230	-	-
VDR-10D471KJ	300	385	470(423~517)	775	3500A	85.0	210	√	-
VDR-10D511KJ	320	415	510(459~561)	845	3500A	90.0	200	√	-
VDR-10D561KJ	350	460	560(504~616)	925	3500A	92.0	180	√	-
VDR-10D621KJ	385	505	620(558~682)	1025	3500A	95.0	160	√	-
VDR-10D681KJ	420	560	680(612~748)	1120	3500A	98.0	150	√	-
VDR-10D751KJ	460	615	750(675~825)	1240	3500A	100.0	130	-	-
VDR-10D781KJ	485	640	780(702~858)	1290	3500A	105.0	130	-	-
VDR-10D821KJ	510	670	820(738~902)	1355	3500A	110.0	120	-	-
VDR-10D911KJ	550	745	910(819~1001)	1500	3500A	130.0	110	-	-
VDR-10D102KJ	625	825	1000(900~1100)	1650	3500A	140.0	100	-	-
VDR-10D112KJ	680	895	1100(990~1210)	1815	3500A	155.0	90	-	-

Dimension(mm)

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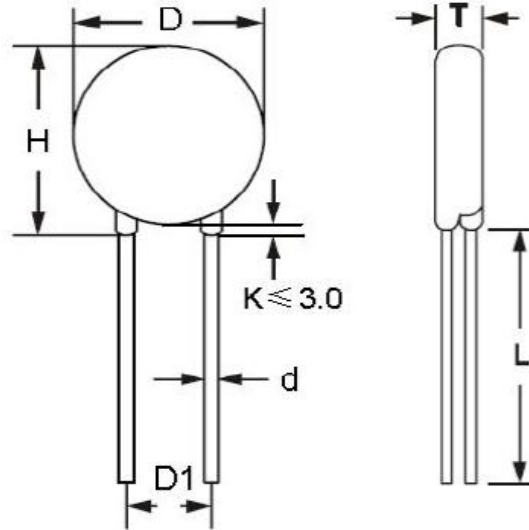


TABLE1

TABLE2

Symbol	Dimensions	Part number	T(±1.0mm)	Part number	T(±1.0mm)
H(Max)	16.5mm	VDR-10D180L	2.8mm	VDR-10D301K	3.7mm
L(Min)	22.0mm	VDR-10D220K	2.9mm	VDR-10D331K	4.0mm
D(Max)	12.5mm	VDR-10D270K	3.0mm	VDR-10D361K	4.2mm
D1(±0.8)	7.5mm	VDR-10D330K	3.2mm	VDR-10D391K	4.4mm
T	TABLE2	VDR-10D390K	3.5mm	VDR-10D431K	4.7mm
d(±0.05)	0.8mm	VDR-10D470K	3.6mm	VDR-10D471K	4.9mm
		VDR-10D560K	3.7mm	VDR-10D511K	5.0mm
		VDR-10D680K	3.8mm	VDR-10D561K	5.2mm
		VDR-10D820K	2.9mm	VDR-10D621K	5.5mm
		VDR-10D101K	3.1mm	VDR-10D681K	5.8mm
		VDR-10D121K	3.3mm	VDR-10D751K	6.2mm
		VDR-10D151K	2.8mm	VDR-10D781K	6.3mm
		VDR-10D181K	3.0mm	VDR-10D821K	6.5mm
		VDR-10D201K	3.2mm	VDR-10D911K	7.0mm
		VDR-10D221K	3.3mm	VDR-10D102K	7.5mm
		VDR-10D241K	3.4mm	VDR-10D112K	8.1mm
		VDR-10D271K	3.6mm	-	-

### Packing Information

Part Number	Quantity	Packaging Option	Packaging Specification
VDR-10DxxxK	500PCS	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.