14D Series Metal-Oxide Varistor

Bettel
Circuit protection components manufacturer & Brand operator

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

VDR 14 D 471 □ □ □ □ □

Brand Mark:
VDR

Size(mm):
5mm to 53mm

Type:
D: Disk, S: Square

Varistor Voltage:
180L(18V) to182K(1800V)

B: Bulk (Standard lead 20-30mm min.)
★= 3KA/6KV J = High Surge & High Energy

Coating & Environment:
L:Epoxy Coating & Lead-free

Series:
N:Standard Series

Bulk or Taping Mode:
B:Bulk★, **A**:Ammo, **R**:Reel

Lead Form:
S:Straight, **C**:Crimped, **I**:Inner, **Y**:Y kink

Tolerance:
K±10%, L±15%, M±20%

Ordering Information

Series	Amp code	Packaging Code	Qty
14D			

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ISO 14001:2004 No. 121108004-1
ISO 9001:2008: FM 517959

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Electrical Characteristics

Part No.	Maximum Allowable Voltage		Energy 10/1000μS		Withstanding Surge Current 8/20μS				Rated Power	Varistor Voltage	Max Clamping Voltage	Capacitance
	ACrms	DC	Standard	High Surge	Standard (A)		High Surge(A)		(W)	AT 1mA	AT 10A	1KHz
	(V)	(V)	(J)	(J)	1 TIME	2 TIME	1 TIME	2 TIME		(V)	(V)	pF
14D180L	10	14	6.6	7.0	1000	500	2000	1000	0.1	18(15-21)	38	11100
14D220K	14	18	7.6	8.0	1000	500	2000	1000	0.1	22(20-24)	43	9100
14D270K	17	22	9.7	10.0	1000	500	2000	1000	0.1	27(24-30)	53	7400
14D330K	20	26	12.3	12.5	1000	500	2000	1000	0.1	33(30-36)	65	6100
14D390K	25	31	13.2	13	1000	500	2000	1000	0.1	39(35-43)	77	5100
14D470K	30	38	16.8	17	1000	500	2000	1000	0.1	47(42-52)	93	4300
14D560K	35	45	19.6	20	1000	500	2000	1000	0.1	56(50-62)	110	3600
14D680K	40	56	23.8	24	1000	500	2000	1000	0.1	68(61-75)	135	2900

Part No.	Maximum Allowable Voltage		Energy 10/1000μS		Withstanding Surge Current 8/20μS				Rated Power	Varistor Voltage	Max Clamping Voltage	Capacitance
	ACrms	DC	Standard	High Surge	Standard (A)		High Surge(A)		(W)	AT 1mA	AT 50A	1KHz
	(V)	(V)	(J)	(J)	1 TIME	2 TIME	1 TIME	2 TIME		(V)	(V)	pF
14D820K	50	65	29.4	30.0	4500	2500	6000	5000	0.6	82(74-90)	135	2400
14D101K	60	85	33.6	35.0	4500	2500	6000	5000	0.6	100(90-110)	165	2000
14D121K	75	100	40.6	42.0	4500	2500	6000	5000	0.6	120(108-132)	200	1700
14D151K	95	125	51.8	53.0	4500	2500	6000	5000	0.6	150(135-165)	250	1300
14D181K	115	150	58.8	74.0	4500	2500	6000	5000	0.6	180(162-198)	300	1100
14D201K	130	170	75.2	78.6	4500	2500	6000	5000	0.6	200(185-225)	330	1000
14D221K	140	180	79.8	80.5	4500	2500	6000	5000	0.6	220(198-242)	360	900
14D241K	150	200	82.6	86.0	4500	2500	6000	5000	0.6	240(216-264)	395	830
14D271K	175	225	84.0	94.0	4500	2500	6000	5000	0.6	270(243-297)	455	740
14D301K	190	250	103	105	4500	2500	6000	5000	0.6	300(270-330)	505	670
14D331K	210	275	112	115	4500	2500	6000	5000	0.6	330(297-363)	550	610
14D361K	230	300	123	130	4500	2500	6000	5000	0.6	360(324-396)	595	560
14D391K	250	320	135	140	4500	2500	6000	5000	0.6	390(351-429)	650	510
14D431K	275	350	145	155	4500	2500	6000	5000	0.6	430(387-473)	710	460
14D471K	300	385	147	175	4500	2500	6000	5000	0.6	470(423-517)	775	430
14D511K	320	415	148	180	4500	2500	6000	5000	0.6	510(459-561)	845	390
14D561K	350	460	150	186	4500	2500	6000	5000	0.6	560(504-616)	920	360
14D621K	385	505	155	188	4500	2500	6000	5000	0.6	620(558-682)	1025	320
14D681K	420	560	160	190	4500	2500	6000	5000	0.6	680(612-748)	1120	290
14D751K	460	615	180	210	4500	2500	6000	5000	0.6	750(675-825)	1240	270
14D781K	485	640	190	211	4500	2500	6000	5000	0.6	780(702-858)	1290	260
14D821K	510	670	203	235	4500	2500	6000	5000	0.6	820 (738-902)	1355	230
14D911K	550	745	208	255	4500	2500	6000	5000	0.6	910 (819-1001)	1500	220
14D102K	625	825	212	280	4500	2500	6000	5000	0.6	1000(900-1100)	1650	200
14D112K	680	895	217	310	4500	2500	6000	5000	0.6	1100(990-1210)	1815	180
14D152K	900	1200	266	420	4500	2500	6000	5000	0.6	1500(1350-1650)	2475	130
14D182K	1000	1465	336	510	4500	2500	6000	5000	0.6	1800(1620-1980)	2970	110

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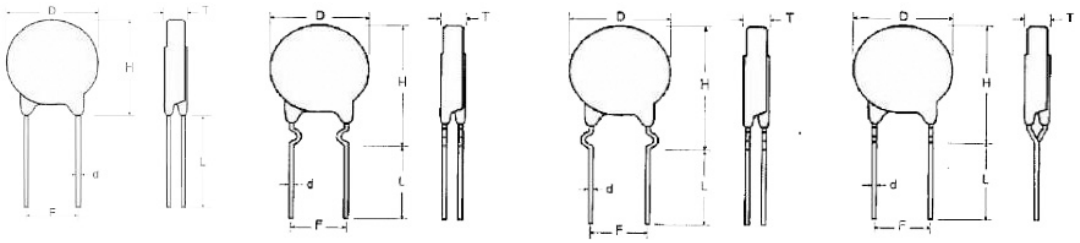
Product Dimensions (mm)

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				
14D182K	16.5	18	21	20	7.5	0.8	12.5
14D152K	16.5	18	21	20	7.5	0.8	11.0
14D112K	16.5	18	21	20	7.5	0.8	8.5
14D102K	16.5	18	21	20	7.5	0.8	7.8
14D911K	16.5	18	21	20	7.5	0.8	7.6
14D821K	16.5	18	21	20	7.5	0.8	7.2
14D781K	16.5	18	21	20	7.5	0.8	6.8
14D751K	16.5	18	21	20	7.5	0.8	6.5
14D681K	16.5	18	21	20	7.5	0.8	6.4
14D621K	16.5	18	21	20	7.5	0.8	6.4
14D561K	16.5	18	21	20	7.5	0.8	6.2
14D511K	16.5	18	21	20	7.5	0.8	5.8
14D471K	16.5	18	21	20	7.5	0.8	5.6
14D431K	16.5	18	21	20	7.5	0.8	5.3
14D391K	16.5	18	21	20	7.5	0.8	5.1
14D361K	16.5	18	21	20	7.5	0.8	5.0
14D331K	16.5	18	21	20	7.5	0.8	4.8
14D301K	16.5	18	21	20	7.5	0.8	4.7
14D271K	16.5	18	21	20	7.5	0.8	4.5
14D241K	16.5	18	21	20	7.5	0.8	4.3
14D221K	16.5	18	21	20	7.5	0.8	4.2
14D201K	16.5	18	21	20	7.5	0.8	4.1
14D181K	16.5	18	21	20	7.5	0.8	4.1
14D151K	16.5	18	21	20	7.5	0.8	4.8
14D121K	16.5	18	21	20	7.5	0.8	4.5
14D101K	16.5	18	21	20	7.5	0.8	4.3
14D820K	16.5	18	21	20	7.5	0.8	4.1
14D680K	16.5	18	21	20	7.5	0.8	4.1
14D560K	16.5	18	21	20	7.5	0.8	4.1
14D470K	16.5	18	21	20	7.5	0.8	4.5
14D390K	16.5	18	21	20	7.5	0.8	4.5
14D330K	16.5	18	21	20	7.5	0.8	4.2
14D270K	16.5	18	21	20	7.5	0.8	4.0
14D220K	16.5	18	21	20	7.5	0.8	4.0
14D180L	16.5	18	21	20	7.5	0.8	4.0

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