Part Number System

Example: VZ20D241KBOCX-VPN

V	Z	20	E	241	K	B	O	C	X	-	V	P	N
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		(11)	(12)	(13)

(1) Series
V = Varistor

(2) Type
Z = Zinc Oxide

(3) Disk Diameter
05 = 5mm, 07 = 7mm, 10 = 10mm, 14 = 14mm,
18 = 18mm, 20 = 20mm, 25 = 25mm, 32 = 32mm,
34 = 34mm, 40 = 40mm, 53 = 53mm

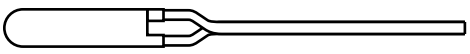
(4) Type
D = Standard
E = High Energy Type
R = (applicable only for 34mm Types)

(5) Varistor Voltage
241 = 24 x 10^1 = 240 (DC Volts)

(6) Tolerance
J = 5%, **K** = 10%

(7) Packing Code
B = Bulk Pack
(For taped parts packing code, see Taping Specifications.)
Note: For sizes 32 and larger please reference specification pages for fields beyond (6).

(8) Lead Configuration (For Bulk Parts)
S = Straight
O = Outward Crimp
I = Inward Crimp
L = Inline Crimp
N = Bulk parts for 320VAC and larger come standard with inline crimp (see illustration below) for straight disk seating on PC boards. If straight leads are required instead of inline crimp please use code "N" in the appropriate position as stated above.
Note: Also applicable for 32mm (KW Series) with wire leads.
R = Bare disk without leads (no epoxy).
Available in 20mm & 25mm disk sizes**(RoHS Compliant).



* Compliant with Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS Directive). Please note solderability profile on page 107.

** 32mm – 53mm types are also available as bare disk with and without leads. Reference suffix codes stated in Electrical/Dimensions section for these types in this catalog.

(9) Lead Cutting
A = 4.0 ± 1.0mm (.16" ± .04")
(Crimped lead)
B = 3.0 ± 1.0mm (.12" ± .04")
(Crimped lead)
C = 4.5 ± 1.5mm (.18" ± .06")
(Crimped lead)
D = 6.5 ± 1.0mm (.26" ± .04")
(Crimped lead)
E = 4.0 ± 1.0mm (.18" ± .04")
(Straight lead)
F = 5.0 ± 1.0mm (.2" ± .04")
(Crimped lead)
G = 3.3 ± 0.5mm (.13" ± .02")
(Crimped lead)
(For lead length reference points see Standard Lead Modifications).
Note: Also applicable for 32mm (KW Series) with wire leads.

(10) Lead Spacing
X = 10mm (0.4") lead spacing 1mm (0.039") lead diameter). (For 18mm and 20mm disk diameter only.)
Z = 5mm (0.2") leadspacing.
(For 10mm and 14mm disk diameters.)

(11) Extremely High Energy Rating
V = 15KA for 20mm,12KA for 18mm and 7.5KA for 14mm, "E Series" parts only. Available in varistor voltages 14mm and 20mm (181-112), 18mm (181-781) (UL1449 and CUL 3rd Edition recognized parts). CSA recognized for 14, 18 & 20mm "E Series" parts all values ≥ 201 with the exception of 14E (911, 102 & 112). 14E "V" series parts are rated at 7.5KA. (If you have a special voltage request, please inquire). C/US certified File #154862 for 14 & 20mm (181-112) and 18mm (181-781).

(12) Coating Option
P = Phenolic Coating with 2000VDC rating. Applicable UL1449 and CUL 3rd Edition (14mm, 18mm and 20mm "V" type only), and CSA (5mm – 20mm) recognized parts. C/US certified File #154862 for 14, 18 & 20mm "E Series" (181-821).
B = Phenolic Coating with 500VDC rating. Applicable for CSA (5mm - 20mm) recognized parts. C/US certified File #154862 for 14, 18 & 20mm "E Series" (181-821).
Y= Bare disk with leads (no epoxy).
Available in 20mm disk size** (RoHS Compliant 20E suffix "V" 181K - 471K CSA c/us certified File #154862).
C= Halogen Free Coating. Applicable for UL1449 and CUL (3rd Edition) and VDE (14D, 14E, 18E and 20E only).

(13) RoHS Compliant*
N = RoHS Compliant
(Available in disk sizes 5mm – 53mm)

D Series — Electrical Characteristics (5, 7, 10, 14, 20, 25 mm) (cont.)

Part Number	Maximum Continuous Rated Voltage		Rated Single Pulse Transient			Varistor Voltage @1mA DC		Maximum Clamping Voltage @Test Current 8/20µs		Typical Capacitance @1KHZ 25°C
			Energy		Peak					
	AC RMS Volts	DC Volts	2ms Joules	10/1000µs Joules	8/20µs Amps	Min Volts	Max Volts	Volts	Amps	pF
VZ05D560KBS	35	45	1.5	1.9	100	50	62	110	1	400
VZ07D560KBS			2.5	3.1	250			110	2.5	890
VZ10D560KBS			5.5	7.0	500			110	5	2400
VZ14D560KBS			10	11	1000			110	10	4800
VZ20D560KBS			35	38	2000			110	20	8000
VZ05D680KBS	40	56	1.8	2.3	100	61.2	74.8	135	1	360
VZ07D680KBS			3.0	3.8	250			135	2.5	850
VZ10D680KBS			6.5	8.2	500			135	5	2100
VZ14D680KBS			13	14	1000			135	10	4000
VZ20D680KBS			40	43	2000			135	20	6800
VZ05D820KBS	50	66	2.4	3.0	400	74	90	135	5	350
VZ07D820KBS			4.2	5.5	1200			135	10	830
VZ10D820KBS			8.4	12	2500			135	25	1600
VZ14D820KBS			15	22	4500			135	50	3300
VZ20D820KBS			37	48	6500			135	100	5600
VZ05D101KBS	60	85	2.4	3.5	400	90	110	165	5	320
VZ07D101KBS			4.8	6.5	1200			165	10	730
VZ10D101KBS			10	15	2500			165	25	1400
VZ14D101KBS			20	30	4500			165	50	2900
VZ20D101KBS			38	50	6500			165	100	4700
VZ05D121KBS	75	102	3.0	5.0	400	108	132	200	5	250
VZ07D121KBS			5.9	7.8	1200			200	10	570
VZ10D121KBS			12	18	2500			200	25	1200
VZ14D121KBS			22	34	4500			200	50	2600
VZ20D121KBS			40	55	6500			200	100	4100

D Series — Electrical Characteristics (5, 7, 10, 14, 20, 25 mm) (cont.)

Part Number	Maximum Continuous Rated Voltage		Rated Single Pulse Transient			Varistor Voltage @1mA DC		Maximum Clamping Voltage @Test Current 8/20µs		Typical Capacitance @1KHZ 25°C
			Energy		Peak					
	AC RMS Volts	DC Volts	2ms Joules	10/1000µs Joules	8/20µs Amps	Min Volts	Max Volts	Volts	Amps	pF
VZ05D151KBS	95	127	3.5	5.5	400	135	165	250	5	180
VZ07D151KBS			7.6	9.7	1200			250	10	400
VZ10D151KBS			16	22	2500			250	25	1100
VZ14D151KBS			30	45	4500			250	50	2000
VZ20D151KBS			50	70	6500			250	100	3200
VZ05D181KBS	120	160	4.2	8.0	400	170	207	320	5	155
VZ07D181KBS			8.8	12	1200			300	10	305
VZ10D181KBS			18.5	27.5	2500			300	25	700
VZ14D181KBS			33	53	4500			300	50	1400
VZ20D181KBS			60	85	10000			300	100	2500
VZ25D181KBS			90	180	18000			300	100	3900
VZ05D201KBS	130	175	5.0	8.5	400	184	224	340	5	140
VZ07D201KBS			10	13	1200			340	10	275
VZ10D201KBS			20	30	2500			300	25	640
VZ14D201KBS			38	60	4500			300	50	1370
VZ20D201KBS			70	95	10000			300	100	2200
VZ25D201KBS			—	200	20000			300	100	3600
VZ05D221KBS	140	180	6.0	9.0	400	198	242	360	5	125
VZ07D221KBS			11	14	1200			360	10	250
VZ10D221KBS			23	32	2500			360	25	600
VZ14D221KBS			40	60	4500			360	50	1150
VZ20D221KBS			75	100	10000			360	100	2000
VZ25D221KBS			—	225	20000			360	100	3300
VZ05D241KBS	150	200	6.5	10	400	216	264	395	5	115
VZ07D241KBS			11	16	1200			395	10	230
VZ10D241KBS			25	35	2500			395	25	560
VZ14D241KBS			45	66	4500			395	50	1060
VZ20D241KBS			82	120	10000			395	100	1900
VZ25D241KBS			—	235	20000			395	100	3000

D Series — Electrical Characteristics (5, 7, 10, 14, 20, 25 mm) (cont.)

Part Number	Maximum Continuous Rated Voltage		Rated Single Pulse Transient			Varistor Voltage @1mA DC		Maximum Clamping Voltage @Test Current 8/20µs		Typical Capacitance @1KHZ 25°C
			Energy		Peak					
	AC RMS Volts	DC Volts	2ms Joules	10/1000µs Joules	8/20µs Amps	Min Volts	Max Volts	Volts	Amps	pF
VZ05D271KBS	180	230	7.5	11	400	255	311	475	5	105
VZ07D271KBS			13	18	1200			455	10	205
VZ10D271KBS			30	40	2500			455	25	500
VZ14D271KBS			52	72	4500			455	50	950
VZ20D271KBS			90	127	10000			455	100	1700
*VZ25D271KBS			—	245	20000			465	100	2600
VZ05D301KBS	195	250	8.0	11.5	400	270	330	525	5	95
VZ07D301KBS			13	19	1200			505	10	185
VZ10D301KBS			32	42.5	2500			505	25	450
VZ14D301KBS			56	78	4500			505	50	890
VZ20D301KBS			100	135	10000			505	100	1540
VZ25D301KBS			—	255	20000			505	100	2400
VZ05D331KBS	210	275	8.5	11.7	400	297	363	540	5	85
VZ07D331KBS			14	20	1200			540	10	170
VZ10D331KBS			33.5	44.5	2500			540	25	415
VZ14D331KBS			63	87	4500			540	50	800
VZ20D331KBS			110	148	10000			540	100	1400
*VZ25D331KBS			—	270	20000			540	100	2200
VZ05D361KBS	230	300	9.0	13	400	324	396	595	5	80
VZ07D361KBS			17	25	1200			595	10	155
VZ10D361KBS			36	47	2500			595	25	380
VZ14D361KBS			70	98	4500			595	50	725
VZ20D361KBS			120	163	10000			595	100	1320
VZ25D361KBS			—	315	20000			595	100	2100
VZ05D391KBS	250	330	10	15	400	351	429	650	5	75
VZ07D391KBS			19	26	1200			650	10	145
VZ10D391KBS			40	60	2500			650	25	350
VZ14D391KBS			72	102	4500			650	50	665
VZ20D391KBS			130	180	10000			650	100	1210
VZ25D391KBS			—	342	20000			650	100	1900

D Series — Electrical Characteristics (5, 7, 10, 14, 20, 25 mm) (cont.)

Part Number	Maximum Continuous Rated Voltage		Rated Single Pulse Transient			Varistor Voltage @1mA DC		Maximum Clamping Voltage @Test Current 8/20µs		Typical Capacitance @1KHZ 25°C
			Energy		Peak					
	AC RMS Volts	DC Volts	2ms Joules	10/1000µs Joules	8/20µs Amps	Min Volts	Max Volts	Volts	Amps	pF
VZ05D431KBS	275	370	11	16	400	387	473	710	5	65
VZ07D431KBS			21	28	1200			710	10	130
VZ10D431KBS			45	65	2500			710	25	310
VZ14D431KBS			75	115	4500			710	50	600
VZ20D431KBS			140	190	10000			710	100	1120
VZ25D431KBS			—	370	20000			710	100	1700
VZ05D471KBS	300	385	13	19	400	423	517	775	5	55
VZ07D471KBS			23	30	1200			775	10	115
VZ10D471KBS			47	70	2500			775	25	280
VZ14D471KBS			80	125	4500			775	50	570
VZ20D471KBS			150	220	10000			775	100	1000
VZ25D471KBS			—	390	20000			775	100	1600
VZ05D511KBS	320	420	15	21	400	459	561	865	5	39
VZ07D511KBS			23	32	1200			850	10	82
VZ10D511KBS			50	71	2500			840	25	260
VZ14D511KBS			84	128	4500			840	50	530
VZ20D511KBS			152	222	10000			840	100	950
VZ25D511KBS			—	422	20000			840	100	1500
VZ05D561KBS	360	470	17	25	400	522	638	960	5	36
VZ07D561KBS			27	39	1200			960	10	75
VZ10D561KBS			48	72	2500			910	25	240
VZ14D561KBS			85	139	4500			950	50	480
VZ20D561KBS			154	226	10000			910	100	900
VZ25D561KBS			—	460	20000			910	100	1300
VZ05D621KBS	390	505	19	27	400	558	682	1040	5	33
VZ07D621KBS			29	43	1200			1040	10	68
VZ10D621KBS			49	73	2500			1025	25	150
VZ14D621KBS			88	142	4500			1025	50	270
VZ20D621KBS			158	228	10000			1025	100	770
VZ25D621KBS			—	495	20000			1025	100	1200

D Series — Electrical Characteristics (5, 7, 10, 14, 20, 25 mm) (cont.)

Part Number	Maximum Continuous Rated Voltage		Rated Single Pulse Transient			Varistor Voltage @1mA DC		Maximum Clamping Voltage @Test Current 8/20µs		Typical Capacitance @1KHZ 25°C
			Energy		Peak					
	AC RMS Volts	DC Volts	2ms Joules	10/1000µs Joules	8/20µs Amps	Min Volts	Max Volts	Volts	Amps	pF
VZ05D681KBS	420	560	21	30	400	612	748	1120	5	30
VZ07D681KBS			32	45	1200			1120	10	62
VZ10D681KBS			50	74	2500			1120	25	130
VZ14D681KBS			90	142	4500			1120	50	240
VZ20D681KBS			160	230	10000			1120	100	700
VZ25D681KBS			—	515	20000			1120	100	1100
VZ10D751KBS	460	615	51	75	2500	675	825	1240	25	120
VZ14D751KBS			100	143	4500			1240	50	210
VZ20D751KBS			175	255	10000			1240	100	640
VZ25D751KBS			—	530	20000			1240	100	1000
VZ10D781KBS	485	640	52	80	2500	702	858	1290	25	120
VZ14D781KBS			105	148	4500			1240	50	205
VZ20D781KBS			180	265	10000			1240	100	590
VZ25D781KBS			—	540	20000			1240	100	990
VZ10D821KBS	510	675	55	85	2500	738	902	1350	25	110
VZ14D821KBS			110	157	4500			1350	50	200
VZ20D821KBS			195	282	10000			1350	100	510
VZ25D821KBS			—	550	20000			1350	100	920
VZ10D911KBS	550	745	60	93	2500	819	1001	1400	25	90
VZ14D911KBS			120	175	4500			1400	50	175
VZ20D911KBS			215	310	10000			1400	100	430
VZ25D911KBS			—	600	20000			1400	100	860
VZ10D102KBS	625	825	68	102	2500	900	1100	1650	25	80
VZ14D102KBS			130	190	4500			1620	50	145
VZ20D102KBS			230	342	10000			1620	100	380
VZ25D102KBS			—	630	20000			1620	100	760
VZ10D112KBS	680	895	72	115	2500	957.6	1170.4	1815	25	70
VZ14D112KBS			140	215	4500			1800	50	140
VZ20D112KBS			250	383	10000			1800	100	340
VZ25D112KBS			—	700	20000			1800	100	690