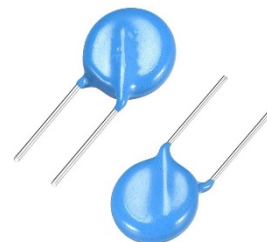


General epoxy Metal Oxide Varistor



◆ Product Introduction

Epoxy-encapsulated zinc oxide varistors use an integrated epoxy resin coating sealing structure, offering high insulation grades to resist moisture, high and low temperature circulation, and chemical media corrosion, thereby avoiding the risk of moisture deterioration in ceramic chips; The components feature ultra-fast response speed, stable varistor voltage, and high energy tolerance, capable of instantaneously discharging surge current and limiting overvoltage amplitude to prevent impact damage to backend components; Epoxy substrates reach V0 resistance fuel resistance level, reducing the risk of faults and fires. The entire product line meets environmental protection and multi-national safety certifications, with multiple packaging specifications for plug-ins and patches available and adaptable high-power industrial surge protection for photovoltaics, frequency converters, charging piles, security equipment, and more.

◆ Features

1. Nominal varistor voltage (V_{1ma}) Wide applicable range: 18V~1600V
2. Fast response speed for transient overvoltage
3. Transient surge energy absorption capacity is large
4. Low clamping ratio, no follow-up flow
5. Complies with J-STD-020 standard, moisture sensitivity level MSL 1
6. Operating environment temperature: $-40^{\circ}\text{C} \sim +105^{\circ}\text{C}$
7. Storage temperature: $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$
8. Safety certifications: Complete UL, CSA, and VDE certifications

◆ Application

1. Protection for semiconductor devices such as transistors, diodes, integrated circuits, thyristors, and bidirectional thyristors
2. Surge protection for consumer electronics
3. Surge protection for industrial electronic products
4. Surge protection for household appliances and oil and gas equipment throughout the entire machine
5. Relays and solenoid valves absorb surge suction

◆ Coding principles

1	2	3	4		5		6	7	10		11		12	13
Varistor voltage			Tolerance		Type		Component diameter		Impact series		Wire shape		Packaging method	
180	18V		K	±10%	D	Disc-shaped	05	Φ05mm	Without suffix	Standard type	No rear	Straight lead	Without suffix	Bulk
101	100V						07	Φ07mm	J	High wave type	0	External crimping leads	TB	Tape & Box & P0=12.7mm
							10	Φ10mm			F	Y-shaped curved wire	TR	Tape & Reel & P0=12.7mm
							14	Φ14mm					EB	Tape & Box & P0=15.0mm
							20	Φ20mm					ER	Tape & Reel & P0=15.0mm
							25	Φ25mm						
							32	Φ32mm						
							40	Φ40mm						
							53	Φ53mm						

YAGEO SENSOR

◆ KD/KD-J Series

● Structure and dimensions-05D KD/KD-J

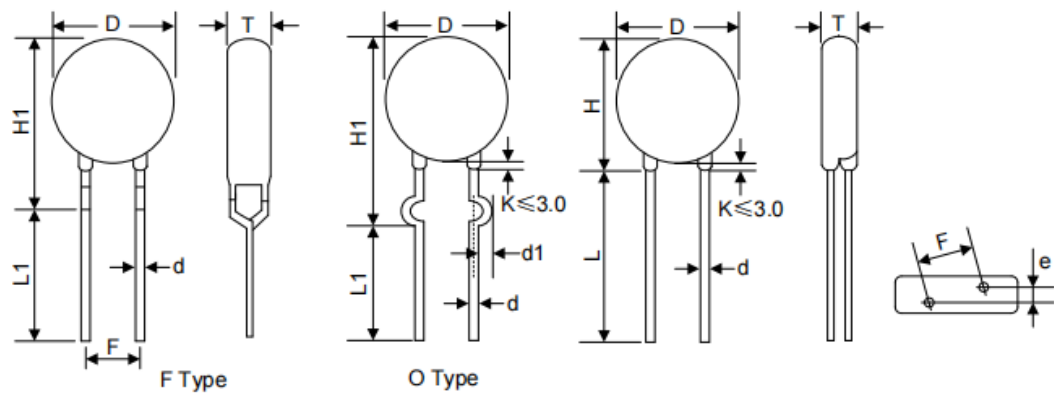


Table 1	
Units:mm	
Symbols	Dimensions
H	5.5~10.0
H1	8.0~13.0
L(min.)	20.0
L1(min.)	15.0
D	5.0~7.5
F(±0.8)	5.0
T	Table 2
e(±0.8)	Table 2
d(±0.05)	0.6
d1(±0.4)	1.2

Table 2					
Units:mm					
Model	T	e	Model	T	e
180K	1.5~4.5	1.3	221K	2.0~4.5	1.9
220K	1.6~4.6	1.4	241K	2.1~4.6	2.0
270K	1.6~4.7	1.6	271K	2.1~4.9	2.2
330K	1.7~4.9	1.5	301K	2.2~5.0	2.3
390K	1.6~4.8	1.6	331K	2.2~5.1	2.3
470K	1.7~4.9	1.7	361K	2.4~5.2	2.5
560K	1.8~5.0	1.9	391K	2.5~5.4	2.6
680K	1.9~5.2	2.2	431K	2.7~5.7	2.8
820K	1.6~4.1	1.6	471K	2.8~6.0	3.0
101K	1.9~4.3	1.8	511K	2.9~6.2	3.2
121K	1.9~4.5	2.0	561K	3.1~6.5	3.4
151K	1.7~4.8	1.6	621K	3.3~6.5	3.7
181K	1.8~4.3	1.7	681K	3.5~6.8	4.0
201K	1.9~4.4	1.8	751K	3.8~6.9	4.1

◆ KD/KD-J Series

● Electrical Characteristics-05D KD/KD-J

Part Number		Maximum allowed voltage		Varistor Voltage	Maximum holding voltage		Able to withstand surges Current		Maximum energy (10/1000μs)		Rated power	Typical capacitors (Reference value)
Standard	High impact	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A) Standard	I (A) High impact	(J) Standard	(J) High impact	(W)	@1KHz (pf)
180KD05	180KD05J	11	14	18(15~21.6)	1	40	100	250	0.4	0.6	0.01	1400
220KD05	220KD05J	14	18	22(19.5~26)	1	48	100	250	0.5	0.7	0.01	1150
270KD05	270KD05J	17	22	27(24~31)	1	60	100	250	0.6	0.9	0.01	930
330KD05	330KD05J	20	26	33(29.5~36.5)	1	73	100	250	0.8	1.1	0.01	760
390KD05	390KD05J	25	31	39(35~43)	1	80	100	250	0.9	1.2	0.01	640
470KD05	470KD05J	30	38	47(42~52)	1	104	100	250	1.1	1.5	0.01	530
560KD05	560KD05J	35	45	56(50~62)	1	123	100	250	1.3	1.8	0.01	450
680KD05	680KD05J	40	56	68(61~75)	1	145	100	250	1.6	2.2	0.01	370
820KD05	820KD05J	50	65	82(74~90) 5	5	150	400	800	2.5	4.0	0.1	300
101KD05	101KD05J	60	85	100(90~110)	5	177	400	800	3.0	4.1	0.1	250
121KD05	121KD05J	75	100	120(108~132)	5	210	400	800	4.0	4.9	0.1	210
151KD05	151KD05J	95	125	150(135~165)	5	260	400	800	4.1	6.5	0.1	165
181KD05	181KD05J	115	150	180(162~198)	5	320	400	800	4.9	7.5	0.1	140
201KD05	201KD05J	130	170	200(180~220)	5	355	400	800	6.5	8.5	0.1	125
221KD05	221KD05J	140	180	220(198~242)	5	380	400	800	7.5	9.0	0.1	110
241KD05	241KD05J	150	200	240(216~264)	5	415	400	800	8.0	10.5	0.1	100
271KD05	271KD05J	175	225	270(243~297)	5	475	400	800	8.5	11.0	0.1	95
301KD05	301KD05J	190	250	300(270~330)	5	520	400	800	9.0	12.0	0.1	85
331KD05	331KD05J	210	275	330(297~363)	5	570	400	800	9.5	13.0	0.1	75
361KD05	361KD05J	230	300	360(324~396)	5	620	400	800	10.0	16.0	0.1	70
391KD05	391KD05J	250	320	390(351~429)	5	675	400	800	12.0	17.0	0.1	65

Note: 1. Voltage variable resistors can withstand voltages between 18V and 27V, with tolerances exceeding 10%.

2. Leakage current (@V1mA 的 83%) : $IR \leq 50\mu A$ (180K~680K) $IR \leq 25\mu A$ (820K~751K)

◆ KD/KD-J Series

● Electrical Characteristics -05D KD/KD-J

Part number		Maximum allowed voltage		Varistor Voltage	Maximum holding voltage		Able to withstand surges Current		Maximum energy (10/1000μs)		Rated power	Typical capacitors (Reference value)
Standard	High impact	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A) Standard	I (A) High impact	(J) Standard	(J) High impact	(W)	@1KHz (pf)
431KD05	431KD05J	275	350	430(387~473)	5	745	400	800	13.0	20.0	0.1	60
471KD05	471KD05J	300	385	470(423~517)	5	810	400	800	15.0	21.0	0.1	55
511KD05	511KD05J	320	415	510(459~561)	5	845	400	800	16.0	22.5	0.1	50
561KD05	561KD05J	350	460	560(504~616)	5	920	400	800	16.8	24.0	0.1	45
621KD05	621KD05J	385	505	620(558~682)	5	1025	400	800	17.7	25.0	0.1	440
681KD05	681KD05J	420	560	680(612~748)	5	1120	400	800	21.0	29.0	0.1	35
751KD05	751KD05J	460	615	750(675~825)	5	1240	400	800	22.4	32.0	0.1	30

Note: 1. Voltage variable resistors can withstand voltages between 18V and 27V, with tolerances exceeding 10%.

2. Leakage current (@V1mA 的 83%) : $IR \leq 50\mu A$ (180K~680K) $IR \leq 25\mu A$ (820K~751K)

YAGEO SENSOR

◆ KD/KD-J Series

● Structure and Dimensions-07D KD/KD-J

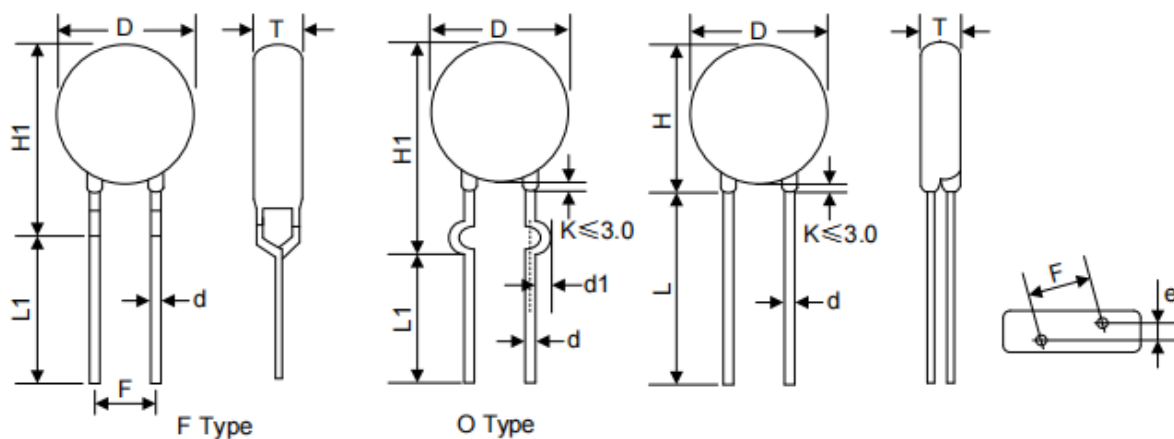


Table 1	
Units:mm	
Symbols	Dimensions
H	7.5~12.0
H1	9.0~13.5
L(min.)	20.0
L1(min.)	15.0
D	7.0~9.0
F(±0.8)	5.0
T	Table 2
e(±0.8)	Table 2
d(±0.05)	0.6
d1(±0.4)	1.2

Table 2					
Units:mm					
Model	T	e	Model	T	e
180K	1.5~4.5	1.3	241K	2.1~4.6	2.0
220K	1.6~4.6	1.4	271K	2.1~4.9	2.2
270K	1.6~4.7	1.6	301K	2.2~5.0	2.3
330K	1.7~4.9	1.5	331K	2.2~5.1	2.3
390K	1.6~4.8	1.6	361K	2.4~5.2	2.5
470K	1.7~4.9	1.7	391K	2.5~5.4	2.6
560K	1.8~5.0	1.9	431K	2.7~5.7	2.8
680K	1.9~5.2	2.2	471K	2.8~6.0	3.0
820K	1.6~4.1	1.6	511K	2.9~6.2	3.2
101K	1.9~4.3	1.8	561K	3.1~6.5	3.4
121K	1.9~4.5	2.0	621K	3.3~7.1	3.7
151K	1.7~4.8	1.6	681K	3.5~7.3	4.0
181K	1.8~4.3	1.7	751K	3.8~7.0	4.1
201K	1.9~4.4	1.8	781K	3.9~7.2	4.2
221K	2.0~4.5	1.9	821K	4.1~7.5	4.4

◆ KD/KD-J Series

● Electrical Characteristics-07D KD/KD-J

Part number		Maximum allowed voltage		Varistor Voltage	Maximum holding voltage		Able to withstand surges Current		Maximum energy (10/1000μs)		Rated power	Typical capacitors (Reference value)
Standard	High impact	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A) Standard	I (A) High impact	(J) Standard	(J) High impact	(W)	@1KHz (pf)
180KD07	180KD07J	11	14	18(15~21.6)	2.5	40	250	500	0.9	2.0	0.02	2800
220KD07	220KD07J	14	18	22(19.5~26)	2.5	48	250	500	1.1	2.4	0.02	2300
270KD07	270KD07J	17	22	27(24~31)	2.5	60	250	500	1.4	3.0	0.02	1800
330KD07	330KD07J	20	26	33(29.5~36.5)	2.5	73	250	500	1.7	3.5	0.02	1500
390KD07	390KD07J	25	31	39(35~43)	2.5	80	250	500	2.1	4.0	0.02	1300
470KD07	470KD07J	30	38	47(42~52)	2.5	104	250	500	2.5	5.0	0.02	1100
560KD07	560KD07J	35	45	56(50~62)	2.5	123	250	500	3.1	6.0	0.02	890
680KD07	680KD07J	40	56	68(61~75)	2.5	145	250	500	3.6	7.0	0.02	740
820KD07	820KD07J	50	65	82(74~90) 5	10	150	1200	1750	5	10.0	0.25	600
101KD07	101KD07J	60	85	100(90~110)	10	177	1200	1750	6.5	12.0	0.25	500
121KD07	121KD07J	75	100	120(108~132)	10	210	1200	1750	7.8	13.0	0.25	420
151KD07	151KD07J	95	125	150(135~165)	10	260	1200	1750	9.7	15.0	0.25	330
181KD07	181KD07J	115	150	180(162~198)	10	320	1200	1750	11.7	16.0	0.25	280
201KD07	201KD07J	130	170	200(180~220)	10	355	1200	1750	13.0	17.0	0.25	250
221KD07	221KD07J	140	180	220(198~242)	10	380	1200	1750	14.0	19.0	0.25	230
241KD07	241KD07J	150	200	240(216~264)	10	415	1200	1750	15.0	21.0	0.25	210
271KD07	271KD07J	175	225	270(243~297)	10	475	1200	1750	18.0	24.0	0.25	185
301KD07	301KD07J	190	250	300(270~330)	10	520	1200	1750	20.0	26.0	0.25	165
331KD07	331KD07J	210	275	330(297~363)	10	570	1200	1750	23.0	28.0	0.25	150
361KD07	361KD07J	230	300	360(324~396)	10	620	1200	1750	14.0	32.0	0.25	140
391KD07	391KD07J	250	320	390(351~429)	10	675	1200	1750	26.0	35.0	0.25	130

Note: 1. Voltage variable resistors can withstand voltages between 18V and 27V, with tolerances exceeding 10%.

2. Leakage current (@V1mA 的 83%) : $I_R \leq 50\mu A$ (180K~680K) $I_R \leq 25\mu A$ (820K~751K)

◆ KD/KD-J Series

● Electrical Characteristics-07D KD/KD-J

Part number		Maximum allowed voltage		Varistor Voltage	Maximum holding voltage		Able to withstand surges Current		Maximum energy (10/1000μs)		Rated power	Typical capacitors (Reference value)
Standard	High impact	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A) Standard	I (A) High impact	(J) Standard	(J) High impact	(W)	@1KHz (pf)
431KD07	431KD07J	275	350	430(387~473)	10	745	1200	1750	28.0	40.0	0.25	115
471KD07	471KD07J	300	385	470(423~517)	10	810	1200	1750	29.0	42.0	0.25	105
511KD07	511KD07J	320	415	510(459~561)	10	845	1200	1750	31.0	45.0	0.25	100
561KD07	561KD07J	350	460	560(504~616)	10	920	1200	1750	35.0	49.0	0.25	90
621KD07	621KD07J	385	505	620(558~682)	10	1025	1200	1750	38.0	55.0	0.25	80
681KD07	681KD07J	420	560	680(612~748)	10	1120	1200	1750	42.0	60.0	0.25	75
751KD07	751KD07J	460	615	750(675~825)	10	1240	1200	1750	45.0	64.0	0.25	70
781KD07	781KD07J	485	640	780(702~858)	10	1290	1200	1750	48.0	69.0	0.25	65
821KD07	821KD07J	510	670	820(738~902)	10	1355	1200	1750	52.0	73.0	0.25	60

Note: 1. Voltage variable resistors can withstand voltages between 18V and 27V, with tolerances exceeding 10%.

2. Leakage current (@V1mA 的 83%) : $IR \leq 50\mu A$ (180K~680K) $IR \leq 25\mu A$ (820K~751K)

◆ KD/KD-J Series

● Electrical Characteristics-10D KD/KD-J

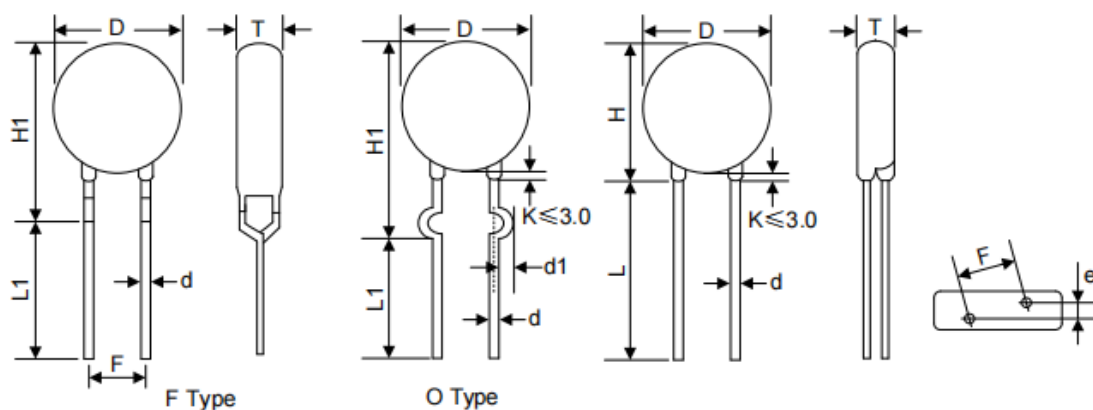


Table 1	
Units:mm	
Symbols	Dimensions
H	10.5~16.0
H1	13.0~17.5
L(min.)	20.0
L1(min.)	15.0
D	10.0~12.5
F(±0.8)	7.5
T	Table 2
e(±0.8)	Table 2
d(±0.05)	0.8
d1(±0.4)	1.4

Table 2					
Units:mm					
Model	T	e	Model	T	e
180K	2.0~4.6	1.5	301K	2.7~5.5	2.5
220K	2.1~4.7	1.6	331K	2.7~5.8	2.5
270K	2.1~4.8	1.8	361K	2.9~6.0	2.7
330K	2.2~5.0	1.7	391K	3.0~6.2	2.8
390K	2.1~5.3	1.8	431K	3.2~6.5	3.0
470K	2.2~5.4	1.9	471K	3.3~6.7	3.2
560K	2.3~5.5	2.1	511K	3.4~6.8	3.4
680K	2.4~5.6	2.4	561K	3.6~7.0	3.6
820K	2.1~4.7	1.8	621K	3.8~7.3	3.9
101K	2.4~4.9	2.0	681K	4.0~7.6	4.2
121K	2.4~5.1	2.2	751K	4.3~8.0	4.3
151K	2.2~5.4	1.8	781K	4.4~8.1	4.4
181K	2.3~4.8	1.9	821K	4.6~8.3	4.6
201K	2.4~5.0	2.0	911K	4.8~8.8	5.0
221K	2.5~5.1	2.1	102K	5.4~9.3	5.0
241K	2.6~5.2	2.2	112K	5.8~9.9	5.4
271K	2.6~5.4	2.4			

◆ KD/KD-J Series

● Electrical Characteristics -10D KD/KD-J

Part number		Maximum allowed voltage		Varistor Voltage	Maximum holding voltage		Able to withstand surges Current		Maximum energy (10/1000μs)		Rated power	Typical capacitors (Reference value)
Standard	High impact	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A) Standard	I (A) High impact	(J) Standard	(J) High impact	(W)	@1KHz (pf)
180KD10	180KD10J	11	14	18(15~21.6)	5	36	500	1000	2.1	3.0	0.05	5600
220KD10	220KD10J	14	18	22(19.5~26)	5	43	500	1000	2.5	5.0	0.05	4500
270KD10	270KD10J	17	22	27(24~31)	5	53	500	1000	3.0	6.0	0.05	3700
330KD10	330KD10J	20	26	33(29.5~36.5)	5	65	500	1000	4.0	7.0	0.05	3000
390KD10	390KD10J	25	31	39(35~43)	5	77	500	1000	4.6	9.0	0.05	2400
470KD10	470KD10J	30	38	47(42~52)	5	93	500	1000	5.5	11.0	0.05	2100
560KD10	560KD10J	35	45	56(50~62)	5	110	500	1000	7.0	13.0	0.05	1800
680KD10	680KD10J	40	56	68(61~75)	5	135	500	1000	8.2	15.0	0.05	1500
820KD10	820KD10J	50	65	82(74~90)	5	135	2500	3500	12.0	17.0	0.4	1200
101KD10	101KD10J	60	85	100(90~110)	25	165	2500	3500	15.0	18.0	0.4	1000
121KD10	121KD10J	75	100	120(108~132)	25	200	2500	3500	18.0	21.0	0.4	830
151KD10	151KD10J	95	125	150(135~165)	25	250	2500	3500	22.0	25.0	0.4	670
181KD10	181KD10J	115	150	180(162~198)	25	300	2500	3500	27.0	30.0	0.4	560
201KD10	201KD10J	130	170	200(180~220)	25	340	2500	3500	30.0	35.0	0.4	500
221KD10	221KD10J	140	180	220(198~242)	25	360	2500	3500	32.0	39.0	0.4	450
241KD10	241KD10J	150	200	240(216~264)	25	395	2500	3500	35.0	42.0	0.4	420
271KD10	271KD10J	175	225	270(243~297)	25	455	2500	3500	37.0	49.0	0.4	370
301KD10	301KD10J	190	250	300(270~330)	25	500	2500	3500	40.0	54.0	0.4	330
331KD10	331KD10J	210	275	330(297~363)	25	550	2500	3500	43.0	58.0	0.4	300
361KD10	361KD10J	230	300	360(324~396)	25	595	2500	3500	47.0	65.0	0.4	280
391KD10	391KD10J	250	320	390(351~429)	25	650	2500	3500	60.0	70.0	0.4	260

Note: 1. Voltage variable resistors can withstand voltages between 18V and 27V, with tolerances exceeding 10%.

2. Leakage current (@V1mA 的 83%) : $I_R \leq 50\mu A$ (180K~680K) $I_R \leq 25\mu A$ (820K~751K)

◆ KD/KD-J Series

● Electrical Characteristics-10D KD/KD-J

Part number		Maximum allowed voltage		Varistor Voltage	Maximum holding voltage		Able to withstand surges Current		Maximum energy (10/1000μs)		Rated power	Typical capacitors (Reference value)
Standard	High impact	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A) Standard	I (A) High impact	(J) Standard	(J) High impact	(W)	@1KHz (pf)
431KD10	431KD10J	275	350	430(387~473)	25	710	2500	3500	65.0	80.0	0.4	230
471KD10	471KD10J	300	385	470(423~517)	25	775	2500	3500	67.0	85.0	0.4	210
511KD10	511KD10J	320	415	510(459~561)	25	845	2500	3500	69.0	90.0	0.4	200
561KD10	561KD10J	350	460	560(504~616)	25	925	2500	3500	70.0	92.0	0.4	180
621KD10	621KD10J	385	505	620(558~682)	25	1025	2500	3500	72.0	95.0	0.4	160
681KD10	681KD10J	420	560	680(612~748)	25	1120	2500	3500	75.0	98.0	0.4	150
751KD10	751KD10J	460	615	750(675~825)	25	1240	2500	3500	77.0	100.0	0.4	130
781KD10	781KD10J	485	640	780(702~858)	25	1290	2500	3500	80.0	105.0	0.4	125
821KD10	821KD10J	510	670	820(738~902)	25	1355	2500	3500	85.0	110.0	0.4	120
911KD10	911KD10J	550	745	910(819~1001)	25	1500	2500	3500	93.0	130.0	0.4	110
102KD10	102KD10J	625	825	1000(900~1100)	25	1650	2500	3500	102.0	140.0	0.4	100
112KD10	112KD10J	680	895	1100(990~1210)	25	1815	2500	3500	115.0	155.0	0.4	90

Note: 1. Voltage variable resistors can withstand voltages between 18V and 27V, with tolerances exceeding 10%.

2. Leakage current (@V1mA 的 83%) : $IR \leq 50\mu A$ (180K~680K) $IR \leq 25\mu A$ (820K~751K)

◆ KD-J-X4.5 Series

● Electrical Characteristics-10D KD-J-X4.5

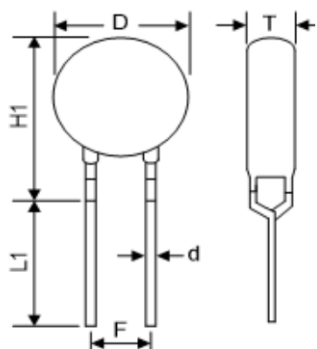


Fig 1. In Line Kink Lead

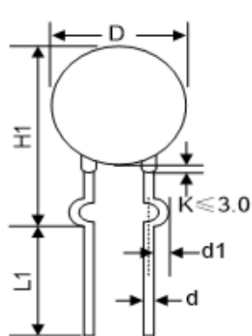


Fig 2. Outside Kink Lead

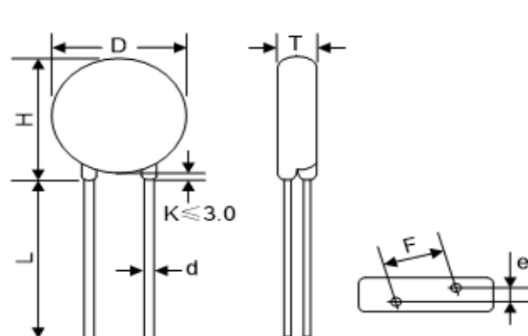


Fig 3. Straight Lead

Table 1	
Units: mm	
Symbols	Dimensions
H (max.)	17.5
H1 (max.)	19.0
L(min.)	20.0
L1(min.)	15.0
D (max.)	14.0
F(±0.8)	7.5
T(max.)	Table 2
e(±0.8)	Table 2
d(±0.05)	0.8
d1(±0.4)	1.4

Table 2					
Units: mm					
Model	T(max.)	e	Model	T(max.)	e
201K	5.0	2.0	471K	6.7	3.2
221K	5.1	2.1	511K	6.8	3.4
241K	5.2	2.2	561K	7.0	3.6
271K	5.4	2.4	621K	7.3	3.9
301K	5.5	2.5	681K	7.6	4.2
331K	5.8	2.5	751K	8.0	4.3
361K	6.0	2.7	781K	8.1	4.4
391K	6.2	2.8	821K	8.3	4.6
431K	6.5	3.0	911K	8.8	5.0

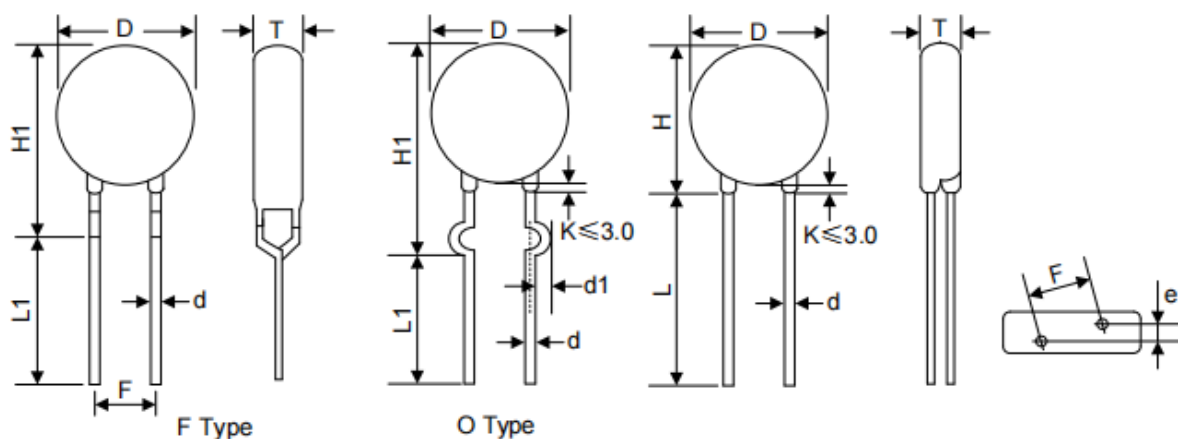
◆ KD-J-X4.5 Series

● Electrical Characteristics-10D KD-J-X4.5

Part number	Sensitivity resistor voltage (@ 1mA DC)	Maximum consecutive Voltage		Maximum clamping voltage (8/20μs)		Maximum surge Current (8/20μs)	Rated power	Maximum energy (10/1000μs)
	V1mA	Vac(rms)	Vdc	IP	VP	I _{max}	P	W _{max}
	(V)	(V)	(V)	(A)	(V)	(A)	(W)	(J)
201KD10J-X4.5	200(180~220)	130	170	25	340	4500	0.4	52
221KD10J-X4.5	220(198~242)	140	180	25	360	4500	0.4	58
241KD10J-X4.5	240(216~264)	150	200	25	395	4500	0.4	64
271KD10J-X4.5	270(243~297)	175	225	25	455	4500	0.4	67
301KD10J-X4.5	300(270~330)	190	250	25	500	4500	0.4	70
331KD10J-X4.5	330(297~363)	210	275	25	550	4500	0.4	72
361KD10J-X4.5	360(324~396)	230	300	25	595	4500	0.4	76
391KD10J-X4.5	390(351~429)	250	320	25	650	4500	0.4	82
431KD10J-X4.5	430(387~473)	275	350	25	710	4500	0.4	93
471KD10J-X4.5	470(423~517)	300	385	25	775	4500	0.4	99
511KD10J-X4.5	510(459~561)	320	415	25	845	4500	0.4	107
561KD10J-X4.5	560(504~616)	350	460	25	925	4500	0.4	113
621KD10J-X4.5	620(558~682)	385	505	25	1025	4500	0.4	125
681KD10J-X4.5	680(612~748)	420	560	25	1120	4500	0.4	128
751KD10J-X4.5	750(675~825)	460	615	25	1235	4500	0.4	134
781KD10J-X4.5	780(702~858)	485	640	25	1300	4500	0.4	139
821KD10J-X4.5	820(738~902)	510	670	25	1355	4500	0.4	146
911KD10J-X4.5	910(819~1001)	550	745	25	1500	4500	0.4	152

◆ KD/KD-J Series

● Structure and Dimensions -14D KD/KD-J



Note: Products with a trigger voltage of $\geq 1200V$ have a type designation of F.

Table 1	
Units: mm	
Symbols	Dimensions
H	14.5~20.0
H1	17.0~21.0
L(min.)	20.0
L1(min.)	15.0
D	14.0~16.5
F(± 0.8)	7.5
T	Table 2
e(± 0.8)	Table 2
d(± 0.05)	0.8
d1(± 0.4)	1.4

Table 2					
Units: mm					
Model	T	e	Model	T	e
180K	2.0~3.9	1.5	361K	2.9~5.2	2.7
220K	2.1~4.0	1.6	391K	3.0~5.4	2.8
270K	2.1~4.1	1.8	431K	3.2~5.6	3.0
330K	2.2~4.3	1.7	471K	3.3~5.8	3.2
390K	2.1~4.1	1.8	511K	3.4~6.1	3.4
470K	2.2~4.3	1.9	561K	3.6~6.4	3.6
560K	2.3~4.6	2.1	621K	3.8~6.8	3.9
680K	2.4~4.8	2.4	681K	4.0~7.1	4.2
820K	2.1~4.1	1.8	751K	4.3~7.2	4.3
101K	2.4~4.2	2.0	781K	4.4~7.3	4.4
121K	2.4~4.4	2.2	821K	4.6~7.5	4.6
151K	2.2~4.1	1.8	911K	4.8~7.5	5.0
181K	2.3~4.2	1.9	102K	5.4~8.0	5.0
201K	2.4~4.3	2.0	112K	5.8~8.5	5.4
221K	2.5~4.4	2.1	122K	5.9~9.0	5.8
241K	2.6~4.5	2.2	142	6.9~10.5	6.6
271K	2.6~4.6	2.4	162	7.4~11.0	7.4
301K	2.7~4.6	2.5	182	7.6~12.0	8.2
331K	2.7~5.0	2.5			

◆ KD/KD-J Series

● Electrical Characteristics-14D KD/KD-J

Part number		Maximum allowed voltage		Varistor Voltage	Maximum holding voltage		Able to withstand surges Current		Maximum energy (10/1000 μ s)		Rated power	Typical capacitors (Reference value)
Standard	High impact	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A) Standard	Standard	High impact	VAC (V)	VDC (V)	V1mA (V)
180KD14	180KD14J	11	14	18(15~21.6)	10	36	1000	2000	4.0	7.0	0.1	11100
220KD14	220KD14J	14	18	22(19.5~26)	10	43	1000	2000	5.0	8.0	0.1	9100
270KD14	270KD14J	17	22	27(24~31)	10	53	1000	2000	6.0	10.0	0.1	7400
330KD14	330KD14J	20	26	33(29.5~36.5)	10	65	1000	2000	7.5	12.0	0.1	6100
390KD14	390KD14J	25	31	39(35~43)	10	77	1000	2000	8.6	13.0	0.1	5100
470KD14	470KD14J	30	38	47(42~52)	10	93	1000	2000	10.0	17.0	0.1	4300
560KD14	560KD14J	35	45	56(50~62)	10	110	1000	2000	11.0	20.0	0.1	3600
680KD14	680KD14J	40	56	68(61~75)	10	135	1000	2000	14.0	24.0	0.1	2900
820KD14	820KD14J	50	65	82(74~90) 5	50	135	4500	6000	22.0	27.0	0.6	2400
101KD14	101KD14J	60	85	100(90~110)	50	165	4500	6000	28.0	33.0	0.6	2000
121KD14	121KD14J	75	100	120(108~132)	50	200	4500	6000	32.0	40.0	0.6	1700
151KD14	151KD14J	95	125	150(135~165)	50	250	4500	6000	40.0	53.0	0.6	1300
181KD14	181KD14J	115	150	180(162~198)	50	300	4500	6000	50.0	60.0	0.6	1100
201KD14	201KD14J	130	170	200(180~220)	50	340	4500	6000	57.0	70.0	0.6	1000
221KD14	221KD14J	140	180	220(198~242)	50	360	4500	6000	60.0	78.0	0.6	900
241KD14	241KD14J	150	200	240(216~264)	50	395	4500	6000	63.0	84.0	0.6	830
271KD14	271KD14J	175	225	270(243~297)	50	455	4500	6000	70.0	99.0	0.6	740
301KD14	301KD14J	190	250	300(270~330)	50	500	4500	6000	77.0	108	0.6	670
331KD14	331KD14J	210	275	330(297~363)	50	550	4500	6000	85.0	115	0.6	610
361KD14	361KD14J	230	300	360(324~396)	50	595	4500	6000	93.0	130	0.6	560
391KD14	391KD14J	250	320	390(351~429)	50	650	4500	6000	100	140	0.6	510

Note: 1. Sensing voltage: 18V-27V. Voltage tolerance: +10%.

2. Products with a breakdown voltage of >1200V should have a packaging design of type F.

3. Leakage Current (tested with 83% of nominal V_{1mA} voltage): IR 50 μ A (180K - 680K); IR 25 μ A (820K - 182K)

◆ KD/KD-J Series

● Electrical Characteristics-14D KD/KD-J

Part number		Maximum allowed voltage		Varistor Voltage	Maximum holding voltage		Able to withstand surges Current		Maximum energy (10/1000 μ s)		Rated power	Typical capacitors (Reference value)
Standard	High impact	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A) Standard	Standard	High impact	VAC (V)	VDC (V)	V1mA (V)
431KD14	431KD14J	275	350	430(387~473)	50	710	4500	6000	115	155	0.6	460
471KD14	471KD14J	300	385	470(423~517)	50	775	4500	6000	118	175	0.6	430
511KD14	511KD14J	320	415	510(459~561)	50	845	4500	6000	121	180	0.6	390
561KD14	561KD14J	350	460	560(504~616)	50	925	4500	6000	125	185	0.6	360
621KD14	621KD14J	385	505	620(558~682)	50	1025	4500	6000	128	190	0.6	320
681KD14	681KD14J	420	560	680(612~748)	50	1120	4500	6000	130	200	0.6	290
751KD14	751KD14J	460	615	750(675~825)	50	1240	4500	6000	143	210	0.6	270
781KD14	781KD14J	485	640	780(702~858)	50	1290	4500	6000	148	220	0.6	260
821KD14	821KD14J	510	670	820(738~902)	50	1355	4500	6000	157	235	0.6	240
911KD14	911KD14J	550	745	910(819~1001)	50	1500	4500	6000	175	255	0.6	220
102KD14	102KD14J	625	825	1000(900~1100)	50	1650	4500	6000	190	280	0.6	200
112KD14	112KD14J	680	895	1100(990~1210)	50	1815	4500	6000	213	310	0.6	180
122KD14	122KD14J	750	990	1200(1080~1320)	50	1980	4500	6000	231	324	0.6	160
142KD14	/	880	1140	1400(1260~1540)	50	2310	4500	/	238	/	0.6	150
162KD14	/	1000	1280	1600(1440~1760)	50	2640	4500	/	243	/	0.6	140
182KD14	/	1100	1465	1800(1620~1980)	50	2970	4500	/	250	/	0.6	130

Note: 1. Sensing voltage: 18V-27V. Voltage tolerance: +10%.

2. Products with a breakdown voltage of >1200V should have a packaging design of type F.

3. Leakage Current (tested with 83% of nominal V_{1mA} voltage): IR 50uA (180K - 680K); IR 25uA (820K - 182K)

◆ KD-J-X8 Series

● Structure and Dimensions-14D KD-J-X8

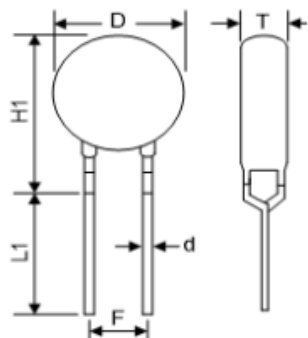


Fig 1. In Line Kink Lead

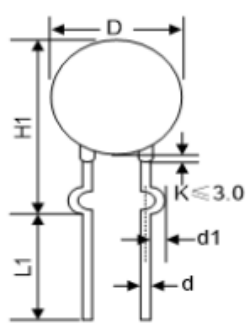


Fig 2. Outside Kink Lead

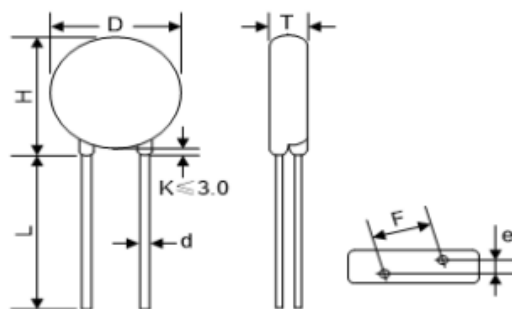


Fig 3. Straight Lead

Table 1	
Units: mm	
Symbols	Dimensions
H (max.)	21.5
H1 (max.)	23.0
L(min.)	20.0
L1(min.)	15.0
D (max.)	18.5
F(±0.8)	7.5
T(max.)	Table 2
e(±0.8)	Table 2
d(±0.05)	0.8
d1(±0.4)	1.4

Table 2					
Units: mm					
Model	T(max.)	e	Model	T(max.)	e
201K	4.3	2.0	471K	5.8	3.2
221K	4.4	2.1	511K	6.1	3.4
241K	4.5	2.2	561K	6.4	3.6
271K	4.6	2.4	621K	6.8	3.9
301K	4.8	2.5	681K	7.1	4.2
331K	5.0	2.5	751K	7.2	4.3
361K	5.2	2.7	781K	7.3	4.4
391K	5.4	2.8	821K	7.5	4.6
431K	5.6	3.0	911K	7.5	5.0

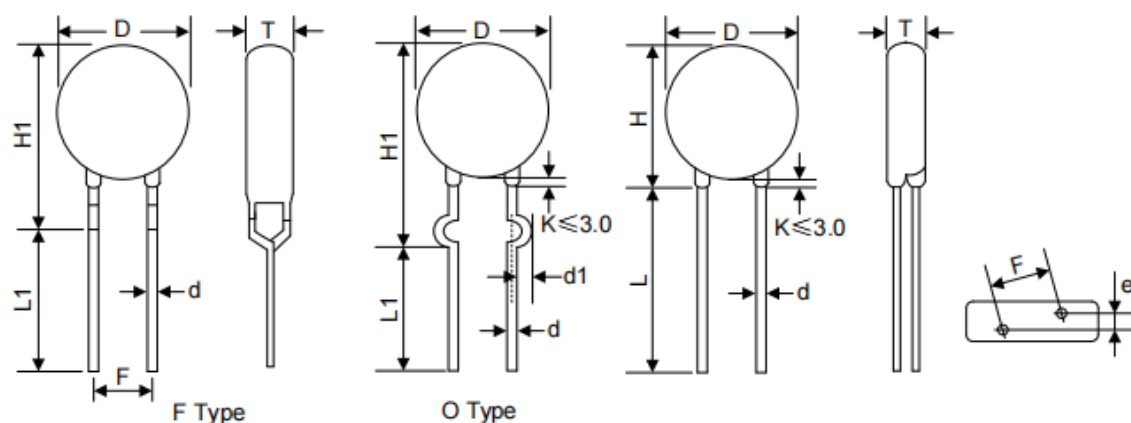
◆ KD-J-X8 Series

● Electrical Characteristics -14D KD-J-X8

Part number	Sensitivity resistor voltage (@ 1mA DC)	Maximum consecutive Voltage		Maximum clamping voltage (8/20μs)		Maximum surge Current (8/20μs)	Rated power	Maximum energy (10/1000μs)
	V1mA	Vac(rms)	Vdc	IP	VP	I _{max}	P	W _{max}
	(V)	(V)	(V)	(A)	(V)	(A)	(W)	(J)
201KD14J-X8	200(180~220)	130	170	50	340	8000	0.6	82
221KD14J-X8	220(198~242)	140	180	50	360	8000	0.6	90
241KD14J-X8	240(216~264)	150	200	50	395	8000	0.6	98
271KD14J-X8	270(243~297)	175	225	50	455	8000	0.6	116
301KD14J-X8	300(270~330)	190	250	50	500	8000	0.6	128
331KD14J-X8	330(297~363)	210	275	50	550	8000	0.6	140
361KD14J-X8	360(324~396)	230	300	50	595	8000	0.6	158
391KD14J-X8	390(351~429)	250	320	50	650	8000	0.6	170
431KD14J-X8	430(387~473)	275	350	50	710	8000	0.6	185
471KD14J-X8	470(423~517)	300	385	50	775	8000	0.6	205
511KD14J-X8	510(459~561)	320	415	50	845	8000	0.6	220
561KD14J-X8	560(504~616)	350	460	50	925	8000	0.6	240
621KD14J-X8	620(558~682)	385	505	50	1025	8000	0.6	250
681KD14J-X8	680(612~748)	420	560	50	1120	8000	0.6	260
751KD14J-X8	750(675~825)	460	615	50	1240	8000	0.6	270
781KD14J-X8	780(702~858)	485	640	50	1290	8000	0.6	275
821KD14J-X8	820(738~902)	510	670	50	1355	8000	0.6	280
911KD14J-X8	910(819~1001)	550	745	50	1500	8000	0.6	295

◆ KD/KD-J Series

● Structure and dimensions-20D KD/KD-J



Note: Products with a trigger voltage of $\geq 1200V$ have a type designation of F.

Table 1	
Units: mm	
Symbols	Dimensions
H	21.0~26.0
H1	24.0~28.0
L(min.)	20.0
L1(min.)	15.0
D	20.0~23.0
F	7.5±0.8/10.0±1.0
T	Table 2
e(±0.8)	Table 2
d(±0.05)	0.8/1.0
d1(±0.4)	1.4/1.6

Table 2					
Units: mm					
Model	T	e	Model	T	e
180K	2.1~4.3	1.7	361K	3.0~5.4	2.9
220K	2.2~4.4	1.8	391K	3.1~5.5	3.0
270K	2.2~4.6	2.0	431K	3.3~5.7	3.2
330K	2.3~4.8	1.9	471K	3.4~6.0	3.4
390K	2.2~4.5	2.0	511K	3.5~6.2	3.6
470K	2.3~4.7	2.1	561K	3.7~6.5	3.8
560K	2.4~5.0	2.3	621K	3.9~6.8	4.1
680K	2.5~5.3	2.6	681K	4.1~7.1	4.4
820K	2.2~4.5	2.0	751K	4.4~7.5	4.5
101K	2.5~4.6	2.2	781K	4.5~7.7	4.6
121K	2.5~4.8	2.4	821K	4.7~7.9	4.8
151K	2.3~4.5	2.0	911K	4.9~8.1	5.2
181K	2.4~4.6	2.1	102K	5.5~8.6	5.2
201K	2.5~4.7	2.2	112K	5.9~9.1	5.6
221K	2.6~4.8	2.3	122K	6.0~9.7	6.0
241K	2.7~4.9	2.4	142K	7.0~11.2	6.8
271K	2.7~5.0	2.6	162K	7.5~11.8	7.6
301K	2.8~5.0	2.7	182K	7.7~12.8	8.4
331K	2.8~5.2	2.7			

◆ KD/KD-J Series

● Electrical Characteristics -20D KD/KD-J

Part number		Maximum allowed voltage		Varistor Voltage	Maximum holding voltage		Able to withstand surges Current		Maximum energy (10/1000 μ s)		Rated power	Typical capacitors (Reference value)
Standard	High impact	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A) Standard	Standard	High impact	VAC (V)	VDC (V)	V1mA (V)
180KD20	180KD20J	11	14	18(15~21.6)	20	36	2000	3000	11	13	0.2	28500
220KD20	220KD20J	14	18	22(19.5~26)	20	43	2000	3000	14	16	0.2	18500
270KD20	270KD20J	17	22	27(24~31)	20	53	2000	3000	16	19	0.2	13000
330KD20	330KD20J	20	26	33(29.5~36.5)	20	65	2000	3000	23	24	0.2	11500
390KD20	390KD20J	25	31	39(35~43)	20	77	2000	3000	26	28	0.2	8500
470KD20	470KD20J	30	38	47(42~52)	20	93	2000	3000	30	34	0.2	7400
560KD20	560KD20J	35	45	56(50~62)	20	110	2000	3000	38	44	0.2	6500
680KD20	680KD20J	40	56	68(61~75)	20	135	2000	3000	41	49	0.2	5800
820KD20	820KD20J	50	65	82(74~90) 5	100	135	6500	10000	45	56	1.0	4900
101KD20	101KD20J	60	85	100(90~110)	100	165	6500	10000	50	70	1.0	4000
121KD20	121KD20J	75	100	120(108~132)	100	200	6500	10000	55	85	1.0	3300
151KD20	151KD20J	95	125	150(135~165)	100	250	6500	10000	70	106	1.0	2700
181KD20	181KD20J	115	150	180(162~198)	100	300	6500	10000	85	130	1.0	2200
201KD20	201KD20J	130	170	200(180~220)	100	340	6500	10000	95	140	1.0	2000
221KD20	221KD20J	140	180	220(198~242)	100	360	6500	10000	100	155	1.0	1800
241KD20	241KD20J	150	200	240(216~264)	100	395	6500	10000	108	168	1.0	1650
271KD20	271KD20J	175	225	270(243~297)	100	455	6500	10000	127	190	1.0	1500
301KD20	301KD20J	190	250	300(270~330)	100	500	6500	10000	136	210	1.0	1300
331KD20	331KD20J	210	275	330(297~363)	100	550	6500	10000	150	228	1.0	1200
361KD20	361KD20J	230	300	360(324~396)	100	595	6500	10000	163	255	1.0	1100
391KD20	391KD20J	250	320	390(351~429)	100	650	6500	10000	180	275	1.0	1000

Note: 1. Sensing voltage: 18V-27V. Voltage tolerance: +10%.

2. Products with a breakdown voltage of >1200V should have a packaging design of type F.

3. Leakage Current (tested with 83% of nominal V_{1mA} voltage): IR 50 μ A (180K - 680K); IR 25 μ A (820K - 182K)

◆ KD/KD-J Series

● Electrical Characteristics-20D KD/KD-J

Part number		Maximum allowed voltage		Varistor Voltage	Maximum holding voltage		Able to withstand surges Current		Maximum energy (10/1000 μ s)		Rated power	Typical capacitors (Reference value)
Standard	High impact	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A) Standard	Standard	High impact	VAC (V)	VDC (V)	V1mA (V)
431KD20	431KD20J	275	350	430(387~473)	100	710	6500	10000	190	305	1.0	930
471KD20	471KD20J	300	385	470(423~517)	100	775	6500	10000	204	350	1.0	850
511KD20	511KD20J	320	415	510(459~561)	100	845	6500	10000	210	360	1.0	780
561KD20	561KD20J	350	460	560(504~616)	100	925	6500	10000	215	380	1.0	710
621KD20	621KD20J	385	505	620(558~682)	100	1025	6500	10000	224	390	1.0	650
681KD20	681KD20J	420	560	680(612~748)	100	1120	6500	10000	230	400	1.0	600
751KD20	751KD20J	460	615	750(675~825)	100	1240	6500	10000	255	420	1.0	530
781KD20	781KD20J	485	640	780(702~858)	100	1290	6500	10000	265	440	1.0	510
821KD20	821KD20J	510	670	820(738~902)	100	1355	6500	10000	282	460	1.0	500
911KD20	911KD20J	550	745	910(819~1001)	100	1500	6500	10000	310	510	1.0	440
102KD20	102KD20J	625	825	1000(900~1100)	100	1650	6500	10000	342	565	1.0	400
112KD20	112KD20J	680	895	1100(990~1210)	100	1815	6500	10000	383	620	1.0	360
122KD20	122KD20J	750	990	1200(1080~1320)	100	1980	6500	10000	408	660	1.0	350
142KD20	142KD20J	880	1140	1400(1260~1540)	100	2310	6500	10000	532	784	1.0	340
162KD20	162KD20J	1000	1280	1600(1440~1760)	100	2640	6500	10000	606	896	1.0	330
182KD20	182KD20J	1100	1465	1800(1620~1980)	100	2970	6500	10000	625	990	1.0	320

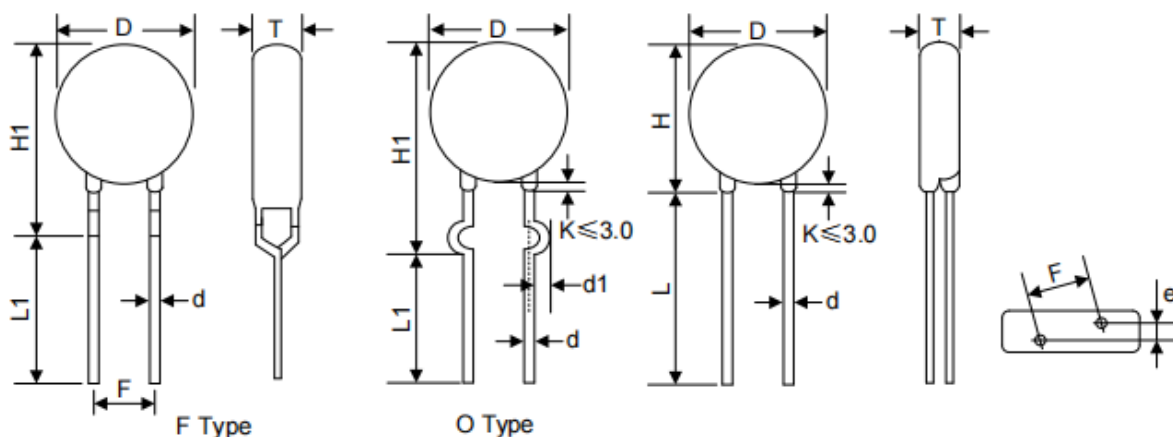
Note: 1. Sensing voltage: 18V-27V. Voltage tolerance: +10%.

2. Products with a breakdown voltage of >1200V should have a packaging design of type F.

3. Leakage Current (tested with 83% of nominal V_{1mA} voltage): IR 50 μ A (180K - 680K); IR 25 μ A (820K - 182K)

◆ KD Series

● Structure and dimensions-25D KD



Note: Products with a trigger voltage of $\geq 1200V$ have a type designation of F.

Table 1	
Units:mm	
Symbols	Dimensions
H	27.0~31.5
H1	28.0~34.0
L(min.)	20.0
L1(min.)	15.0
D	25.0~28.0
F (± 1.0)	10.0/12.5
T	Table 2
e(± 0.8)	Table 2
d(± 0.1)	1.0
d1(± 0.4)	1.4/1.6

Table 2					
Units:mm					
Model	T	e	Model	T	e
180K	2.5~4.8	1.7	361K	3.4~5.9	2.9
220K	2.6~4.9	1.8	391K	3.5~6.1	3.0
270K	2.6~5.0	2.0	431K	3.7~6.4	3.2
330K	2.7~5.2	1.9	471K	3.8~6.7	3.4
390K	2.6~5.5	2.0	511K	3.9~7.0	3.6
470K	2.7~5.1	2.1	561K	4.1~7.3	3.8
560K	2.8~5.4	2.3	621K	4.3~7.6	4.1
680K	2.9~5.7	2.6	681K	4.5~7.8	4.4
820K	2.6~4.5	2.0	751K	4.8~8.0	4.5
101K	2.9~4.6	2.2	781K	4.9~8.1	4.6
121K	2.9~4.8	2.4	821K	5.1~8.4	4.8
151K	2.7~4.9	2.0	911K	5.3~8.9	5.2
181K	2.8~5.2	2.1	102K	5.9~9.5	5.2
201K	2.9~5.2	2.2	112K	6.3~10.1	5.6
221K	3.0~5.3	2.3	122K	6.4~10.7	6.0
241K	3.1~5.8	2.4	142K	7.4~12.6	6.8
271K	3.1~5.3	2.6	162K	7.9~13.2	7.6
301K	3.2~5.5	2.7	182K	8.1~14.5	8.4
331K	3.2~5.7	2.7			

◆ KD Series

● Electrical Characteristic-25D KD

Part number	Sensitivity resistor voltage (@ 1mA DC)		Maximum consecutive Voltage	Maximum clamping voltage (8/20μs)		Maximum surge Current (8/20μs)	Rated power	Maximum energy (10/1000 μs)	Part number
	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A)	(J)	(W)	@1KHz (pf)
180KD25	11	14	18(15~21.6)	30	36	4500	20	0.25	45000
220KD25	14	18	22(19.5~26)	30	43	4500	25	0.25	29000
270KD25	17	22	27(24~31)	30	53	4500	30	0.25	26500
330KD25	20	26	33(29.5~36.5)	30	65	4500	35	0.25	18000
390KD25	25	31	39(35~43)	30	77	4500	40	0.25	13500
470KD25	30	38	47(42~52)	30	93	4500	50	0.25	11500
560KD25	35	45	56(50~62)	30	110	4500	60	0.25	10500
680KD25	40	56	68(61~75)	30	135	4500	70	0.25	9050
820KD25	50	65	82(74~90) 5	150	135	15000	80	1.2	7700
101KD25	60	85	100(90~110)	150	165	15000	100	1.2	6300
121KD25	75	100	120(108~132)	150	200	15000	120	1.2	5200
151KD25	95	125	150(135~165)	150	250	15000	160	1.2	4300
181KD25	115	150	180(162~198)	150	300	15000	175	1.2	3500
201KD25	130	170	200(180~220)	150	340	15000	190	1.2	3200
221KD25	140	180	220(198~242)	150	360	15000	200	1.2	2900
241KD25	150	200	240(216~264)	150	395	15000	220	1.2	2650
271KD25	175	225	270(243~297)	150	455	15000	255	1.2	2400
301KD25	190	250	300(270~330)	150	500	15000	275	1.2	2100
331KD25	210	275	330(297~363)	150	550	15000	300	1.2	1900
361KD25	230	300	360(324~396)	150	595	15000	330	1.2	1750
391KD25	250	320	390(351~429)	150	650	15000	360	1.2	1600

Note: 1. Voltage variable resistors can withstand voltages between 18V and 27V, with tolerances exceeding 10%.

2. Leakage current (@V1mA, 83%): IR < 50uA (180K - 680K) IR ≤ 25uA (820K - 751K)

◆ KD Series

● Structure and dimensions-25D KD

Part number	Sensitivity resistor voltage (@ 1mA DC)		Maximum consecutive Voltage	Maximum clamping voltage (8/20μs)		Maximum surge Current (8/20μs)	Rated power	Maximum energy (10/1000 μs)	Part number
	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A)	(J)	(W)	@1KHz (pf)
431KD25	275	350	430(387~473)	150	710	15000	380	1.2	1500
471KD25	300	385	470(423~517)	150	775	15000	400	1.2	1400
511KD25	320	415	510(459~561)	150	845	15000	420	1.2	1250
561KD25	350	460	560(504~616)	150	925	15000	440	1.2	1150
621KD25	385	505	620(558~682)	150	1025	15000	450	1.2	1050
681KD25	420	560	680(612~748)	150	1120	15000	460	1.2	950
751KD25	460	615	750(675~825)	150	1240	15000	510	1.2	850
781KD25	485	640	780(702~858)	150	1290	15000	530	1.2	850
821KD25	510	670	820(738~902)	150	1355	15000	570	1.2	800
911KD25	550	745	910(819~1001)	150	1500	15000	620	1.2	700
102KD25	625	825	1000(900~1100)	150	1650	15000	685	1.2	650
112KD25	680	895	1100(990~1210)	150	1815	15000	720	1.2	600
122KD25	750	990	1200(1080~1320)	150	1980	15000	792	1.2	550
142KD25	880	1140	1400(1260~1540)	150	2310	15000	850	1.2	500
162KD25	1000	1280	1600(1440~1760)	150	2640	15000	970	1.2	450
182KD25	1100	1465	1800(1620~1980)	150	2970	15000	1092	1.2	400

Note: 1. Voltage variable resistors can withstand voltages between 18V and 27V, with tolerances exceeding 10%.

2. Leakage current (@V1mA, 83%): IR 50uA (180K - 680K) IR 25uA (820K - 751K)

◆ KD Series

● Structure and dimensions-32D KD

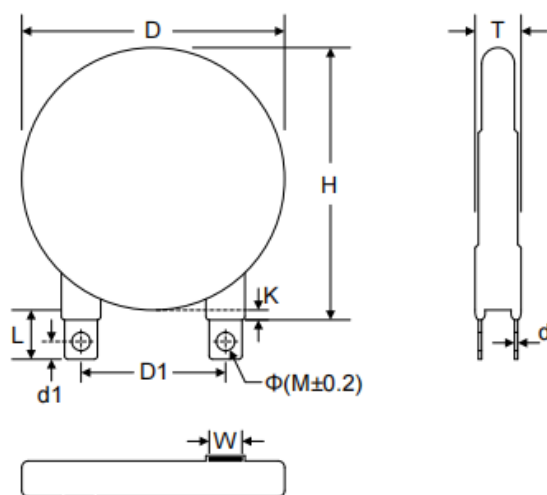


Table 1	
Units: mm	
Symbols	Dimensions
H(max.)	40.0
L(min.)	14.5
D(max.)	36.0
D1(± 1.0)	25.4
T(max.)	TABLE 2
d(± 0.25)	0.5
d1(± 0.3)	3.7
K(max.)	3.2
W(± 0.5)	7.0
$\Phi M(\pm 0.2)$	3.2

Table 2			
Units: mm			
Model	T(max.)	Model	T(max.)
101K	5.8	511K	8.0
121K	6.0	561K	8.5
151K	6.3	621K	8.7
181K	6.1	681K	9.0
201K	6.2	751K	9.4
221K	6.3	781K	9.6
241K	6.4	821K	9.8
271K	6.6	911K	10.4
301K	6.8	951K	10.6
331K	6.9	102K	11.2
361K	7.1	112K	11.8
391K	7.3	122K	12.3
431K	7.5	142K	13.3
471K	7.8	162K	14.3

◆ KD Series

● Electrical Characteristics-32D KD

Part number	Sensitivity resistor voltage (@ 1mA DC)		Maximum consecutive Voltage	Maximum clamping voltage (8/20μs)		Maximum surge Current (8/20μs)	Rated power	Maximum energy (10/1000μs)
	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A)	(J)	@1KHz (pf)
101KD32	60	85	100(90~110)	200	165	25000	170	6100
121KD32	75	100	120(108~132)	200	200	25000	200	5600
151KD32	95	125	150(135~165)	200	250	25000	225	5400
181KD32	115	150	180(162~198)	200	300	25000	240	5350
201KD32	130	170	200(180~220)	200	340	25000	250	5200
221KD32	140	180	220(198~242)	200	360	25000	270	5150
241KD32	150	200	240(216~264)	200	395	25000	290	5100
271KD32	175	225	270(243~297)	200	455	25000	300	4800
301KD32	190	250	300(270~330)	200	500	25000	330	4550
331KD32	210	275	330(297~363)	200	550	25000	360	4300
361KD32	230	300	360(324~396)	200	595	25000	380	3900
391KD32	250	320	390(351~429)	200	650	25000	400	3200
431KD32	275	350	430(387~473)	200	710	25000	430	3100
471KD32	300	385	470(423~517)	200	775	25000	460	2800
511KD32	320	415	510(459~561)	200	845	25000	510	2700
561KD32	3500	460	560(504~616)	200	925	25000	540	2550
621KD32	385	505	620(558~682)	200	1025	25000	570	2400
681KD32	420	560	680(612~748)	200	1120	25000	600	2200
751KD32	460	615	750(675~825)	200	1240	25000	620	2000
781KD32	485	640	780(702~858)	200	1290	25000	660	1900
821KD32	510	670	820(738~902)	200	1355	25000	700	1800

◆ KD Series

● Electrical Characteristics-32D KD

Part number	Sensitivity resistor voltage (@ 1mA DC)		Maximum consecutive Voltage	Maximum clamping voltage (8/20μs)		Maximum surge Current (8/20μs)	Rated power	Maximum energy (10/1000μs)
	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A)	(J)	@1KHz (pf)
911KD32	550	745	910(819~1001)	200	1500	25000	750	1300
951KD32	575	765	950(855~1045)	200	1570	25000	780	1200
102KD32	625	825	1000(900~1100)	200	1650	25000	810	1100
112KD32	680	895	1100(990~1210)	200	1815	25000	910	1000
122KD32	750	990	1200(1080~1320)	200	1980	25000	960	920
142KD32	880	1140	1400(1260~1540)	200	2310	25000	1020	800
162KD32	1000	1280	1600(1440~1760)	200	2640	25000	1080	700

YAGEO SENSOR

◆ KD Series

● Structure and dimensions-40D KD

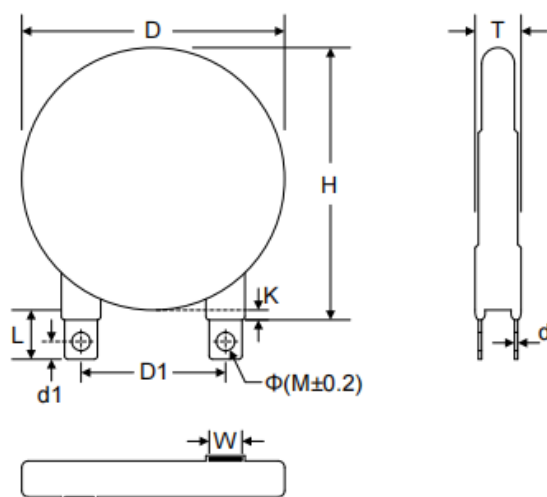


Table 1	
Units: mm	
Symbols	Dimensions
H(max.)	48.0
L(min.)	14.5
D(max.)	42.0
D1(± 1.0)	25.4
T(max.)	TABLE 2
d(± 0.25)	0.5
d1(± 0.3)	3.7
K(max.)	3.2
W(± 0.5)	7.0
$\Phi M(\pm 0.2)$	3.2

Table 2			
Units: mm			
Model	T(max.)	Model	T(max.)
101K	5.8	511K	8.0
121K	5.9	561K	8.5
151K	6.0	621K	8.7
181K	6.1	681K	9.0
201K	6.2	751K	9.4
221K	6.3	781K	9.6
241K	6.4	821K	9.8
271K	6.6	911K	10.4
301K	6.8	951K	10.6
331K	6.9	102K	11.2
361K	7.1	112K	11.8
391K	7.3	122K	12.3
431K	7.5	142K	13.3
471K	7.8	162K	14.3

◆ KD Series

● Electrical Characteristics-40D KD

Part number	Sensitivity resistor voltage (@ 1mA DC)		Maximum consecutive Voltage	Maximum clamping voltage (8/20μs)		Maximum surge Current (8/20μs)	Rated power	Maximum energy (10/1000μs)
	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A)	(J)	VAC (V)
101KD40	60	85	100(90~110)	300	165	40000	241	12100
121KD40	75	100	120(108~132)	300	200	40000	286	10600
151KD40	95	125	150(135~165)	300	250	40000	300	9500
181KD40	115	150	180(162~198)	300	300	40000	330	8900
201KD40	130	170	200(180~220)	300	340	40000	370	8400
221KD40	140	180	220(198~242)	300	360	40000	400	8200
241KD40	150	200	240(216~264)	300	395	40000	430	8000
271KD40	175	225	270(243~297)	300	455	40000	470	7600
301KD40	190	250	300(270~330)	300	500	40000	510	7300
331KD40	210	275	330(297~363)	300	550	40000	550	6700
361KD40	230	300	360(324~396)	300	595	40000	570	6200
391KD40	250	320	390(351~429)	300	650	40000	590	5100
431KD40	275	350	430(387~473)	300	710	40000	660	4900
471KD40	300	385	470(423~517)	300	775	40000	720	4300
511KD40	320	415	510(459~561)	300	845	40000	770	4200
561KD40	3500	460	560(504~616)	300	925	40000	810	4000
621KD40	385	505	620(558~682)	300	1025	40000	860	3800
681KD40	420	560	680(612~748)	300	1120	40000	900	3500
751KD40	460	615	750(675~825)	300	1240	40000	940	3200
781KD40	485	640	780(702~858)	300	1290	40000	980	3000
821KD40	510	670	820(738~902)	300	1355	40000	1080	2900

◆ KD Series

● Electrical Characteristics-40D KD

Part number	Sensitivity resistor voltage (@ 1mA DC)		Maximum consecutive Voltage	Maximum clamping voltage (8/20μs)		Maximum surge Current (8/20μs)	Rated power	Maximum energy (10/1000μs)
	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A)	(J)	VAC (V)
911KD40	550	745	910(819~1001)	300	1500	40000	1150	2200
951KD40	575	765	950(855~1045)	300	1570	40000	1200	2000
102KD40	625	825	1000(900~1100)	300	1650	40000	1260	1800
112KD40	680	895	1100(990~1210)	300	1815	40000	1380	1600
122KD40	750	990	1200(1080~1320)	300	1980	40000	1460	1500
142KD40	880	1140	1400(1260~1540)	300	2310	40000	1550	1300
162KD40	1000	1280	1600(1440~1760)	300	2640	40000	1700	1150

YAGEO SENSOR

◆ KD Series

● Structure and Dimensions-53D KD

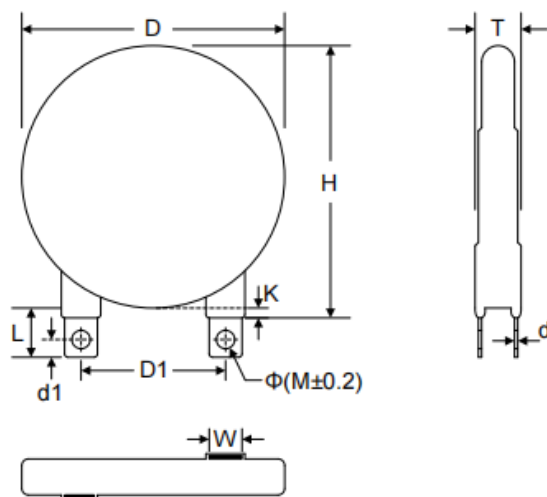


Table 1	
Units: mm	
Symbols	Dimensions
H(max.)	64.0
L(min.)	14.5
D(max.)	56.5
D1(± 1.0)	25.4
T(max.)	TABLE 2
d(± 0.25)	0.5
d1(± 0.3)	3.6
K(max.)	3.2
W(± 0.5)	9.7
$\Phi M(\pm 0.2)$	3.8

Table 2			
Units: mm			
Model	T(max.)	Model	T(max.)
121K	6.0	561K	8.6
151K	6.1	621K	8.8
181K	6.2	681K	9.1
201K	6.3	751K	9.5
221K	6.4	781K	9.7
241K	6.5	821K	9.9
271K	6.7	911K	10.5
301K	6.9	951K	10.7
331K	7.0	102K	11.3
361K	7.2	112K	11.9
391K	7.4	122K	12.4
431K	7.6	142K	13.4
471K	7.9	162K	14.4
511K	8.1		

◆ KD Series

● Electrical Characteristics-53D KD

Part number	Sensitivity resistor voltage (@ 1mA DC)		Maximum consecutive Voltage	Maximum clamping voltage (8/20μs)		Maximum surge Current (8/20μs)	Rated power	Maximum energy (10/1000μs)
	VAC (V)	VDC (V)	V1mA (V)	IP (A)	VC (V)	I (A)	(J)	VAC (V)
121KD53	75	100	120(108~132)	500	200	70000	390	26000
151KD53	95	125	150(135~165)	500	250	70000	430	21000
181KD53	115	150	180(162~198)	500	300	70000	500	18000
201KD53	130	170	200(180~220)	500	340	70000	550	15000
221KD53	140	180	220(198~242)	500	360	70000	600	13750
241KD53	150	200	240(216~264)	500	395	70000	650	12500
271KD53	175	225	270(243~297)	500	455	70000	700	11000
301KD53	190	250	300(270~330)	500	500	70000	765	10000
331KD53	210	275	330(297~363)	500	550	70000	825	9000
361KD53	230	300	360(324~396)	500	595	70000	850	8500
391KD53	250	320	390(351~429)	500	650	70000	885	7500
431KD53	275	350	430(387~473)	500	710	70000	990	7000
471KD53	300	385	470(423~517)	500	775	70000	1080	6500
511KD53	320	415	510(459~561)	500	845	70000	1150	6000
561KD53	350	460	560(504~616)	500	925	70000	1200	5500
621KD53	385	505	620(558~682)	500	1025	70000	1300	5000
681KD53	420	560	680(612~748)	500	1120	70000	1350	4500
751KD53	460	615	750(675~825)	500	1240	70000	1400	4000
781KD53	485	640	780(702~858)	500	1290	70000	1450	3900
821KD53	510	670	820(738~902)	500	1355	70000	1600	3700
911KD53	550	745	910(819~1001)	500	1500	70000	1700	3300

◆ KD Series

● Electrical Characteristics-53D KD

Part number	Sensitivity resistor voltage (@ 1mA DC)		Maximum consecutive Voltage	Maximum clamping voltage (8/20μs)		Maximum surge Current (8/20μs)	Rated power	Maximum energy (10/1000μs)
	VAC (V)	VDC (V)		IP (A)	VC (V)			
951KD53	575	765	950(855~1045)	500	1570	70000	1800	3200
102KD53	625	825	1000(900~1100)	500	1650	70000	1890	3000
112KD53	680	895	1100(990~1210)	500	1815	70000	2050	2700
122KD53	750	990	1200(1080~1320)	500	1980	70000	5160	2500
142KD53	880	1140	1400(1260~1540)	500	2310	70000	2300	2150
162KD53	1000	1280	1600(1440~1760)	500	2640	70000	2500	1900

YAGEO SENSOR

◆ KD/KD-JSeries

● Electrical Characteristics

Experimental project	Testing standards	Experimental conditions/methods	Performance Requirements								
Terminal tensile strength	IEC60068-2-21	Apply a consistent load and maintain the sample in place for 10 ± 1 seconds. <table><tr><th>Terminal diameter (mm)</th><th>Force (kg)</th></tr><tr><td>0.5<d≤0.8</td><td>1.0</td></tr><tr><td>0.8<d≤1.25</td><td>2.0</td></tr><tr><td>1.25<d</td><td>4.0</td></tr></table>	Terminal diameter (mm)	Force (kg)	0.5<d≤0.8	1.0	0.8<d≤1.25	2.0	1.25<d	4.0	No visible damage ΔV1mA/V1mA ≤5%
Terminal diameter (mm)	Force (kg)										
0.5<d≤0.8	1.0										
0.8<d≤1.25	2.0										
1.25<d	4.0										
Terminal bending strength	IEC60068-2-21	Apply the specified load to each wire, followed by bending the sample at a 90-degree angle.Return to the initial position, then repeat this process in the opposite direction. <table><tr><th>Terminal diameter (mm)</th><th>Force (kg)</th></tr><tr><td>0.5<d≤0.8</td><td>0.5</td></tr><tr><td>0.8<d≤1.25</td><td>1.0</td></tr><tr><td>1.25<d</td><td>2.0</td></tr></table>	Terminal diameter (mm)	Force (kg)	0.5<d≤0.8	0.5	0.8<d≤1.25	1.0	1.25<d	2.0	No visible damage ΔV1mA/V1mA ≤5%
Terminal diameter (mm)	Force (kg)										
0.5<d≤0.8	0.5										
0.8<d≤1.25	1.0										
1.25<d	2.0										
Vibration testing	IEC60068-2-6	Frequency range: 10 ~ 55 Hz Amplitude: 0.75 mm or acceleration of 98 m/s² Vibration direction: Three mutually perpendicular axes, with each direction lasting for 2 hours.	No visible damage ΔV1mA/V1mA ≤5%								
Solderability	IEC60068-2-20	Tin melting temperature: 245±5°C Dipping time: 2±0.5 seconds	Tin coverage ≥95%								
High-temperature resistance for welding	IEC60068-2-20	Tin melting temperature: 260±5°C Dipping time: 10±1 seconds	No visible damage ΔV1mA/V1mA ≤5%								
High-temperature storage	IEC60068-2-2	Ambient temperature: 125±2°C Duration: 1000±24 hours	No visible damage ΔV1mA/V1mA ≤5%								
Low-temperature storage	IEC60068-2-1	Ambient temperature: -40±2°C Duration: 1000±24 hours	No visible damage ΔV1mA/V1mA ≤5%								
Steady-state humidity test	IEC60068-2-78	This experiment was divided into two groups: a. 40±2°C、relative humidity 90%–95%, for a continuous period of 1344 ± 24 hours b. 40±2°C、relative humidity 90%–95%, applying a 10% DC rated voltage, Maintained for 1344 ± 24 hours	No visible damage ΔV1mA/V1mA ≤ 10% Insulating resistance ≥ 100 MΩ								
High-temperature load test	MIL-STD-202 Method 108	Ambient temperature: 105±2°C Duration: 1000±24 hours Load: Apply the maximum allowable alternating current voltage.	ΔV1mA/V1mA ≤ 10%								

◆ KD/KD-J Series

● Reliability

Experimental project	Testing standards	Experimental conditions/methods	Performance Requirements															
Temperature cycling test	IEC60068-2-14	The temperature variation is tested under the following conditions on the PCB: five cycles.	No visible damage ΔV1mA/V1mA ≤5%															
		<table><tr><th>Steps</th><th>Temperature (°C)</th><th>Cycle (minutes)</th></tr><tr><td>1</td><td>-40±3</td><td>30±3</td></tr><tr><td>2</td><td>Room temperature</td><td>5±3</td></tr><tr><td>3</td><td>125±3</td><td>30±3</td></tr><tr><td>4</td><td>Room temperature</td><td>5±3</td></tr></table>		Steps	Temperature (°C)	Cycle (minutes)	1	-40±3	30±3	2	Room temperature	5±3	3	125±3	30±3	4	Room temperature	5±3
		Steps		Temperature (°C)	Cycle (minutes)													
		1		-40±3	30±3													
		2		Room temperature	5±3													
		3		125±3	30±3													
4	Room temperature	5±3																
8/20 millisecond surge voltage endurance test	IEC61051-1	Waveform: 8/20 s, applying a unidirectional surge current of 10 pulses, with a pulse interval of 30 seconds; The current peak value is referenced against the maximum surge current reduction curve obtained at 20us.	No visible damage ΔVb(1mA)≤±10%															
10/1000 Volt Surge Life Test	IEC61051-1	Waveform: 10/1000 us, applying 10 unidirectional surge currents, with a pulse interval of 2 minutes; Current surge value based on the 1000us waveform corresponding to the maximum surge current reduction curve. Selection.	No visible damage ΔV1mA/V1mA ≤ 10%															
Pressure testing	IEC61051-1	Metal sphere method, 2500 volts AC, 1-minute hold time	No visible damage															

YAGEO SENSOR