Metal Oxide Varistor：KH-AT Serise

◆ Product Introduction

The KH-AT series is an automotive-grade, silicone-encapsulated, through-hole ZnO varistor that has passed AEC-Q200 qualification and operates from -40°C to +125°C. The flexible silicone encapsulation provides excellent resistance to high temperature, humidity, vibration, and cracking. With fast response and high surge absorption capability, the series is available in various sizes and voltage ratings. It is designed for automotive 12V/24V/48V electrical and electronic systems, onboard chargers (OBCs), and high-reliability industrial power supplies, providing effective transient overvoltage and surge protection.

◆ Features

1. Operating voltage (DC): 1mA, ranging from 18V to 1800V
2. Rapid response to transient voltage surges
3. Strong ability to absorb transient energy.
4. Low clamping ratio, no follow-up flow
5. Complies with J-STD-020 standard, moisture sensitivity level MSL 1
6. Operating temperature: -40°C ~ + 105°C
7. Storage temperature: -40°C ~+125°C
8. Safety certifications: UL, CSA, VDE

◆ Application

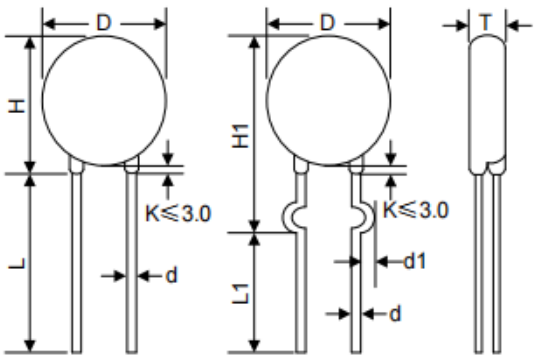
1. Protection of semiconductor devices, including transistors, diodes, integrated circuits, thyristors, and bidirectional thyristors.
2. Consumer Electronics Surge Protection
3. Industrial electronic device surge protection
4. Surge protection for appliances, gas, and oil equipment.
5. Relays and electromagnetic valve surge protection

◆ Coding principles

1	2	3	4		5		6	7	8		9	10	11	12	13	14
Sensitivity resistor voltage (V1mA)			Voltage tolerance		Appearance		Dimensions		Wire forming		Pin configuration		Packaging		Product Category	
820	82x10^{0}V=82V		K	±10%	H	Silicone coating	07	Φ7mm	O	Outer bend tab	No suffix	Direct mount	TR	Spool-wound P0=12.7mm	In-car pressure sensor	
471	47x10^{1}V=470V						10	Φ10mm	F	Straight turn	O	Outer joint	ER	Spool-wound P0=15.0mm		
102	10x10^{2}V=1000V						14	Φ14mm	Blank	Direct mount	F	Y-shaped bend Adjustment pin	TB	Spool case P0=12.7mm		
							20	Φ20mm					EB	Spool case P0=15.0mm		
													Blank	Individual, separate		

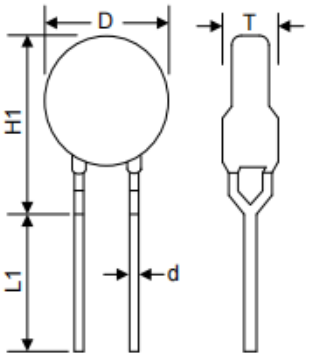
◆ 07mm Series

● Structure and dimensions



O Type

Fig 1. Straight Lead Fig 2. Outer Kink Lead



F Type

Fig 3. In Line Kink Lead

Table 1

Units: mm

Symbol	Min.	Max.
D	-	9.5
H	-	12.0
H1	-	14.5
F	4.2	5.8
d	0.55	0.65
L(min)	20	
L1(min)	15	
D1 (Kink Lead)	0.8	1.6

Table 2

Units: mm

Model	T	e	Model	T	e
201K	4.4	2.0	781K	-	4.4
221K	4.5	2.1	821K	-	4.6
241K	4.6	2.2	911K	-	5.0
271K	4.9	2.4	102K	-	5.2
301K	5.0	2.5	112K	-	5.5
331K	5.1	2.5	122K	-	5.8
361K	5.2	2.7			
391K	5.6	2.8			
431K	5.8	3.0			
471K	6.2	3.2			
511K	6.4	3.4			
561K	6.6	3.6			
621K	7.1	3.9			
681K	7.3	4.2			
751K	7.5	4.3			

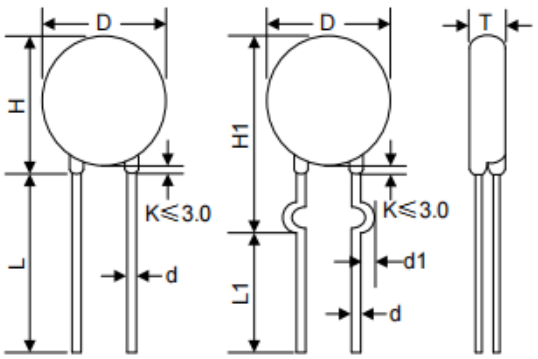
◆ 07mm Series

● Electrical Characteristics

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	Imax	P	Wmax
	(V)	(V)	(V)	(A)	(V)	(A)	(W)	(J)
201KH07-AT	200(180~220)	130	170	10	340	1750	0.25	17
221KH07-AT	220(198~242)	140	180	10	360	1750	0.25	19
241KH07-AT	240(216~264)	150	200	10	395	1750	0.25	21
271KH07-AT	270(243~297)	175	225	10	455	1750	0.25	24
301KH07-AT	300(270~330)	190	250	10	500	1750	0.25	26
331KH07-AT	330(297~363)	210	275	10	550	1750	0.25	28
361KH07-AT	360(324~396)	230	300	10	595	1750	0.25	32
391KH07-AT	390(351~429)	250	320	10	650	1750	0.25	35
431KH07-AT	430(387~473)	275	350	10	710	1750	0.25	40
471KH07-AT	470(423~517)	300	385	10	775	1750	0.25	42
511KH07-AT	510(459~561)	320	415	10	845	1750	0.25	45
561KH07-AT	560(504~616)	350	460	10	925	1750	0.25	49
621KH07-AT	620(558~682)	385	505	10	1025	1750	0.25	55
681KH07-AT	680(612~748)	420	560	10	1120	1750	0.25	60
751KH07-AT	750(675~825)	460	615	10	1240	1750	0.25	64

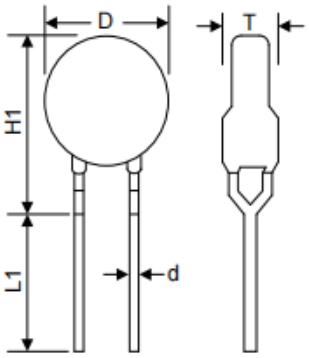
◆ 10mm series

● Structure and dimensions



O Type

Fig 1. Straight Lead Fig 2. Outer Kink Lead



F Type

Fig 3. In Line Kink Lead

Table 1

Units:mm

Symbol	Min.	Max.
D	-	13.0
H	-	16.0
H1	-	18.5
F	6.7	8.3
d	0.75	0.85
L(min)	20	
L1(min)	15	
D1 (Kink Lead)	1.0	1.8

Table 2

Units: mm

Model	T	e	Model	T	e
201K	5.0	2.0	781K	8.8	4.4
221K	5.1	2.1	821K	9.5	4.6
241K	5.2	2.2	911K	10.0	5.0
271K	5.4	2.4	102K	10.6	5.2
301K	5.5	2.5	112K	-	5.5
331K	5.7	2.5	122K	-	5.8
361K	5.9	2.7			
391K	6.2	2.8			
431K	6.5	3.0			
471K	6.7	3.2			
511K	6.8	3.4			
561K	7.0	3.6			
621K	7.3	3.9			
681K	7.6	4.2			
751K	8.4	4.3			

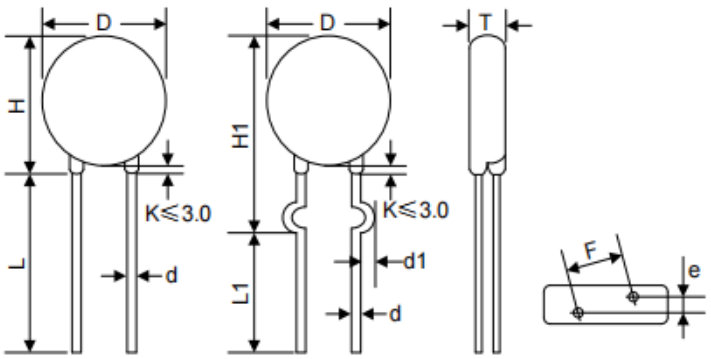
◆ 10mm series

● Electrical Characteristics

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	Imax	P	Wmax
	(V)	(V)	(V)	(A)	(V)	(A)	(W)	(J)
201KH10-AT	200(180~220)	130	170	25	340	3500	0.4	35
221KH10-AT	220(198~242)	140	180	25	360	3500	0.4	39
241KH10-AT	240(216~264)	150	200	25	395	3500	0.4	42
271KH10-AT	270(243~297)	175	225	25	455	3500	0.4	49
301KH10-AT	300(270~330)	190	250	25	500	3500	0.4	54
331KH10-AT	330(297~363)	210	275	25	550	3500	0.4	58
361KH10-AT	360(324~396)	230	300	25	595	3500	0.4	65
391KH10-AT	390(351~429)	250	320	25	650	3500	0.4	70
431KH10-AT	430(387~473)	275	350	25	710	3500	0.4	80
471KH10-AT	470(423~517)	300	385	25	775	3500	0.4	85
511KH10-AT	510(459~561)	320	415	25	845	3500	0.4	90
561KH10-AT	560(504~616)	350	460	25	925	3500	0.4	92
621KH10-AT	620(558~682)	385	505	25	1025	3500	0.4	95
681KH10-AT	680(612~748)	420	560	25	1120	3500	0.4	98
751KH10-AT	750(675~825)	460	615	25	1240	3500	0.4	100
781KH10-AT	780(702~858)	485	640	25	1290	3500	0.4	105
821KH10-AT	820(738~902)	510	670	25	1355	3500	0.4	110
911KH10-AT	910(819~1001)	550	745	25	1500	3500	0.4	130
102KH10-AT	1000(900~1100)	625	825	25	1650	3500	0.4	140

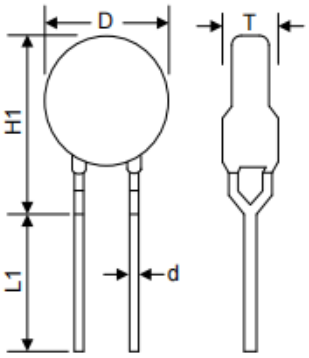
◆ 14mm Series

● Structure and dimensions



O Type

Fig 1. Straight Lead Fig 2. Outer Kink Lead



F Type

Fig 3. In Line Kink Lead

Table 1

Units:mm

Symbol	Min.	Max.
D	-	17.0
H	-	20.0
H1	-	22.5
F	6.7	8.3
d	0.75	0.85
L(min)	20	
L1(min)	15	
D1 (Kink Lead)	1.0	1.8

Table 2

Units:mm

Model	T	e (±1)	Model	T	e (±1)
201K	5.0	2.0	781K	8.8	4.4
221K	5.1	2.1	821K	9.5	4.6
241K	5.2	2.2	911K	10.0	5.0
271K	5.4	2.4	102K	10.6	5.2
301K	5.5	2.5	112K	11.0	5.5
331K	5.7	2.5	122K	-	5.8
361K	5.9	2.7			
391K	6.2	2.8			
431K	6.5	3.0			
471K	6.7	3.2			
511K	6.8	3.4			
561K	7.0	3.6			
621K	7.3	3.9			
681K	7.6	4.2			
751K	8.4	4.3			

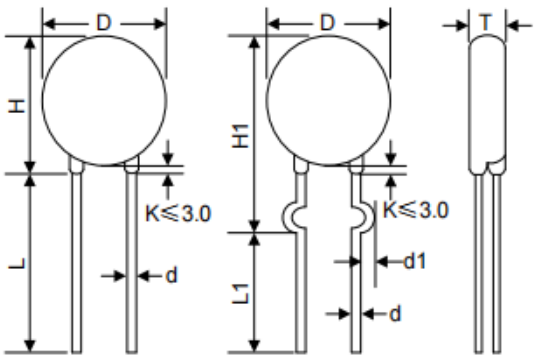
◆ 14mm Series

● Electrical Characteristics

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	Imax	P	Wmax
	(V)	(V)	(V)	(A)	(V)	(A)	(W)	(J)
201KH14-AT	200(180~220)	130	170	50	340	6000	0.6	70
221KH14-AT	220(198~242)	140	180	50	360	6000	0.6	78
241KH14-AT	240(216~264)	150	200	50	395	6000	0.6	84
271KH14-AT	270(243~297)	175	225	50	455	6000	0.6	99
301KH14-AT	300(270~330)	190	250	50	500	6000	0.6	108
331KH14-AT	330(297~363)	210	275	50	550	6000	0.6	115
361KH14-AT	360(324~396)	230	300	50	595	6000	0.6	130
391KH14-AT	390(351~429)	250	320	50	650	6000	0.6	140
431KH14-AT	430(387~473)	275	350	50	710	6000	0.6	155
471KH14-AT	470(423~517)	300	385	50	775	6000	0.6	175
511KH14-AT	510(459~561)	320	415	50	845	6000	0.6	180
561KH14-AT	560(504~616)	350	460	50	925	6000	0.6	185
621KH14-AT	620(558~682)	385	505	50	1025	6000	0.6	190
681KH14-AT	680(612~748)	420	560	50	1120	6000	0.6	200
751KH14-AT	750(675~825)	460	615	50	1240	6000	0.6	210
781KH14-AT	780(702~858)	485	640	50	1290	6000	0.6	220
821KH14-AT	820(738~902)	510	670	50	1355	6000	0.6	235
911KH14-AT	910(819~1001)	550	745	50	1500	6000	0.6	255
102KH14-AT	1000(900~1100)	625	825	50	1650	6000	0.6	280
112KH14-AT	1100(990~1210)	680	895	50	1815	6000	0.6	310

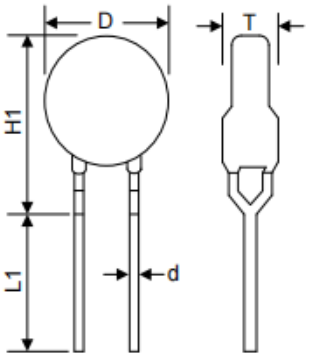
◆ 20mm series

● Structure and dimensions



O Type

Fig 1. Straight Lead Fig 2. Outer Kink Lead



F Type

Fig 3. In Line Kink Lead

Table 1

Units: mm

Symbol	Min.	Max.
D	-	23.0
H	-	26.5
H1	-	29.0
F	9.0	11.0
d	0.95	1.05
L(min)	20	
L1(min)	15	
D1 (Kink Lead)	1.2	2.0

Table 2

Units: mm

Model	T	e (±1)	Model	T	e (±1)
201K	5.2	2.0	781K	9.2	4.4
221K	5.4	2.1	821K	9.8	4.6
241K	5.5	2.2	911K	10.5	5.0
271K	5.7	2.4	102K	11.0	5.2
301K	5.8	2.5	112K	11.4	5.5
331K	6.0	2.5	122K	11.8	5.8
361K	6.2	2.7			
391K	6.4	2.8			
431K	6.6	3.0			
471K	6.8	3.2			
511K	7.0	3.4			
561K	7.2	3.6			
621K	7.5	3.9			
681K	7.8	4.2			
751K	8.6	4.3			

◆ 20mm series

● Electrical Characteristics

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	Imax	P	Wmax
	(V)	(V)	(V)	(A)	(V)	(A)	(W)	(J)
201KH20-AT	200(180~220)	130	170	100	340	10000	1.0	140
221KH20-AT	220(198~242)	140	180	100	360	10000	1.0	155
241KH20-AT	240(216~264)	150	200	100	395	10000	1.0	168
271KH20-AT	270(243~297)	175	225	100	455	10000	1.0	190
301KH20-AT	300(270~330)	190	250	100	500	10000	1.0	210
331KH20-AT	330(297~363)	210	275	100	550	10000	1.0	228
361KH20-AT	360(324~396)	230	300	100	595	10000	1.0	255
391KH20-AT	390(351~429)	250	320	100	650	10000	1.0	275
431KH20-AT	430(387~473)	275	350	100	710	10000	1.0	305
471KH20-AT	470(423~517)	300	385	100	775	10000	1.0	350
511KH20-AT	510(459~561)	320	415	100	845	10000	1.0	360
561KH20-AT	560(504~616)	350	460	100	925	10000	1.0	380
621KH20-AT	620(558~682)	385	505	100	1025	10000	1.0	390
681KH20-AT	680(612~748)	420	560	100	1120	10000	1.0	400
751KH20-AT	750(675~825)	460	615	100	1240	10000	1.0	420
781KH20-AT	780(702~858)	485	640	100	1290	10000	1.0	440
821KH20-AT	820(738~902)	510	670	100	1355	10000	1.0	460
911KH20-AT	910(819~1001)	550	745	100	1500	10000	1.0	510
102KH20-AT	1000(900~1100)	625	825	100	1650	10000	1.0	565
112KH20-AT	1100(990~1210)	680	895	100	1815	10000	1.0	620
122KH20-AT	1200(1080~1320)	750	990	100	1980	10000	1.0	660

◆ Reliability

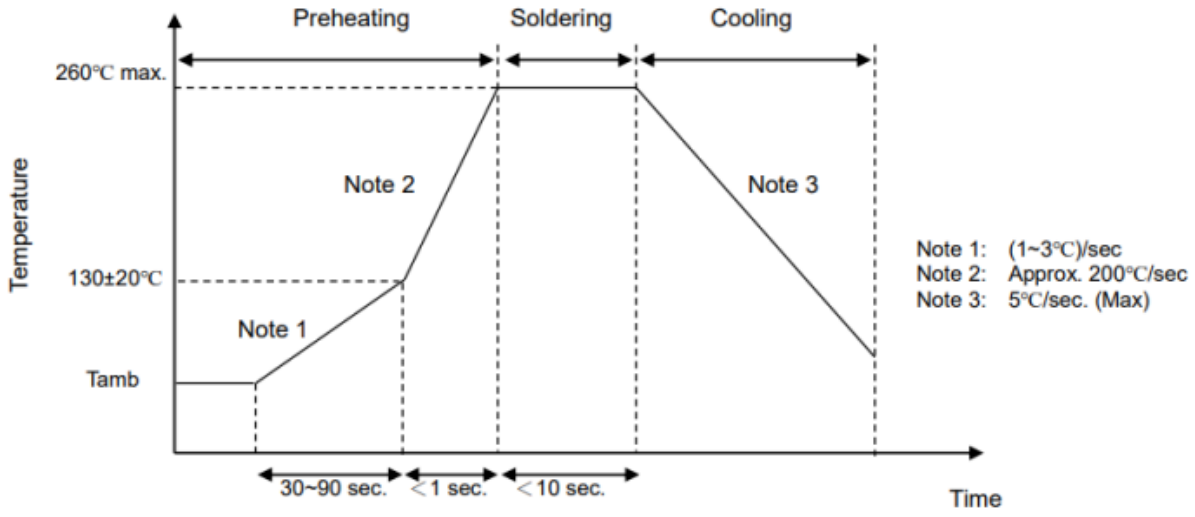
Experimental project	Testing standards	Experimental conditions/methods	Performance Requirements
Pin strength	MIL-STD-202 Method 211	1. Pin pull test (pull force 2.27 kg) 2. Bending test of the direct pull-out pin (load: 227 grams). External force applied for: 10±1 seconds.	No visible damage |▵V1mA /V1mA| ≦ 10%
Vibration testing	MIL-STD-202 Method204	Acceleration: 5g Scanning time: 20 minutes Frequency range: 10～2000 Hz 3 For each axis, 12 sweep cycles per axis.	No visible damage |▵V1mA /V1mA| ≦ 10%
Solderability	J-STD-002	245±5°C ， 5+0/-0.5sec	Tin coverage≧95%
Heat resistant to welding	MIL-STD-202 Method 210	Samples are not pre-heated. Temperature: 260±5℃，Immersion time: 10±1 seconds Insertion and withdrawal speed: 25 mm/sec, with a tolerance of ±6 mm/sec. Number of thermal shock cycles: 1	No visible damage |▵V1mA /V1mA| ≦ 10%
Excessive humidity Experiment	MIL-STD-202 Method 103	Test temperature: 85℃ Relative humidity: 85% Test duration: 1000 hours Test voltage: 85% of the nominal voltage of the pressure sensor (with a voltage tolerance of ±5%, and not less than 85%). After the test, the device was allowed to sit idle for 24 ± 2 hours before electrical performance measurements were taken.	No visible damage |▵V1mA /V1mA| ≦ 10%
High-temperature storage Experiment	MIL-STD-202 Method 108	Test temperature: 150°C (with a permissible deviation of +3°C, no lower limit, temperature must not be below 150°C) Test duration: 1000 hours, fully discharged After the test, the device was allowed to sit idle for 24 ± 2 hours before undergoing electrical parameter testing.	No visible damage |▵V1mA /V1mA| ≦ 10%
Durable when powered on Longevity testing	MIL-STD-202 Method 108	Test temperature: 125°C (with a permissible deviation of +3°C, no lower limit, temperature must not be below 125°C) Test duration: 1000 hours The applied voltage was 85% of the nominal voltage for the pressure sensor. (Voltage tolerance: +5%/-0%, Voltage must not be below 85% of the nominal voltage) After the test, the electrical performance was assessed after a 24 ± 2 hour rest period.	No visible damage |▵V1mA /V1mA| ≦ 10%
Mechanical shock Experiment	MIL-STD-202, Method 213	Maximum acceleration: 100g, half-sine wave impact profile Pulse duration: 6 milliseconds Three mutually perpendicular axes were used for testing. Total impact: 18 times	No visible damage |▵V1mA /V1mA| ≦ 10%

◆ Reliability

Experimental project	Testing standards	Experimental conditions/methods	Performance Requirements
Temperature cycling test	JESD22 Method JA-104	Low-temperature test temperature: -40°C (with a maximum deviation of 0°C, and a minimum of -43°C) High-temperature test temperature: 125°C (maximum + 3°C, must not be lower than 125°C) Heating/Cooling Hold Times: 15 minutes each Time for switching between zones: 5 minutes Cycle rate: 2 complete cycles per hour Total number of iterations: 1000 After the test, the device was allowed to rest for 24 ± 2 hours before undergoing electrical performance testing.	No visible damage |△V1mA /V1mA| ≦10%
Solvent resistance test	MIL-STD-202 Method 215	Add water-based cleaning agents: OKEM Clean or equivalent alternatives. Prohibition of the use of restricted and prohibited organic solvents.	No visible damage
8/20 microsecond waveEndurance testing	IEC 61051-1	Waveform: 8/20 microsecond standard current waveform, with 10 pulses, single-polarity, with a 30-second interval between pulses. The peak current value is based on the maximum surge current reduction curve for a 20μs waveform.	No visible damage |△V1mA /V1mA| ≦10%

◆ Recommended welding processes

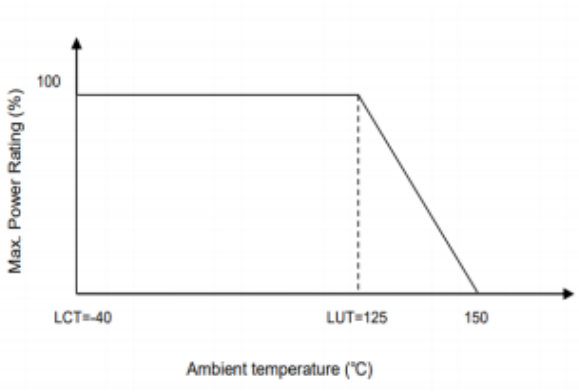
● Wave Soldering Temperature Curve



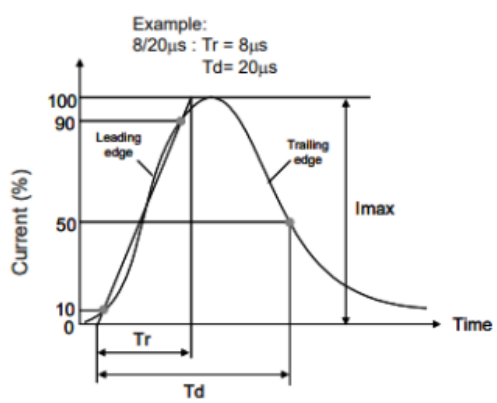
● Recommended process conditions for repairing with a soldering iron.

Project	Conditions
Soldering iron tip temperature	360℃ (max.)
Welding time	3 sec. (max.)
Distance between the welding point and the coating layer.	2 mm (min.)

● Power reduction curve



● Surge current standard waveform



◆ Packaging method

● Specifications for straps

Straight pins

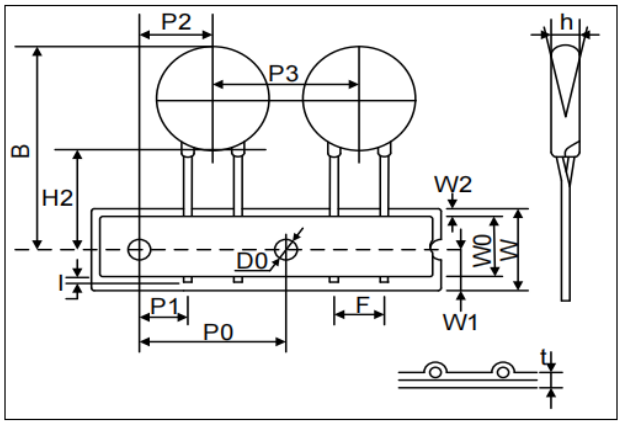


Figure A

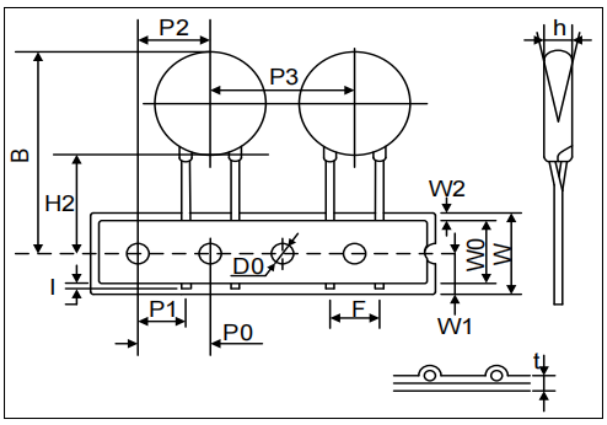


Figure B

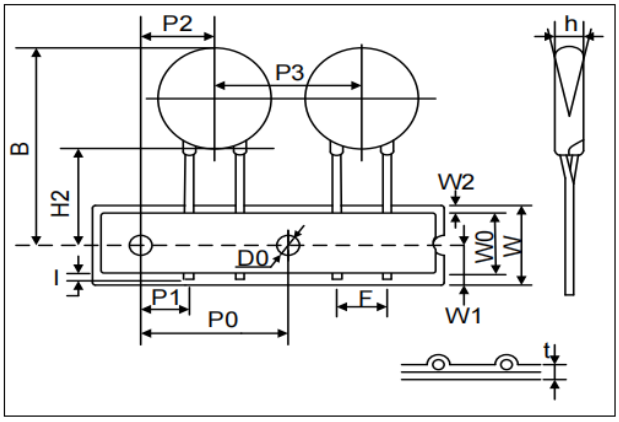


Figure C

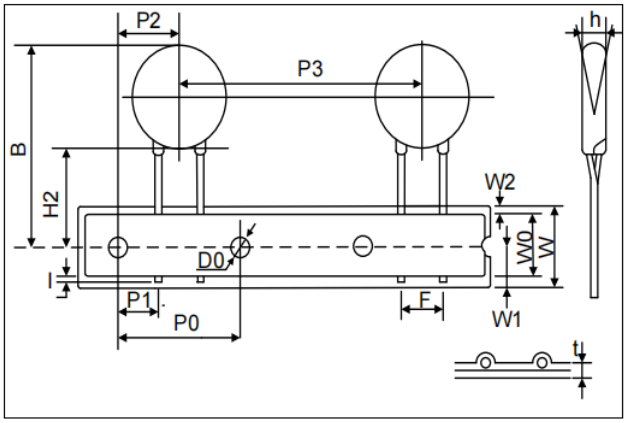


Figure D

（Units：mm）

Braiding Dimensions	series	P0	P1	P2	P3	F	h	W	W0	W1	W2	H2	I	D0	t	B	Figure
		±1.0	±0.7	±1.3	±1.0	±0.8	0	±1.0	±1.0	±0.5	Max.	±0.2	Max.	±0.2	±0.3	Max.	
P0=12.7	07	12.7	3.85	6.35	12.7	5.0	±2	18.0	12.0	9.0	3.0	20.0	2.0	4.0	0.6	32	A
	10	12.7	8.95	12.7	25.4	7.5	±2	18.0	12.0	9.0	3.0	20.0	2.0	4.0	0.6	36	B
	14	12.7	8.95	12.7	25.4	7.5	±4	18.0	12.0	9.0	3.0	20.0	2.0	4.0	0.6	40	B
	20	12.7	8.95 /7.7	12.7	25.4	7.5/ 10.0	±4	18.0	12.0	9.0	3.0	20.0	2.0	4.0	0.6	45	B
P0=15.0	10	15.0	3.85	7.5	15.0	7.5	±2	18.0	12.0	9.0	3.0	20.0	2.0	4.0	0.6	36	C
	14	15.0	3.85	7.5	30.0	7.5	±4	18.0	12.0	9.0	3.0	20.0	2.0	4.0	0.6	40	D

Specifications for straps

Parallel bending arm

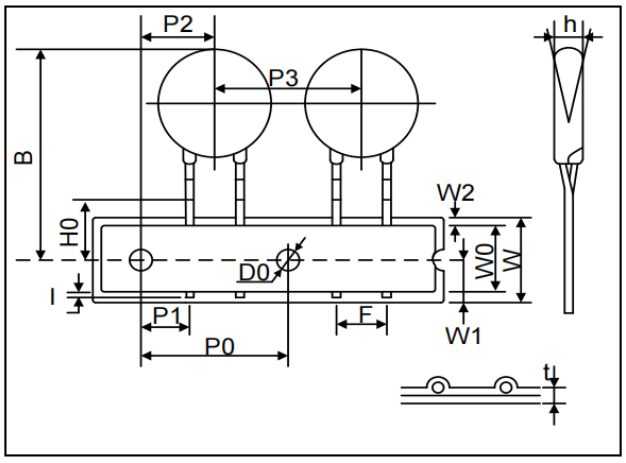


Figure A

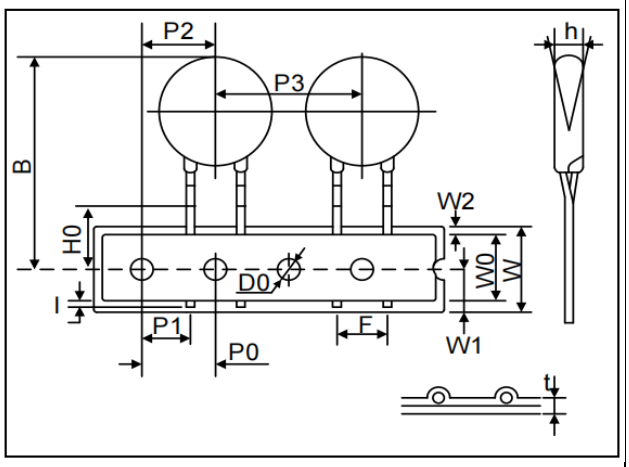


Figure B

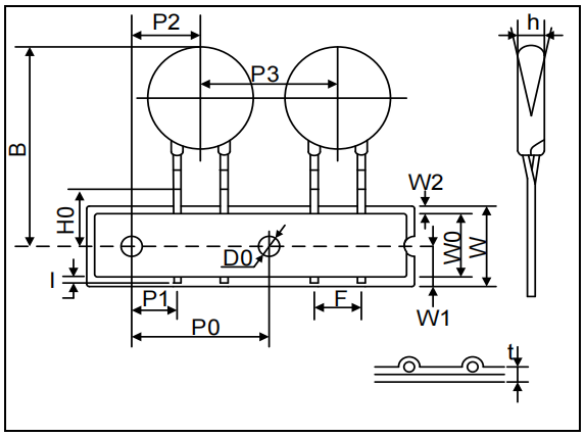


Figure C

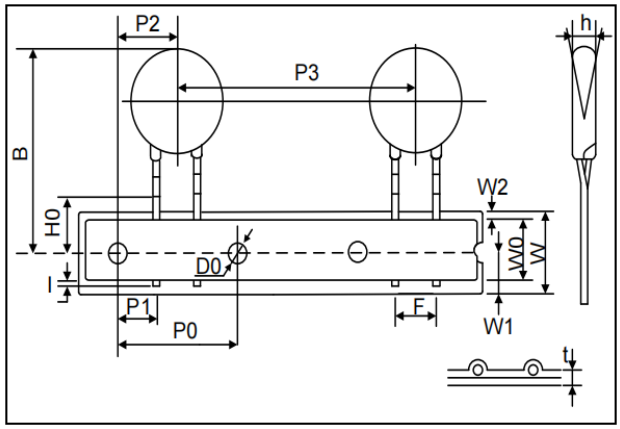


Figure D

（Units: mm）

Braiding Dimensions	series	P0	P1	P2	P3	F	h	W	W0	W1	W2	H2	I	D0	t	B	Figure
		±1.0	±0.7	±1.3	±1.0	±0.8	0	±1.0	±1.0	±0.5	Max.	±0.2	Max.	±0.2	±0.3	Max.	
P0=12.7	07	12.7	3.85	6.35	12.7	5.0	±2	18.0	12.0	9.0	3.0	16.0	2.0	4.0	0.6	32	A
	10	12.7	8.95	12.7	25.4	7.5	±2	18.0	12.0	9.0	3.0	16.0	2.0	4.0	0.6	36	B
	14	12.7	8.95	12.7	25.4	7.5	±4	18.0	12.0	9.0	3.0	16.0	2.0	4.0	0.6	40	B
	20	12.7	8.95 /7.7	12.7	25.4	7.5/ 10.0	±4	18.0	12.0	9.0	3.0	16.0	2.0	4.0	0.6	45	B
P0=15.0	10	15.0	3.85	7.5	15.0	7.5	±2	18.0	12.0	9.0	3.0	16.0	2.0	4.0	0.6	36	C
	14	15.0	3.85	7.5	30.0	7.5	±4	18.0	12.0	9.0	3.0	16.0	2.0	4.0	0.6	40	D

Specifications for straps

External forming pin

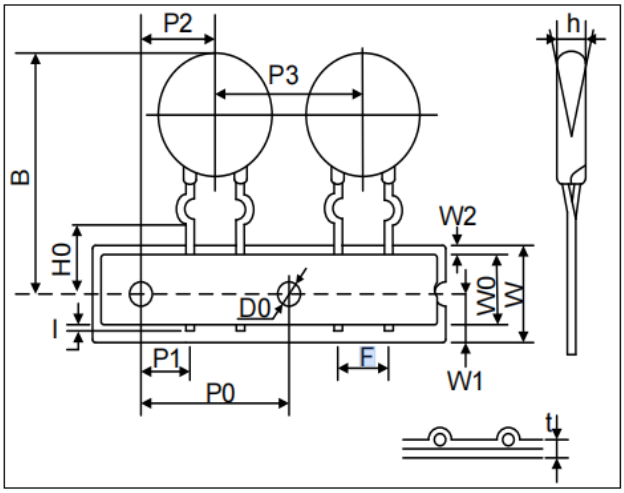


Figure A

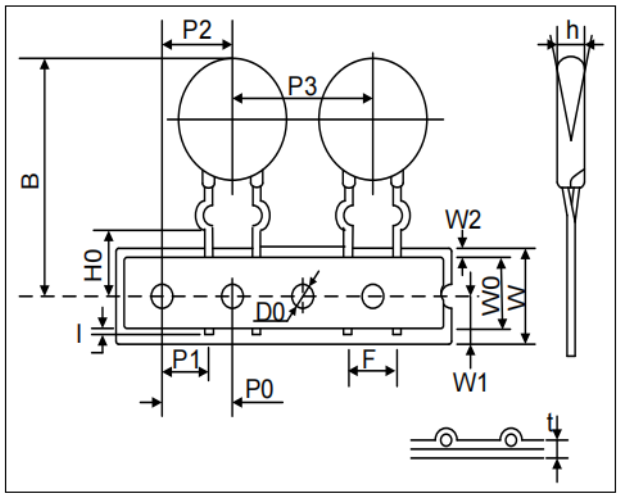


Figure B

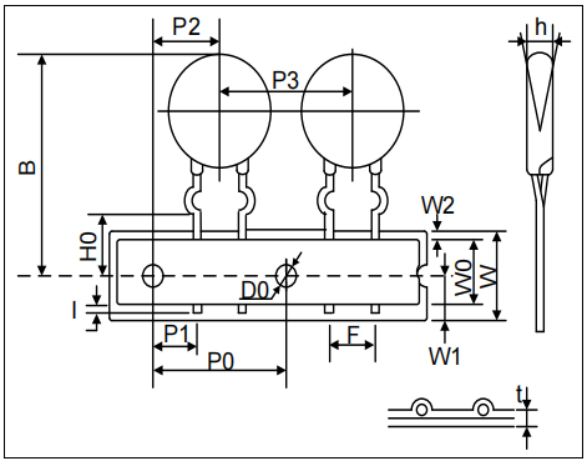


Figure C

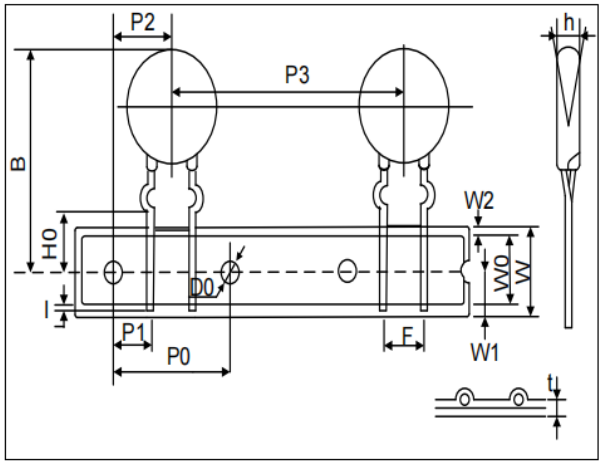


Figure D

（Units：mm）

Braiding Dimensions	series	P0	P1	P2	P3	F	h	W	W0	W1	W2	H2	I	D0	t	B	Figure
		±1.0	±0.7	±1.3	±1.0	±0.8	0	±1.0	±1.0	±0.5	Max.	±0.2	Max.	±0.2	±0.3	Max.	
P0=12.7	07	12.7	3.85	6.35	12.7	5.0	±2	18.0	12.0	9.0	3.0	16.0	2.0	4.0	0.6	32	A
	10	12.7	8.95	12.7	25.4	7.5	±2	18.0	12.0	9.0	3.0	16.0	2.0	4.0	0.6	36	B
	14	12.7	8.95	12.7	25.4	7.5	±4	18.0	12.0	9.0	3.0	16.0	2.0	4.0	0.6	40	B
	20	12.7	8.95 /7.7	12.7	25.4	7.5/ 10.0	±4	18.0	12.0	9.0	3.0	16.0	2.0	4.0	0.6	45	B
P0=15.0	10	15.0	3.85	7.5	15.0	7.5	±2	18.0	12.0	9.0	3.0	16.0	2.0	4.0	0.6	36	C
	14	15.0	3.85	7.5	30.0	7.5	±4	18.0	12.0	9.0	3.0	16.0	2.0	4.0	0.6	40	D

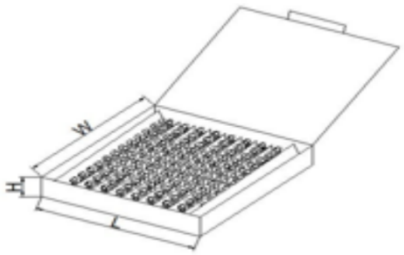
◆ Packaging quantity

● Bulk packaging

Series	Voltage type	Plain, unbranded (per piece/per package)	
		Extended pin	Short pin
07Φ	201K-271K	800	800
	301K-511K	700	700
	561K-751K	500	500
10Φ	201K-271K	500	500
	301K-391K	450	450
	431K-561K	400	400
	621K-781K	350	350
	821K-102K	300	300
14Φ	201K-271K	400	400
	301K-391K	300	300
	431K-561K	250	250
	621K-781K	200	200
	821K-112K	150	150
20Φ	201K-471K	75	75
	511K-681K	50	50
	751K-122K	25	25

Boxed packaging

Series	Voltage type	P0: 12.7mm (pcs/box)	P0: 15.0mm (pcs/box)
07Φ	201K-361K	1200	/
	391K-561K	1000	
	621K-751K	750	
10Φ	201K-241K	650	900
	271K-361K	600	900
	391K-471K	500	800
	511K-621K	450	700
	681K-751K	400	600
	781K-102K	300	500
14Φ	201K-241K	650	450
	271K-331K	600	450
	361K-471K	500	400
	511K-621K	450	350
	681K-751K	400	300
	781K-112K	300	250
20Φ	201K-301K	350	/
	331K-681K	250	
	751K-911K	200	



Series	L±5	W±5	H±5
07~10Φ	340	245	45
14~20Φ	340	245	50

- Spool and cable packaging

Series	Voltage type	P0: 12.7mm (pcs/roll)	P0: 15.0mm (pcs/roll)
07Φ	201K-331K	1800	/
	361K-391K	1500	
	431K-751K	1200	
10Φ	201K-331K	800	1000
	361K-621K	750	800
	681K-751K	600	750
	781K-112K	500	600
14Φ	201K-331K	800	800
	361K-621K	600	600
	681K-751K	500	500
	781K-112K	450	450
20Φ	201K-301K	400	/
	331K-681K	300	
	751K-102K	250