SPECIFICATION FOR APPROVAL

CUSTOMER: _____

PART NO: _____

DESCRIBE: _____

SPECS OF STE: Series

PARTS ORIGIN: China ShanTou

★ RoHS Request: RoHS Corresponds ☑
REACH Corresponds ☐
Halogen Corresponds ☐

Written	For Customer Approval
Xie Dongju	
Checked	
LiYan	
Approval	
LinRong	(Once confirmed, please return one copy)

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1. Code description

Example:

STE – □□ D □□□ K B Z

(1) (2) (3) (4) (5) (6) (7)

No.	Item	Specification
(1)	STE	Company logo
(2)	□□	Product diameter code: e.g: 05=5.0mm、07=7.0mm、14=14.0mm、20=20.0mm
(3)	D	Disc type
(4)	□□□	Voltage code: e.g: (201:20x10^1V=200V ; 331:33x10^1V=330V ; 471:47x10^1V=470V ; 102:10x10^2V=1000V)
(5)	K	Voltage tolerance code: e.g: K: ±10%
(6)	B	Product packing code: e.g: B for bulk T for tape
(7)	Z	Product marking code: e.g: Z for high surge product ; Q for 6KV3KA product Norminal products(Not identified)

2. Specifications

2.1. Size list (STE-05D Series)

Part No.	Type of STE	Dimension（mm）					
		D±1	T±1	L min	F±0.8	Φd±0.05	c Max
	STE-05D180KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D220KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D270KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D330KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D390KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D470KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D560KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D680KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D820KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D101KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D121KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D151KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D181KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D201KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D221KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D241KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D271KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D301KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D331KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D361KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D391KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D431KB	6.0	3.0	16.0	5.0	0.5	3.0
	STE-05D471KB	6.0	4.0	16.0	5.0	0.5	3.0
	STE-05D511KB	6.0	4.0	16.0	5.0	0.5	3.0
	STE-05D561KB	6.0	4.0	16.0	5.0	0.5	3.0
	STE-05D621KB	6.0	4.0	16.0	5.0	0.5	3.0
	STE-05D681KB	6.0	4.0	16.0	5.0	0.5	3.0

2.2. Size list (STE-07D Series)

Part No.	Type of STE	Dimension（mm）					
		D±1	T±1	L min	F±0.8	Φd±0.05	c Max
	STE-07D180KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D220KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D270KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D330KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D390KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D470KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D560KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D680KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D820KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D101KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D121KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D151KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D181KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D201KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D221KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D241KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D271KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D301KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D331KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D361KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D391KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D431KB	8.0	3.0	16.0	5.0	0.5	3.0
	STE-07D471KB	8.0	4.0	16.0	5.0	0.5	3.0
	STE-07D511KB	8.0	4.0	16.0	5.0	0.5	3.0
	STE-07D561KB	8.0	4.0	16.0	5.0	0.5	3.0
	STE-07D621KB	8.0	4.0	16.0	5.0	0.5	3.0
	STE-07D681KB	8.0	4.0	16.0	5.0	0.5	3.0
	STE-07D751KB	8.0	5.0	16.0	5.0	0.5	3.0

2.3. Size list (STE-10D Series)

Part No.	Type of STE	Dimension（mm）					
		D±1	T±1	L min	F±0.8	Φd±0.05	c Max
	STE-10D180KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D220KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D270KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D330KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D390KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D470KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D560KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D680KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D820KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D101KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D121KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D151KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D181KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D201KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D221KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D241KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D271KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D301KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D331KB	11.0	3.0	16.0	7.5	0.7	3.0
	STE-10D361KB	11.0	4.0	16.0	7.5	0.7	3.0
	STE-10D391KB	11.0	4.0	16.0	7.5	0.7	3.0
	STE-10D431KB	11.0	4.0	16.0	7.5	0.7	3.0
	STE-10D471KB	11.0	4.0	16.0	7.5	0.7	3.0
	STE-10D511KB	11.0	4.0	16.0	7.5	0.7	3.0
	STE-10D561KB	11.0	4.0	16.0	7.5	0.7	3.0
	STE-10D621KB	11.0	4.0	16.0	7.5	0.7	3.0
	STE-10D681KB	11.0	5.0	16.0	7.5	0.7	3.0
	STE-10D751KB	11.0	5.0	16.0	7.5	0.7	3.0
	STE-10D781KB	11.0	5.0	16.0	7.5	0.7	3.0
	STE-10D821KB	11.0	5.0	16.0	7.5	0.7	3.0
	STE-10D911KB	11.0	6.0	16.0	7.5	0.7	3.0
	STE-10D102KB	11.0	6.0	16.0	7.5	0.7	3.0
	STE-10D112KB	11.0	6.0	16.0	7.5	0.7	3.0

2.4. Size list (STE-14D Series)

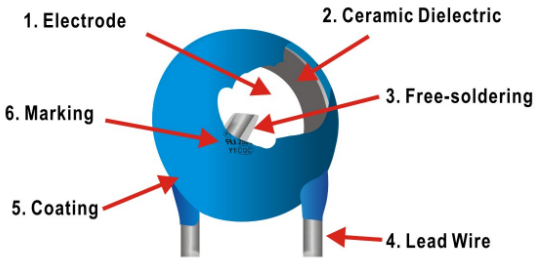
Part No.	Type of STE	Dimension（mm）					
		D±1	T±1	L min	F±0.8	Φd±0.05	c Max
	STE-14D180KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D220KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D270KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D330KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D390KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D470KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D560KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D680KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D820KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D101KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D121KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D151KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D181KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D201KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D221KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D241KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D271KB	15.0	3.0	16.0	7.5	0.7	3.0
	STE-14D301KB	15.0	4.0	16.0	7.5	0.7	3.0
	STE-14D331KB	15.0	4.0	16.0	7.5	0.7	3.0
	STE-14D361KB	15.0	4.0	16.0	7.5	0.7	3.0
	STE-14D391KB	15.0	4.0	16.0	7.5	0.7	3.0
	STE-14D431KB	15.0	4.0	16.0	7.5	0.7	3.0
	STE-14D471KB	15.0	4.0	16.0	7.5	0.7	3.0
	STE-14D511KB	15.0	4.0	16.0	7.5	0.7	3.0
	STE-14D561KB	15.0	5.0	16.0	7.5	0.7	3.0
	STE-14D621KB	15.0	5.0	16.0	7.5	0.7	3.0
	STE-14D681KB	15.0	5.0	16.0	7.5	0.7	3.0
	STE-14D751KB	15.0	5.0	16.0	7.5	0.7	3.0
	STE-14D781KB	15.0	5.0	16.0	7.5	0.7	3.0
	STE-14D821KB	15.0	5.0	16.0	7.5	0.7	3.0
	STE-14D911KB	15.0	6.0	16.0	7.5	0.7	3.0
	STE-14D102KB	15.0	6.0	16.0	7.5	0.7	3.0
	STE-14D112KB	15.0	6.0	16.0	7.5	0.7	3.0
	STE-14D122KB	15.0	7.0	16.0	7.5	0.7	3.0
	STE-14D142KB	15.0	7.0	16.0	7.5	0.7	3.0
	STE-14D152KB	15.0	8.0	16.0	7.5	0.7	2.5
	STE-14D162KB	15.0	8.0	16.0	7.5	0.7	3.0
	STE-14D182KB	15.0	8.0	16.0	7.5	0.7	3.0

2.5. Size list (STE-20D Series)

Part No.	Type of STE	Dimension（mm）					
		D±1	T±1	L min	F±0.8	Φd±0.05	c Max
	STE-20D180KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D220KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D270KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D330KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D390KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D470KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D560KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D680KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D820KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D101KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D121KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D151KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D181KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D201KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D221KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D241KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D271KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D301KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D331KB	21.0	3.0	16.0	10.0	1.0	3.0
	STE-20D361KB	21.0	4.0	16.0	10.0	1.0	3.0
	STE-20D391KB	21.0	4.0	16.0	10.0	1.0	3.0
	STE-20D431KB	21.0	4.0	16.0	10.0	1.0	3.0
	STE-20D471KB	21.0	4.0	16.0	10.0	1.0	3.0
	STE-20D511KB	21.0	4.0	16.0	10.0	1.0	3.0
	STE-20D561KB	21.0	4.0	16.0	10.0	1.0	3.0
	STE-20D621KB	21.0	4.0	16.0	10.0	1.0	3.0
	STE-20D681KB	21.0	5.0	16.0	10.0	1.0	3.0
	STE-20D751KB	21.0	5.0	16.0	10.0	1.0	3.0
	STE-20D781KB	21.0	5.0	16.0	10.0	1.0	3.0
	STE-20D821KB	21.0	5.0	16.0	10.0	1.0	3.0
	STE-20D911KB	21.0	6.0	16.0	10.0	1.0	3.0
	STE-20D102KB	21.0	6.0	16.0	10.0	1.0	3.0
	STE-20D112KB	21.0	6.0	16.0	10.0	1.0	3.0
	STE-20D122KB	21.0	7.0	16.0	10.0	1.0	3.0
	STE-20D142KB	21.0	7.0	16.0	10.0	1.0	3.0
	STE-20D152KB	21.0	8.0	16.0	10.0	1.0	2.5
	STE-20D162KB	21.0	8.0	16.0	10.0	1.0	3.0
	STE-20D182KB	21.0	8.0	16.0	10.0	1.0	3.0

3. Introduction

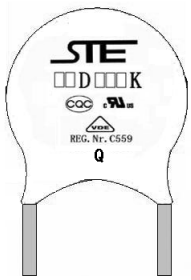
3.1. Exterior structure



（Fig 1）Construction

（2-1）Norminal products

（2-2）High surge product



（2-3）6KV3KA product

3.2. Material List

NO.	Name	Material name	Origin	Note（Ingredients）
1	Electrode	Silver	China	5%
2	Ceramic Dielectric	Zinc Oxide	China	47%
3	Free-soldering	Sn98%,Ag2%	China	8%
4	Metal pin	Down-lead	China	10%
5	Coating	Epoxy Resin	China	30%

4. Rated value & Charaterastic

4.1. Check list 1-5 of rated value。

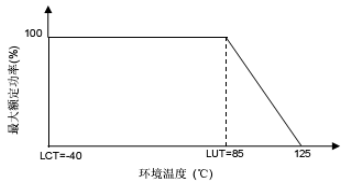
P.S :all information only for reference ,not appraisal

4.2. Other feature

Leakage current：

when in +25℃：≤20μA（$V_{1.0mA}$ Of 80%）;

Clamit charateristic：40/085/21



（Fig 3）

4.3. Derating

4.3.1. Maximum continuous voltage or dc voltage and temperature should be consistent With the relationship between the fig 3.

4.3.2. Max Current Derating Curve Please take company cataloge for reference.

5. Zinc Oxide Varistor of Features

5.1. Features list (STE-05D Series) (list 1)

Part No.	marking code		Maximum allowable Voltage		Varistor voltage	Clamping voltage (Max.)		Maximum Peak Current (8/20μs)			Maximum Energy (10/1000μs) (J)			Rated Power	Typical Capacitance (Reference)
	high surge	6KV 3KA	AC rms (V)	DC rms (V)	$V_{1.0mA}$ (V)	VC (V)	IP (A)	Standard	high surge	6KV 3KA	Standard	high surge	6KV 3KA	(W)	1KHz (PF)
STE-05D180K	Z	N/A	11	14	18(15-21.6)	40	1	100/50×2	250/100×2	N/A	0.4	0.6	N/A	0.01	1400
STE-05D220K	Z	N/A	14	18	22(19.5-26)	48					0.5	0.7	N/A		1150
STE-05D270K	Z	N/A	17	22	27(24-31)	60					0.6	0.9	N/A		930
STE-05D330K	Z	N/A	20	26	33(29.5-36.5)	73					0.8	1.1	N/A		760
STE-05D390K	Z	N/A	25	31	39(35-43)	80					0.9	1.2	N/A		640
STE-05D470K	Z	N/A	30	38	47(42-52)	104					1.1	1.5	N/A		530
STE-05D560K	Z	N/A	35	45	56(50-62)	123					1.3	1.8	N/A		450
STE-05D680K	Z	N/A	40	56	68(61-75)	145					1.6	2.2	N/A		370
STE-05D820K	Z	N/A	50	65	82(74-90)	150	5	400/200×2	800/400×2	N/A	2.5	4.0	N/A	0.10	300
STE-05D101K	Z	N/A	60	85	100(90-110)	175					3.0	4.1	N/A		250
STE-05D121K	Z	N/A	75	100	120(108-132)	210					4.0	4.9	N/A		210
STE-05D151K	Z	N/A	95	125	150(135-165)	260					4.8	6.5	N/A		165
STE-05D181K	Z	N/A	115	150	180(162-198)	320					5.9	7.5	N/A		140
STE-05D201K	Z	N/A	130	170	200(185-225)	355					6.5	8.5	N/A		125
STE-05D221K	Z	N/A	140	180	220(198-242)	380					7.0	9.0	N/A		110
STE-05D241K	Z	N/A	150	200	240(216-264)	415					8.0	10.5	N/A		100
STE-05D271K	Z	N/A	175	225	270(243-297)	475					8.5	11	N/A		95
STE-05D301K	Z	N/A	190	250	300(270-330)	520					9.0	12	N/A		85
STE-05D331K	Z	N/A	210	275	330(297-363)	570					9.5	13	N/A		75
STE-05D361K	Z	N/A	230	300	360(324-396)	620					10.0	16	N/A		70
STE-05D391K	Z	N/A	250	320	390(351-429)	675					12.0	17	N/A		65
STE-05D431K	Z	N/A	275	350	430(387-473)	745					13.0	20	N/A		60
STE-05D471K	Z	N/A	300	385	470(423-517)	810					15.0	21	N/A		55
STE-05D511K	Z	N/A	320	415	510(459-561)	845					16.0	22.5	N/A		50
STE-05D561K	Z	N/A	350	460	560(504-616)	920					16.8	24	N/A		45
STE-05D621K	Z	N/A	385	505	620(558-682)	1025					17.7	26.6	N/A		40
STE-05D681K	Z	N/A	420	560	680(612-748)	1120					19.4	29.1	N/A		38

5.2. Features list (STE-07D Series) (list 2)

Part No.	marking code		Maximum allowable Voltage		Varistor voltage	Clamping voltage (Max.)		Maximum Peak Current (8/20μs)			Maximum Energy (10/1000μs) (J)			Rated Power	Typical Capacitance (Reference)
	high surge	6KV 3KA	AC rms (V)	DC rms (V)	$V_{1.0mA}$ (V)	VC (V)	IP (A)	Stand ard	high surge	6KV 3KA	Stand ard	high surge	6KV 3KA	(W)	1KHz (PF)
STE-07D180K	Z	N/A	11	14	18(15-21.6)	36	2.5	250/125×2	500/250×2	N/A	0.9	2.0	N/A	0.02	2800
STE-07D220K	Z	N/A	14	18	22(19.5-26)	43					1.1	2.4	N/A		2300
STE-07D270K	Z	N/A	17	22	27(24-31)	53					1.4	3.0	N/A		1800
STE-07D330K	Z	N/A	20	26	33(29.5-36.5)	65					1.7	3.5	N/A		1500
STE-07D390K	Z	N/A	25	31	39(35-43)	77					2.1	4.0	N/A		1300
STE-07D470K	Z	N/A	30	38	47(42-52)	93					2.5	5.0	N/A		1100
STE-07D560K	Z	N/A	35	45	56(50-62)	110					3.1	6.0	N/A		890
STE-07D680K	Z	N/A	40	56	68(61-75)	135					3.6	7.0	N/A		740
STE-07D820K	Z	N/A	50	65	82(74-90)	135	10	1200/600×2	1750/1200×2	N/A	5.5	10	N/A	0.25	600
STE-07D101K	Z	N/A	60	85	100(90-110)	165					6.5	12	N/A		500
STE-07D121K	Z	N/A	75	100	120(108-132)	200					7.8	13	N/A		420
STE-07D151K	Z	N/A	95	125	150(135-165)	250					9.7	15	N/A		330
STE-07D181K	Z	N/A	115	150	180(162-198)	300					11.7	16	N/A		280
STE-07D201K	Z	N/A	130	170	200(185-225)	340					13.0	17	N/A		250
STE-07D221K	Z	N/A	140	180	220(198-242)	360					14.0	19	N/A		230
STE-07D241K	Z	N/A	150	200	240(216-264)	395					15.0	21	N/A		210
STE-07D271K	Z	N/A	175	225	270(243-297)	455					18.0	24	N/A		185
STE-07D301K	Z	N/A	190	250	300(270-330)	500					20.0	26	N/A		165
STE-07D331K	Z	N/A	210	275	330(297-363)	550					23.0	28	N/A		150
STE-07D361K	Z	N/A	230	300	360(324-396)	595					24.0	32	N/A		140
STE-07D391K	Z	N/A	250	320	390(351-429)	650					26.0	35	N/A		130
STE-07D431K	Z	N/A	275	350	430(387-473)	710					28.0	40	N/A		115
STE-07D471K	Z	N/A	300	385	470(423-517)	775					29.0	42	N/A		105
STE-07D511K	Z	N/A	320	415	510(459-561)	845					31.0	45	N/A		100
STE-07D561K	Z	N/A	350	460	560(504-616)	925					35.0	49	N/A		90
STE-07D621K	Z	N/A	385	505	620(558-682)	1025					38.0	55	N/A		80
STE-07D681K	Z	N/A	420	560	680(612-748)	1120					42.0	60	N/A		75
STE-07D751K	Z	N/A	460	615	750(675-825)	1240					45.0	64	N/A		70
STE-07D781K	Z	N/A	485	640	780(702-858)	1290					48.0	69	N/A		65
STE-07D821K	Z	N/A	510	670	820(738-902)	1355					52.0	73	N/A		60
STE-07D911K	Z	N/A	550	745	910(819-1001)	1500					57.0	78	N/A		55

5.3. Features list (STE-10D Series) (list 3)

Part No.	marking code		Maximum allowable Voltage		Varistor voltage	Clamping voltage (Max.)		Maximum Peak Current (8/20μs)			Maximum Energy (10/1000μs) (J)			Rated Power	Typical Capacitance (Reference)
	high surge	6KV 3KA	AC rms (V)	DC rms (V)	$V_{1.0mA}$ (V)	VC (V)	IP (A)	Stand ard	high surge	6KV 3KA	Stand ard	high surge	6KV 3KA	(W)	1KHz (PF)
STE-10D180K	Z	N/A	11	14	18(15-21.6)	36	5	500/250×2	1000/500×2	N/A	2.1	3.0	N/A	0.05	5600
STE-10D220K	Z	N/A	14	18	22(19.5-26)	43					2.5	5.0	N/A		4500
STE-10D270K	Z	N/A	17	22	27(24-31)	53					3.0	6.0	N/A		3700
STE-10D330K	Z	N/A	20	26	33(29.5-36.5)	65					4.0	7.0	N/A		3000
STE-10D390K	Z	N/A	25	31	39(35-43)	77					4.6	9.0	N/A		2400
STE-10D470K	Z	N/A	30	38	47(42-52)	93					5.5	11	N/A		2100
STE-10D560K	Z	N/A	35	45	56(50-62)	110					7.0	13	N/A		1800
STE-10D680K	Z	N/A	40	56	68(61-75)	135					8.2	15	N/A		1500
STE-10D820K	Z	N/A	50	65	82(74-90)	135	25	2500/1250×2	3500/2500×2		12.0	17	N/A	0.40	1200
STE-10D101K	Z	N/A	60	85	100(90-110)	165					15.0	18	N/A		1000
STE-10D121K	Z	N/A	75	100	120(108-132)	200					18.0	21	N/A		830
STE-10D151K	Z	N/A	95	125	150(135-165)	250					22.0	25	N/A		670
STE-10D181K	Z	N/A	115	150	180(162-198)	300					27.0	30	N/A		560
STE-10D201K	Z	N/A	130	170	200(185-225)	340					30.0	35	N/A		500
STE-10D221K	Z	N/A	140	180	220(198-242)	360					32.0	39	N/A		450
STE-10D241K	Z	N/A	150	200	240(216-264)	395					35.0	42	N/A		420
STE-10D271K	Z	N/A	175	225	270(243-297)	455					37.0	49	N/A		370
STE-10D301K	Z	N/A	190	250	300(270-330)	500					40.0	54	N/A		330
STE-10D331K	Z	N/A	210	275	330(297-363)	550					43.0	58	N/A		300
STE-10D361K	Z	N/A	230	300	360(324-396)	595					47.0	65	N/A		280
STE-10D391K	Z	Q	250	320	390(351-429)	650				3500/2500×2	60.0	70	70		260
STE-10D431K	Z	Q	275	350	430(387-473)	710					65.0	80	80		230
STE-10D471K	Z	Q	300	385	470(423-517)	775					67.0	85	85		210
STE-10D511K	Z	Q	320	415	510(459-561)	845					69.0	90	90		200
STE-10D561K	Z	Q	350	460	560(504-616)	925					70.0	92	92		180
STE-10D621K	Z	Q	385	505	620(558-682)	1025					72.0	95	95		160
STE-10D681K	Z	Q	420	560	680(612-748)	1120					75.0	98	98		150
STE-10D751K	Z	Q	460	615	750(675-825)	1240					77.0	100	100		130
STE-10D781K	Z	N/A	485	640	780(702-858)	1290				N/A	80.0	105	N/A		125
STE-10D821K	Z	Q	510	670	820(738-902)	1355				3500/2500×2	85.0	110	110		120
STE-10D911K	Z	Q	550	745	910(819-1001)	1500					93.0	130	130		110
STE-10D102K	Z	Q	625	825	1000(900-1100)	1650					102.0	140	140		100
STE-10D112K	Z	Q	680	895	1100(990-1210)	1815					115.0	155	155		90

5.4. Features list (STE-14D Series) (list 4)

Part No.	marking code		Maximum allowable Voltage		Varistor voltage	Clamping voltage (Max.)		Maximum Peak Current (8/20μs)			Maximum Energy (10/1000μs) (J)			Rated Power	Typical Capacitance (Reference)
	high surge	6KV 3KA	AC rms (V)	DC rms (V)	$V_{1.0mA}$ (V)	VC (V)	IP (A)	Stand ard	high surge	6KV 3KA	Stand ard	high surge	6KV 3KA	(W)	1KHz (PF)
STE-14D180K	Z	N/A	11	14	18(15-21.6)	36	10	1000 / 500×2	2000 / 1000×2	N/A	4.0	7.0	N/A	0.1	11100
STE-14D220K	Z	N/A	14	18	22(19.5-26)	43					5.0	8.0	N/A		9100
STE-14D270K	Z	N/A	17	22	27(24-31)	53					6.0	10	N/A		7400
STE-14D330K	Z	N/A	20	26	33(29.5-36.5)	65					7.5	12	N/A		6100
STE-14D390K	Z	N/A	25	31	39(35-43)	77					8.6	13	N/A		5100
STE-14D470K	Z	N/A	30	38	47(42-52)	93					10.0	17	N/A		4300
STE-14D560K	Z	N/A	35	45	56(50-62)	110					11.0	20	N/A		3600
STE-14D680K	Z	N/A	40	56	68(61-75)	135					14.0	24	N/A		2900
STE-14D820K	Z	Q	50	65	82(74-90)	135	50	4500 / 2500×2	6000 / 4500×2	6000 / 4500×2	22.0	27	27	0.60	2400
STE-14D101K	Z	Q	60	85	100(90-110)	165					28.0	33	33		2000
STE-14D121K	Z	Q	75	100	120(108-132)	200					32.0	40	40		1700
STE-14D151K	Z	Q	95	125	150(135-165)	250					40.0	53	53		1300
STE-14D181K	Z	Q	115	150	180(162-198)	300					50.0	60	60		1100
STE-14D201K	Z	Q	130	170	200(185-225)	340					57.0	70	70		1000
STE-14D221K	Z	Q	140	180	220(198-242)	360					60.0	78	78		900
STE-14D241K	Z	Q	150	200	240(216-264)	395					63.0	84	84		830
STE-14D271K	Z	Q	175	225	270(243-297)	455					70.0	99	99		740
STE-14D301K	Z	Q	190	250	300(270-330)	500					77.0	108	108		670
STE-14D331K	Z	Q	210	275	330(297-363)	550					85.0	115	115		610
STE-14D361K	Z	Q	230	300	360(324-396)	595					93.0	130	130		560
STE-14D391K	Z	Q	250	320	390(351-429)	650					100	140	140		510
STE-14D431K	Z	Q	275	350	430(387-473)	710					115	155	155		460
STE-14D471K	Z	Q	300	385	470(423-517)	775					118	175	175		430
STE-14D511K	Z	Q	320	415	510(459-561)	845					121	180	180		390
STE-14D561K	Z	Q	350	460	560(504-616)	925					125	185	185		360
STE-14D621K	Z	Q	385	505	620(558-682)	1025					128	190	190		320
STE-14D681K	Z	Q	420	560	680(612-748)	1120					130	200	200		290
STE-14D751K	Z	Q	460	615	750(675-825)	1240					143	210	210		270
STE-14D781K	Z	Q	485	640	780(702-858)	1290					148	220	220		260
STE-14D821K	Z	Q	510	670	820(738-902)	1355					157	235	235		240
STE-14D911K	Z	Q	550	745	910(819-1001)	1500					175	255	255		220
STE-14D102K	Z	Q	625	825	1000(900-1100)	1650					190	280	280		200
STE-14D112K	Z	Q	680	895	1100(990-1210)	1815					213	310	310		180
STE-14D122K	Z	N/A	750	990	1200(1080-1320)	1980				N/A	232	324	N/A		160
STE-14D142K	Z	N/A	880	1140	1400(1260-1540)	2310					238	327	N/A		150
STE-14D152K	Z	N/A	930	1200	1500 (1350-1650)	2475					240	329	N/A		145
STE-14D162K	Z	N/A	1000	1280	1600(1440-1760)	2640					243	331	N/A		140
STE-14D182K	Z	Q	1100	1465	1800(1620-1980)	2970				5000	250	335	335		130

5.5. Features list (STE-20D Series) (list 5)

Part No.	marking code		Maximum allowable Voltage		Varistor voltage	Clamping voltage (Max.)		Maximum Peak Current (8/20μs)			Maximum Energy (10/1000μs) (J)			Rated Power	Typical Capacitance (Reference)
	high surge	6KV 3KA	AC rms (V)	DC rms (V)	$V_{1.0mA}$ (V)	VC (V)	IP (A)	Standard	high surge	6KV 3KA	Standard	high surge	6KV 3KA	(W)	1KHz (PF)
STE-20D180K	Z	N/A	11	14	18(15-21.6)	36	20	2000 / 1000×2	3000 / 2000×2	N/A	11	13	N/A	0.2	28500
STE-20D220K	Z	N/A	14	18	22(19.5-26)	43					14	16	N/A		18500
STE-20D270K	Z	N/A	17	22	27(24-31)	53					16	19	N/A		13000
STE-20D330K	Z	N/A	20	26	33(29.5-36.5)	65					23	24	N/A		11500
STE-20D390K	Z	N/A	25	31	39(35-43)	77					26	28	N/A		8500
STE-20D470K	Z	N/A	30	38	47(42-52)	93					30	34	N/A		7400
STE-20D560K	Z	N/A	35	45	56(50-62)	110					38	44	N/A		6500
STE-20D680K	Z	N/A	40	56	68(61-75)	135					41	49	N/A		5800
STE-20D820K	Z	Q	50	65	82(74-90)	135	100	6500 / 4500×2	10000 / 6500×2	10000 / 6500×2	45	56	56	1.00	4900
STE-20D101K	Z	Q	60	85	100(90-110)	165					50	70	70		4000
STE-20D121K	Z	Q	75	100	120(108-132)	200					55	85	85		3300
STE-20D151K	Z	Q	95	125	150(135-165)	250					70	106	106		2700
STE-20D181K	Z	Q	115	150	180(162-198)	300					85	130	130		2200
STE-20D201K	Z	Q	130	170	200(185-225)	340					95	140	140		2000
STE-20D221K	Z	Q	140	180	220(198-242)	360					100	155	155		1800
STE-20D241K	Z	Q	150	200	240(216-264)	395					108	168	168		1650
STE-20D271K	Z	Q	175	225	270(243-297)	455					127	190	190		1500
STE-20D301K	Z	Q	190	250	300(270-330)	500					136	210	210		1300
STE-20D331K	Z	Q	210	275	330(297-363)	550					150	228	228		1200
STE-20D361K	Z	Q	230	300	360(324-396)	595					163	255	255		1100
STE-20D391K	Z	Q	250	320	390(351-429)	650					180	275	275		1000
STE-20D431K	Z	Q	275	350	430(387-473)	710					190	305	305		930
STE-20D471K	Z	Q	300	385	470(423-517)	775					204	350	350		850
STE-20D511K	Z	Q	320	415	510(459-561)	845					210	360	360		780
STE-20D561K	Z	Q	350	460	560(504-616)	925					215	380	380		710
STE-20D621K	Z	Q	385	505	620(558-682)	1025					224	390	390		650
STE-20D681K	Z	Q	420	560	680(612-748)	1120					230	400	400		600
STE-20D751K	Z	Q	460	615	750(675-825)	1240					255	420	420		530
STE-20D781K	Z	Q	485	640	780(702-858)	1290					265	440	440		510
STE-20D821K	Z	Q	510	670	820(738-902)	1355					282	460	460		500
STE-20D911K	Z	Q	550	745	910(819-1001)	1500					310	510	510		440
STE-20D102K	Z	Q	625	825	1000(900-1100)	1650					342	565	565		400
STE-20D112K	Z	Q	680	895	1100(990-1210)	1815					383	620	620		360
STE-20D122K	Z	N/A	750	990	1200(1080-1320)	1980				N/A	408	660	N/A		350
STE-20D142K	Z	N/A	880	1140	1400(1260-1540)	2310					532	784	N/A		340
STE-20D152K	Z	N/A	930	1200	1500（1350-1650）	2475					569	840	N/A		335
STE-20D162K	Z	N/A	1000	1280	1600(1440-1760)	2640					606	896	N/A		330
STE-20D182K	Z	Q	1100	1465	1800(1620-1980)	2970				ND	625	990	990		320

6. In conventional performance test methods and requirements

(note: 6.1 ~ 6.5 for routine testing project)

NO.	Inspection items	Test conditions	Performance requirements
6.1.	Appearance	Visual	No marked defect
6.2.	Logo	Visual	Clearly marked
6.3.	Dimension	1/20mm gauges should be used.	Accord with 2. requirements
6.4.	Varistor voltage	Add 1 mA current, voltage on both ends of the test	≤±10%
6.5.	Drain current	In standard test conditions, exert maximum allowable Dc voltage, the current flows through pressure sensitive resistors.	When in + 25 ℃: ≤20μA ($V_{1.0mA}$ Of 80%)
6.6.	Maximum continuous ac voltage	It can be continuous working while exerted on the compoents during 25℃,basically it is the effective value of the maximum voltage of sinusoidal wave (less than 5% of the RMS maximum voltage).	Comply with the requirements of the series features list
	Maximum continuous dc voltage	It can be exerted the maximum DC voltage on the continuous working components during 25 ℃(less than 5%).	
6.7.	Maximum energy	ı certain pulse current (10/1000μs waveform)adding in pressure-sensitive resistors, pressure sensitive voltage rate was less than 10% of the biggest energy	Comply with the requirements of the series features list
6.8	Maximum peak current	For the pulse frequency durning 25 ℃ , pressure sensitive resistors is allowed for the largest current pulse of the each regulation .	Comply with the requirements of the series features list
6.9.	Rated power	Working 1,000 hours In specific environment temperature + 85 ℃ makes pressure sensitive voltage change less than 10% of maximum power	Comply with the requirements of the series features list

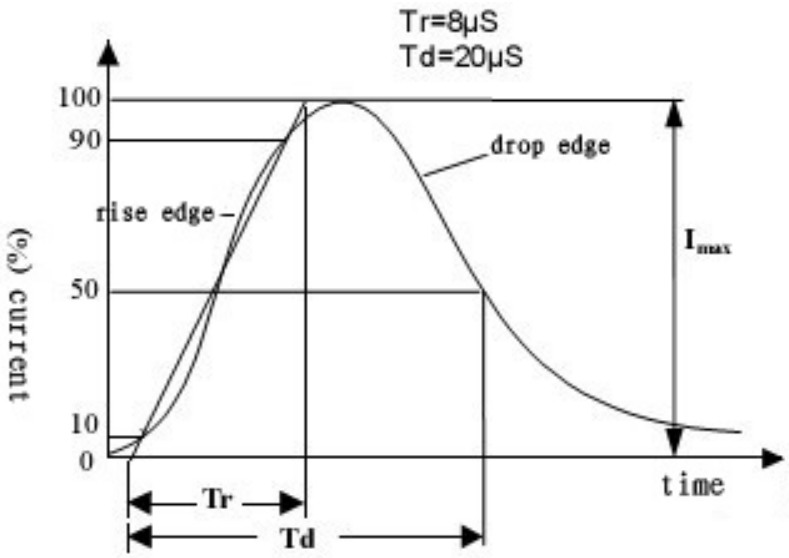
NO.	Inspection items	Test conditions	Performance requirements
6.10.	Maximum current impulse	In certain pulse current (8/20μs waveform) referenced sensitive resistors (once every time 5 minutes), makes the pressure sensitive voltage change still in the biggest impact within plus or minus 10% current	Comply with the requirements of the series features list
6.11.	Electrostatic capacity	f=1KHz; Test level≤1Vrms。	Reference list of characteristics request. Series

7. Reliability testing methods and requirements

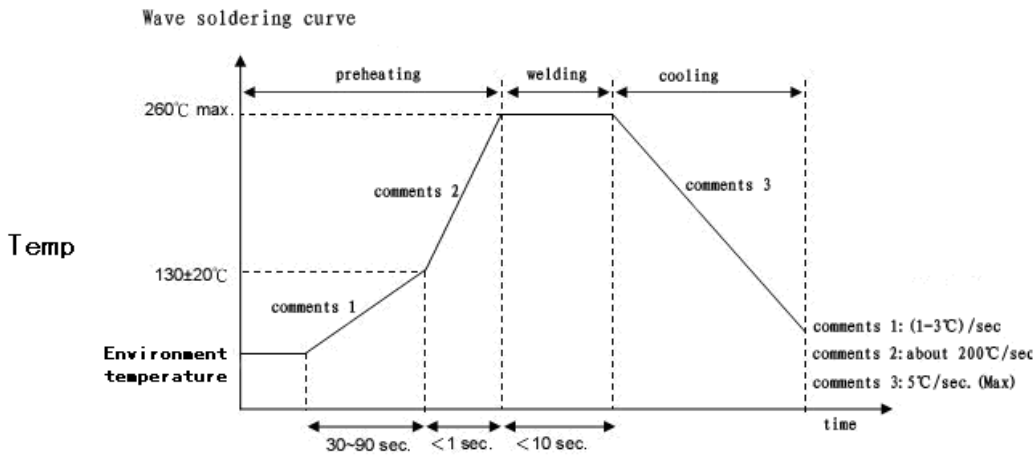
NO.	Item	Standard	Test conditions/Methods	Specifications
1	Tensile strength of terminals	IEC60068-2-21	Gradually applying the force specified and keeping the unit fixed for 10±1sec。 Terminal diameter（mm） / Force(Kg) 0.5＜d≤0.8 / 1.0 0.8＜d≤1.25 / 2.0 1.25＜d / 4.0	No visible damage $\lvert \Delta V/V_{1mA} \rvert \leq 5\%$
2	Bending strength of terminals	IEC60068-2-21	Hold specimen and apply the force specified below to each lead.Bend the specimen to 90º,then retum to the original position.Repeat the procedure in the opposite direction. 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 $\lvert \Delta V/V_{1mA} \rvert \leq 5\%$
3	Vibration	IEC1051-1	Frequency range: 10～55H_Z Amplitude: 0.75mm or 98m/s^2 Direction:6hrs（3×2hrs）	No visible damage $\lvert \Delta V/V_{1mA} \rvert \leq 5\%$
4	Solderability	IEC60068-2-20	245±3℃，3±0.3sec.	At tin area≥95%
5	Resistance to soldering heat	IEC60068-2-20	260±3℃，10±1sec.	No visible damage $\lvert \Delta V/V_{1mA} \rvert \leq 5\%$

NO.	Item	Standard	Test conditions/Methods	Specifications
6	High temperature storage	IEC60068-2-2	125±5℃，1000±24 hrs	No visible damage $\lvert \Delta V/V_{1mA} \rvert \leq 5\%$
7	Damp heat,steady state	IEC60068-2-3	The test is divided into two groups: a.40±2℃，90～95%RH，1344 hrs。 b.40±2℃，90～95%RH，at 10%V_{DC}，1344 hrs。	No visible damage $\lvert \Delta V/V_{1mA} \rvert \leq 10\%$ I.R≥100MΩ。
8	Rapid change of temperature	IEC60068-2-14	The conditions shown below shall be repeated 5 cycles Step / Temperature(℃) / Period(minutes) 1 / -40±3 / 30±3 2 / Room temperature / 5±3 3 / 85±2 / 30±3 4 / Room temperature / 5±3	No visible damage $\lvert \Delta V/V_{1mA} \rvert \leq 5\%$
9	Endurance at upper category temperature	IEC61051-4.20	85±2℃，1000±24 hrs，at V_{DC} or V_{rms} (Max.Operating Voltage)	No visible damage $\lvert \Delta V/V_{1mA} \rvert \leq 10\%$
10	Low temperature storage (Optional)	CECC42000	-40±5℃，1000±24 hrs。	No visible damage $\lvert \Delta V/V_{1mA} \rvert \leq 5\%$
11	8/20μs surge life	CECC42000	10000 pulses(8/20μs),unipolar,interval 10 secs,amplitude corr,to max,surge current derating curves for 20μs	No visible damage $\lvert \Delta V/V_{1mA} \rvert \leq 10\%$
12	Varistor voltage temp coefficient	Specification Standard	$\frac{V_{1mA}\text{ at }85℃ - V_{1mA}\text{ at }25℃}{V_{1mA}\text{ at }25℃} \times \frac{1}{60} \times 100\ (\%/℃)$ $\frac{V_{1mA}\text{ at }-40℃ - V_{1mA}\text{ at }25℃}{V_{1mA}\text{ at }25℃} \times \frac{1}{65} \times 100\ (\%/℃)$	-0.05≤Tc≤+0.05 (%/℃)
13	Voltage proof	IEC61051-4.8	Metal balls method, 2500Vac，1min.	No visible damage
14	Fire retardancy test test	Specification Standard	Burning outside of alcohol of body size Fire for 5 sec .	Not more than 30 sec

8. 8/20μs Standard waveforms figure



9. Welding condition



Soldering iron soldering welding conditions

Item	Conditions
Temperature of Soldering iron-tip	360℃（Max.）
Soldering time	3 sec（Max.）
Distance from Varistor	2 ㎜（Min.）

10. Storage conditions

10.1. Storage temperature：-10℃～+40℃。

10.2. Relative Humidity：≤75% RH。

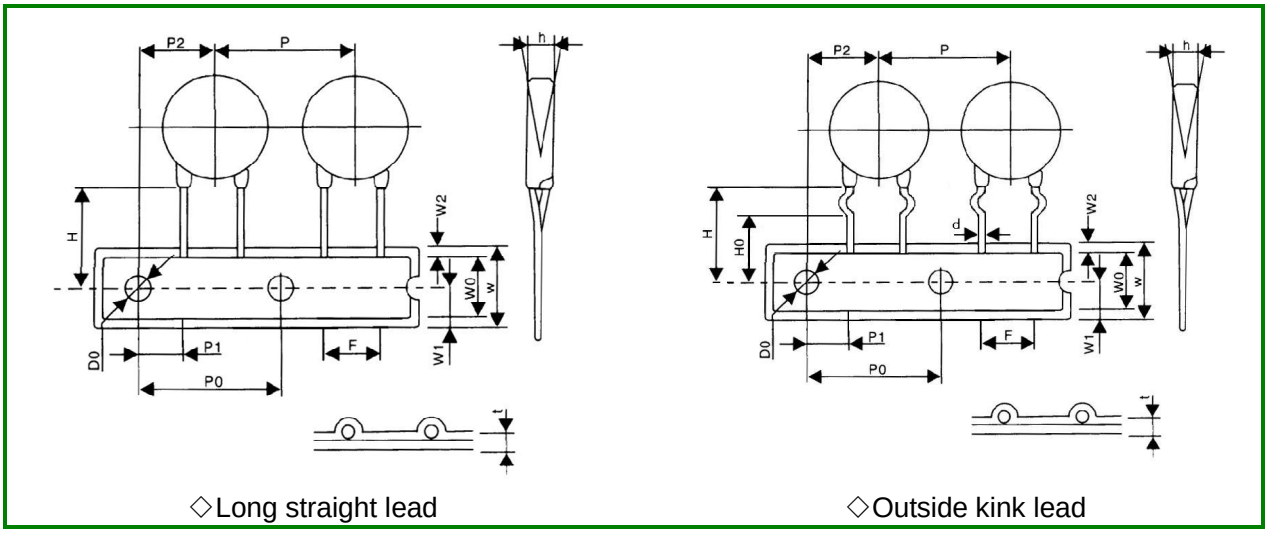
10.3. Keep away form corrosive atmosphere and sunlight。

10.4. Period of storage：1 year。

11.Packing

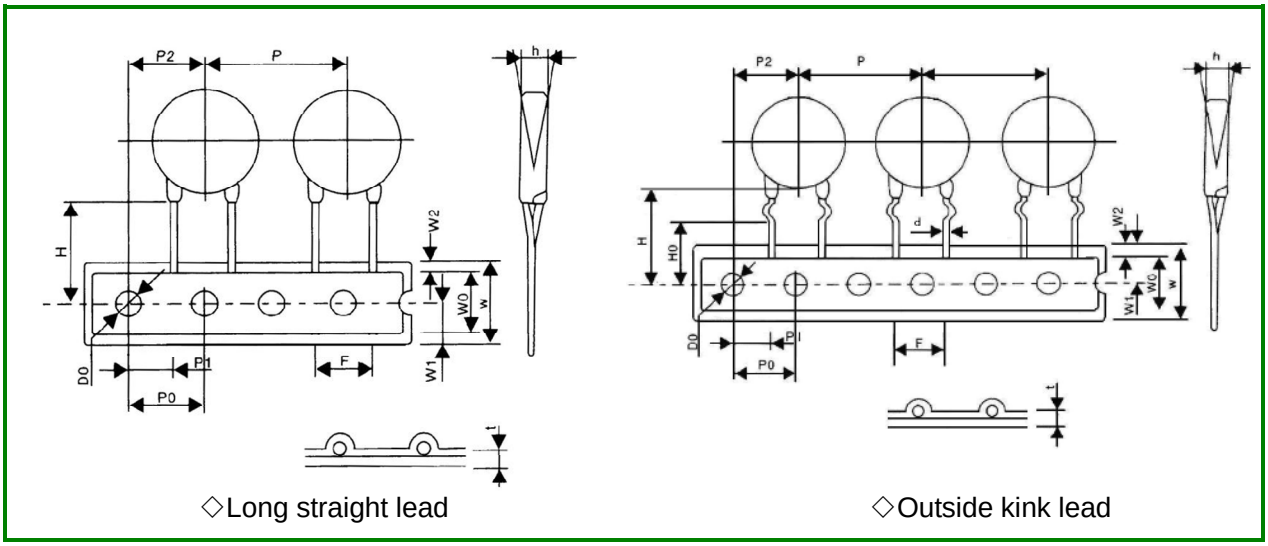
11.1 Taped style

◆ 05D、07D Series



◇Long straight lead　　◇Outside kink lead

◆ 10D、14D Series



◇Long straight lead　　◇Outside kink lead

◆ Taping specification

Name	Symbol	Taping specification（mm）			
		05D Series	07D Series	10D Series	14D Series
Pitch of Component	P	12.7±1.0	12.7±1.0	25.4±1.0	25.4±1.0
Feed hole pitch	Po	12.7±0.3	12.7±0.3	12.7±1.0	12.7±1.0
Feed hole center to lead	P1	3.85±0.7	3.85±0.7	8.95±1.5	8.95±1.5
Hole center to component center	P2	6.35±1.3	6.35±1.3	12.7±1.5	12.7±1.5
Lead to lead distance	F	5.0±0.8	5.0±0.8	7.5±0.8	7.5±0.8
Lead diameter	Φd	0.5±0.05	0.5±0.05	0.70±0.05	0.70±0.05
Tape width	W	18.0 +1.5/-1.0	18.0 +1.5/-1.0	18.0(+1.0,-0.5)	18.0(+1.0,-0.5)
Hold down tape width	Wo	10.0 ±0.2	10.0 ±0.2	10.0 ±0.2	10.0 ±0.2
Hold position	W1	9.0 +0.75/-0.5	9.0 +0.75/-0.5	9.0±0.75	9.0±0.75
Hold down tape position	W2	3.0 Max	3.0 Max	3.0 Max	3.0 Max
Height from tape center to component	H	20.0(+1.5,-1.0)	20.0(+1.5,-1.0)	20.0(+1.5,-1.0)	20.0(+1.5,-1.0)
Height from tape center to component	Ho	16.0±1.0	16.0±1.0	16.0±1.0	16.0±1.0
Total tape thickness	t	0.60±0.2	0.60±0.2	0.60±0.2	0.60±0.2
Component alignment	Δh	0±2.0	0±2.0	0±2.0	0±4.0
Feed hole diameter	ΦDo	4.0±0.2	4.0±0.2	4.0±0.2	4.0±0.2

11.2 Packing quantity

Dimension/mm	Number（PCS/bag）
STE-05D、07D	1000
STE-10D	500
STE-14D、20D	250

12. Safety Approvals

No.	Approved monogram	Related state		Certificate No
1	CQC	CQC	GB/T10193 GB/T10194 GB8898-2011 GB4943.1-2011	5D:CQC07001020534
				7D:CQC07001020533
				10D:CQC07001020532
				14D:CQC07001020531
				20D:CQC07001020530
2	c UL us	UL	UL1449	E330837
3	VDE REG.Nr.C559	VDE	IEC61051 IEC60950-1:2005	40023049

13. Environmental management control material

No.	Harmful material	Testing item	Limited level
1	Heavy metal	Cadmium (Cd)/Cadmium Compounds	≤100ppm
		Lead (Pb)/Lead Compounds	≤1000ppm
		Mercury (Hg)/Mercury Compounds	≤1000ppm
		Hexavalent-Chromiun (Cr^{6+}) Compounds	≤1000ppm
2	Organic bromides	PBBs	≤1000ppm
		PBDEs	≤1000ppm

14. Test Report

（RoHS Test report）

【Note: the above dimensions are for reference only, recognized subject to the actual send samples.】