

Catalog

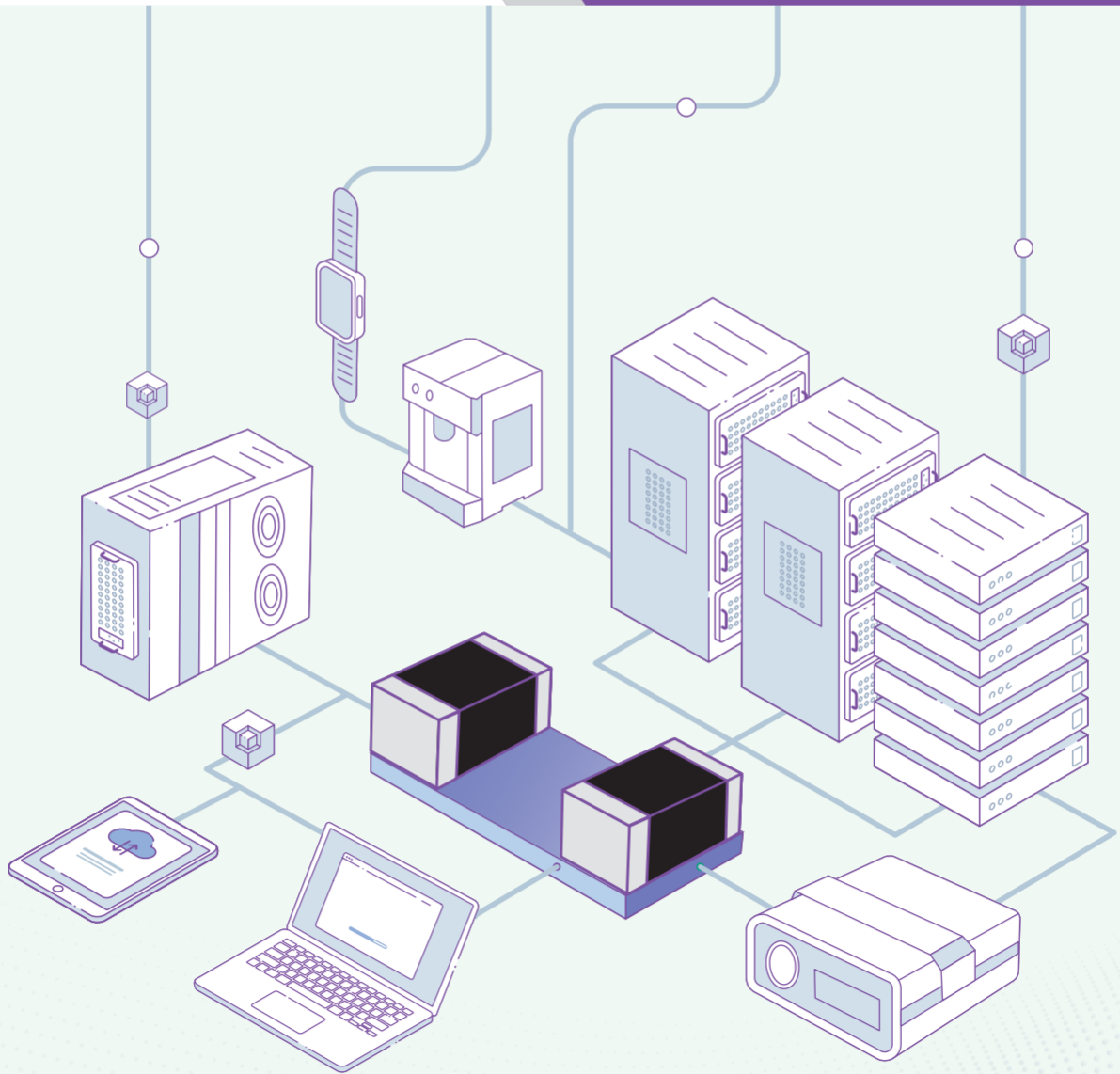
Sunlord
expert in e components

SENSITIVE COMPONENTS

Catalog

2023-2024

Shenzhen Sunlord Electronics Co., Ltd.
www.sunlordinc.com



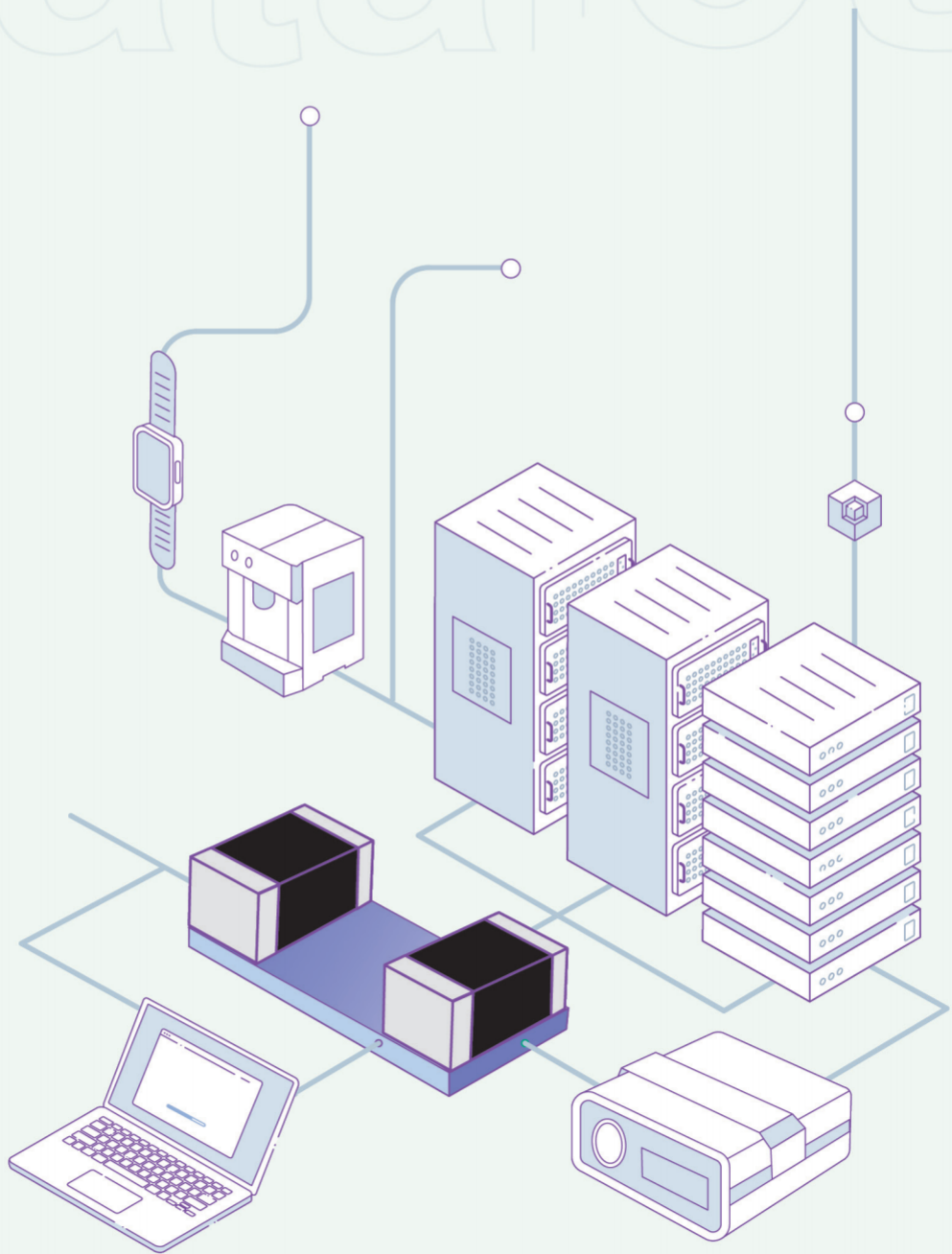


SENSITIVE COMPONENTS

Catalog

2023-2024

Shenzhen Sunlord Electronics Co., Ltd.
www.sunlordinc.com



Revision

2023/8/29

Notice for Sunlord Products

Product data in this Catalog are as of June 2023. They are subject to change without advance notice. Please check with our sales representatives or product engineers before ordering.

All information and data presented in this Catalog are for information only. Please contact us for detail product specification. You are requested to approve our product specification before your ordering.

This catalog contains the typical product due to the limitation of space. Please contact our sales representatives or product engineer when you didn't find the suitable product in this catalogue.





Updated information on our products is also available through the internet home page at the following address:
[Http:// www.sunlordinc.com](http://www.sunlordinc.com)

CONTENTS


□	Property Range Table	4
□	Circuit Protection Components	5
■	Chip Varistor For ESD SDV Series	6
■	Chip Varistor for Surge Suppression SDVL-HS Series	13
	SVMH Series	18
□	Thermistors	21
■	Chip Temp. Sensing NTC Thermistor SDNT Series	22
□	Packaging	26
□	Recommended PCB Design for SMT Land Patterns	29


PROPERTY RANGE TABLE

CHIP VARISTOR FOR ESD


Series	Shape	Dimensions	DC Working Voltage Range (V)				Capacitance (pF)	Page
			1.0	10	100			
SDV-A		1608[0603]-2012[0805]		5.5	30		120-2000	7
SDV-E		1005[0402]-2012[0805]		5.5	30		15-100	8
SDV-H		1005[0402]-1608[0603]			14	48	0.5-12	9
SDV-S		1005[0402]-1608[0603]		5.5	42		0.5-12	10

CHIP VARISTOR FOR SURGE SUPPRESSION

Series	Shape	Dimensions	Working Voltage Range (V)				Peak Current 8/20us (A)	Page
			1.0	10	100	1000		
SDVL-HS		1608[0603]-5650[2220]	V _{bc}	9	150		20-8000	13

Series	Shape	Dimensions	Working Voltage Range (V)				Peak Current 8/20us (A)	Page
			1.0	10	100	1000		
SVMH		2016[0806]-5650[2220]	V _{bc}		150	350	50-2000	18

CHIP TEMP. SENSING NTC THERMISTOR

Series	Shape	Dimensions	R25 (kΩ)				B Constant (K)	Page
			1.0	10	100	1000		
SDNT		0402[01005]-2012[0805]		2.2	220		3380-4300	22

Circuit Protection Components

Chip Varistor for ESD – SDV Series



Operating temp. : -55°C ~+125°C

FEATURES

- ◆ SMD type suitable for high density mounting
- ◆ Excellent solderability (Ni, Sn plating)
- ◆ Excellent clamping ratio and quick response time (<0.5ns)

APPLICATIONS

- ◆ Transient voltage protection for IC and transistor
- ◆ MOSFET protection
- ◆ ESD protection such as USB2.0, MIPI etc.
- ◆ Portable equipment protection, such as mobile phone, TV, etc.

PRODUCT IDENTIFICATION

1	2	3	4	5	6	7	8	9
SDV	1608	A	180	C121	N	P	T	F

1 Type	
SDV	Chip Varistor for ESD

2 External Dimensions (L×W) (mm)	
1005 [0402]	1.0×0.5
1608 [0603]	1.6×0.8
2012 [0805]	2.0×1.25

3 Feature Code	
A	For General Use
E	For ESD
H	For High Speed
S	For Special Request

4 Maximum Continuous Working Voltage	
Example	Nominal Value
5R5	5.5V
180	18V

5 Capacitance @1MHz	
Example	Nominal Value
C121	120pF

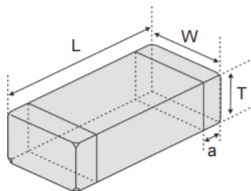
6 Tolerance of Capacitance	
N	±30%
Y	+100%~-50%
G	Maximum

7 Terminal Code	
P	Ni, Sn Plating

8 Packing	
T	Tape & Reel

9 Hazardous SubstanceFree Products	
F	

SHAPE AND DIMENSIONS



Unit: mm [inch]

Type	L	W	T	a
SDV1005 [0402]	1.0±0.15 [0.39±0.06]	0.5±0.15 [0.20±0.06]	0.5±0.15 [0.20±0.06]	0.25±0.1 [0.10±0.04]
SDV1608 [0603]	1.6±0.15 [0.63±0.06]	0.8±0.15 [0.31±0.06]	0.8±0.15 [0.31±0.06]	0.3±0.2 [0.12±0.08]
SDV2012 [0805]	2.0±0.2 [0.79±0.08]	1.25±0.2 [0.49±0.08]	0.85±0.2 [0.33±0.08]	0.5±0.3 [0.20±0.12]

SPECIFICATIONS SDV1608A TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
	<20 μ A			8/20 μ s	ESD	Energy 10/1000 μ s	Peak Current 8/20 μ s	
Test Condition	DC	AC RMS	@1mA DC					
Units	Volts	Volts	Volts	Volts	Volts	Joules	Amps	pF
Symbol	V _{WDC}	V _{WRAC}	V _B	V _C ⁻¹	V _C ⁻²	E _T	I _P	C
SDV1608A090C121 □ PTF	9.0	6.4	11.0-16.0	20	26	0.05	20	120
SDV1608A090C141 □ PTF	9.0	6.4	11.0-16.0	20	26	0.05	20	140
SDV1608A090C201 □ PTF	9.0	6.4	11.0-16.0	20	26	0.1	30	200
SDV1608A090C231 □ PTF	9.0	6.4	11.0-16.0	20	26	0.1	30	230
SDV1608A090C361 □ PTF	9.0	6.4	11.0-16.0	20	26	0.1	30	360
SDV1608A140C121 □ PTF	14.0	10.0	16.0-22.0	30	39	0.05	20	120
SDV1608A140C141 □ PTF	14.0	10.0	16.0-22.0	30	39	0.05	20	140
SDV1608A140C251 □ PTF	14.0	10.0	16.0-22.0	30	39	0.1	30	250
SDV1608A140C361 □ PTF	14.0	10.0	16.0-22.0	30	39	0.1	30	360
SDV1608A180C121 □ PTF	18.0	12.7	22.0-28.0	40	48	0.05	20	120
SDV1608A180C141 □ PTF	18.0	12.7	22.0-28.0	40	48	0.05	20	140
SDV1608A180C231 □ PTF	18.0	12.7	22.0-28.0	40	48	0.1	30	230
SDV1608A180C361 □ PTF	18.0	12.7	22.0-28.0	40	48	0.1	30	360
SDV1608A220C121 □ PTF	22.0	15.6	26.0-34.0	45	54	0.05	20	120
SDV1608A220C141 □ PTF	22.0	15.6	26.0-34.0	45	54	0.05	20	140
SDV1608A220C161 □ PTF	22.0	15.6	26.0-34.0	45	54	0.1	30	160
SDV1608A220C231 □ PTF	22.0	15.6	26.0-34.0	45	54	0.1	30	230
SDV1608A260C121 □ PTF	26.0	18.4	31.0-38.0	58	70	0.1	30	120
SDV1608A260C161 □ PTF	26.0	18.4	31.0-38.0	58	70	0.1	30	160
SDV1608A300C121 □ PTF	30.0	21.3	37.0-46.0	65	78	0.1	30	120
SDV1608A300C141 □ PTF	30.0	21.3	37.0-46.0	65	78	0.1	30	140

SDV2012A TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
	<20 μ A			8/20 μ s	Energy 10/1000 μ s	Peak Current 8/20 μ s		
Test Condition	DC	AC RMS	@1mA DC					
Units	Volts	Volts	Volts	Volts	Joules	Amps	pF	
Symbol	V _{WDC}	V _{WRAC}	V _B	V _C ⁻¹	E _T	I _P	C	
SDV2012A090C701 □ PTF	9.0	6.4	11.0-16.0	20	0.2	60	700	
SDV2012A090C102 □ PTF	9.0	6.4	11.0-16.0	20	0.3	120	1000	
SDV2012A140C401 □ PTF	14.0	10.0	16.0-22.0	30	0.2	60	400	
SDV2012A140C701 □ PTF	14.0	10.0	16.0-22.0	30	0.3	120	700	
SDV2012A140C901 □ PTF	14.0	10.0	16.0-22.0	30	0.4	150	900	
SDV2012A180C301 □ PTF	18.0	12.7	22.0-28.0	40	0.2	60	300	
SDV2012A180C501 □ PTF	18.0	12.7	22.0-28.0	40	0.3	120	500	
SDV2012A180C701 □ PTF	18.0	12.7	22.0-28.0	40	0.4	150	700	
SDV2012A220C251 □ PTF	22.0	15.6	26.0-34.0	45	0.2	60	250	
SDV2012A220C401 □ PTF	22.0	15.6	26.0-34.0	45	0.3	120	400	
SDV2012A220C501 □ PTF	22.0	15.6	26.0-34.0	45	0.3	120	500	
SDV2012A260C251 □ PTF	26.0	18.4	31.0-38.0	58	0.2	60	250	
SDV2012A260C401 □ PTF	26.0	18.4	31.0-38.0	58	0.3	120	400	
SDV2012A300C181 □ PTF	30.0	21.3	37.0-46.0	65	0.2	60	180	
SDV2012A300C301 □ PTF	30.0	21.3	37.0-46.0	65	0.3	120	300	

SPECIFICATIONS SDV1005E TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
	<20μA			@1mA DC	8/20μs	ESD	Energy 10/1000μs	
Test Condition	DC	AC RMS	Volts					Volts
Units	Volts	Volts	Volts	Volts	Volts	Joules	Amps	pF
Symbol	V _{WDC}	V _{WRMS}	V _B	V _C ⁻¹	V _C ⁻²	E _T	I _P	C
SDV1005E090C180 □ PTF	9.0	6.4	11.0-16.0	20	26	0.005	3	18
SDV1005E090C300 □ PTF	9.0	6.4	11.0-16.0	20	26	0.005	5	30
SDV1005E090C500 □ PTF	9.0	6.4	11.0-16.0	20	26	0.01	10	50
SDV1005E090C800 □ PTF	9.0	6.4	11.0-16.0	20	26	0.02	15	80
SDV1005E140C180 □ PTF	14.0	10.0	16.0-22.0	30	39	0.005	3	18
SDV1005E140C300 □ PTF	14.0	10.0	16.0-22.0	30	39	0.01	5	30
SDV1005E140C500 □ PTF	14.0	10.0	16.0-22.0	30	39	0.02	10	50
SDV1005E140C800 □ PTF	14.0	10.0	16.0-22.0	30	39	0.03	15	80
SDV1005E180C150 □ PTF	18.0	12.7	22.0-28.0	40	48	0.005	2	15
SDV1005E180C180 □ PTF	18.0	12.7	22.0-28.0	40	48	0.01	5	18
SDV1005E180C300 □ PTF	18.0	12.7	22.0-28.0	40	48	0.02	10	30
SDV1005E180C500 □ PTF	18.0	12.7	22.0-28.0	40	48	0.02	10	50
SDV1005E220C150 □ PTF	22.0	15.6	26.0-34.0	45	54	0.005	2	15
SDV1005E220C180 □ PTF	22.0	15.6	26.0-34.0	45	54	0.01	5	18
SDV1005E220C300 □ PTF	22.0	15.6	26.0-34.0	45	54	0.02	10	30
SDV1005E220C500 □ PTF	22.0	15.6	26.0-34.0	45	54	0.02	10	50

SDV1608E TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
	<20μA			@1mA DC	8/20μs	ESD	Energy 10/1000μs	
Test Condition	DC	AC RMS	Volts					Volts
Units	Volts	Volts	Volts	Volts	Volts	Joules	Amps	pF
Symbol	V _{WDC}	V _{WRMS}	V _B	V _C ⁻¹	V _C ⁻²	E _T	I _P	C
SDV1608E090C180 □ PTF	9.0	6.4	11.0-16.0	20	26	0.005	3	18
SDV1608E090C300 □ PTF	9.0	6.4	11.0-16.0	20	26	0.005	5	30
SDV1608E090C500 □ PTF	9.0	6.4	11.0-16.0	20	26	0.01	10	50
SDV1608E090C800 □ PTF	9.0	6.4	11.0-16.0	20	26	0.02	15	80
SDV1608E090C101 □ PTF	9.0	6.4	11.0-16.0	20	26	0.05	20	100
SDV1608E140C180 □ PTF	14.0	10.0	16.0-22.0	30	39	0.005	3	18
SDV1608E140C300 □ PTF	14.0	10.0	16.0-22.0	30	39	0.01	5	30
SDV1608E140C500 □ PTF	14.0	10.0	16.0-22.0	30	39	0.02	10	50
SDV1608E140C800 □ PTF	14.0	10.0	16.0-22.0	30	39	0.03	15	80
SDV1608E140C101 □ PTF	14.0	10.0	16.0-22.0	30	39	0.05	20	100
SDV1608E180C180 □ PTF	18.0	12.7	22.0-28.0	40	48	0.005	5	18
SDV1608E180C300 □ PTF	18.0	12.7	22.0-28.0	40	48	0.02	10	30
SDV1608E180C600 □ PTF	18.0	12.7	22.0-28.0	40	48	0.02	10	60
SDV1608E180C800 □ PTF	18.0	12.7	22.0-28.0	40	48	0.03	15	80
SDV1608E180C101 □ PTF	18.0	12.7	22.0-28.0	40	48	0.05	20	100
SDV1608E220C180 □ PTF	22.0	15.6	26.0-34.0	45	54	0.005	5	18
SDV1608E220C300 □ PTF	22.0	15.6	26.0-34.0	45	54	0.02	10	30
SDV1608E220C500 □ PTF	22.0	15.6	26.0-34.0	45	54	0.02	10	50
SDV1608E220C800 □ PTF	22.0	15.6	26.0-34.0	45	54	0.03	15	80
SDV1608E220C101 □ PTF	22.0	15.6	26.0-34.0	45	54	0.05	20	100
SDV1608E260C180 □ PTF	26.0	18.4	31.0-38.0	58	70	0.02	5	18
SDV1608E260C300 □ PTF	26.0	18.4	31.0-38.0	58	70	0.03	10	30
SDV1608E260C500 □ PTF	26.0	18.4	31.0-38.0	58	70	0.03	10	50

SPECIFICATIONS SDV2012E TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
	DC	AC RMS		8/20 μ s	ESD	Energy 10/1000 μ s	Peak Current 8/20 μ s	
Test Condition	<20 μ A		@1mA DC	8/20 μ s	ESD	Energy 10/1000 μ s	Peak Current 8/20 μ s	@0.5Vrms, 1MHz
Units	Volts	Volts	Volts	Volts	Volts	Joules	Amps	pF
Symbol	V _{WDC}	V _{WRAC}	V _B	V _C ⁻¹	V _C ⁻²	E _T	I _P	C
SDV2012E180C101 □ PTF	18.0	12.7	22.0-28.0	40	48	0.05	20	100
SDV2012E260C800 □ PTF	26.0	18.4	31.0-38.0	58	70	0.05	20	80
SDV2012E220C101 □ PTF	22.0	15.6	26.0-34.0	45	54	0.05	20	100
SDV2012E300C500 □ PTF	30.0	21.3	37.0-46.0	65	78	0.05	15	50

SDV1005H TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
	DC	AC RMS		8/20 μ s	ESD	Energy 10/1000 μ s	Peak Current 8/20 μ s	
Test Condition	<20 μ A		@1mA DC	8/20 μ s	ESD	Energy 10/1000 μ s	Peak Current 8/20 μ s	@0.5Vrms, 1MHz
Units	Volts	Volts	Volts	Volts	Volts	Joules	Amps	pF
Symbol	V _{WDC}	V _{WRAC}	V _B	V _C ⁻¹	V _C ⁻²	E _T	I _P	C
SDV1005H140C100 □ PTF	14.0	10.0	16.0-22.0	30	39	0.005	2	10
SDV1005H140C120 □ PTF	14.0	10.0	16.0-22.0	30	39	0.005	2	12
SDV1005H180C050YPTF	18.0	12.7	22.0-28.0	40	48	0.005	2	5
SDV1005H180C100 □ PTF	18.0	12.7	22.0-28.0	40	48	0.005	2	10
SDV1005H220C030YPTF	22.0	15.6	26.0-34.0	45	54	0.003	1	3
SDV1005H220C050YPTF	22.0	15.6	26.0-34.0	45	54	0.005	2	5
SDV1005H220C100 □ PTF	22.0	15.6	26.0-34.0	45	54	0.005	2	10
SDV1005H220C120 □ PTF	22.0	15.6	26.0-34.0	45	54	0.005	2	12
SDV1005H260C030YPTF	26.0	18.4	31.0-38.0	58	70	0.003	1	3
SDV1005H260C100 □ PTF	26.0	18.4	31.0-38.0	58	70	0.005	2	10
SDV1005H260C120 □ PTF	26.0	18.4	31.0-38.0	58	70	0.005	2	12

SDV1608H TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
	DC	AC RMS		8/20 μ s	ESD	Energy 10/1000 μ s	Peak Current 8/20 μ s	
Test Condition	<20 μ A		@1mA DC	8/20 μ s	ESD	Energy 10/1000 μ s	Peak Current 8/20 μ s	@0.5Vrms, 1MHz
Units	Volts	Volts	Volts	Volts	Volts	Joules	Amps	pF
Symbol	V _{WDC}	V _{WRAC}	V _B	V _C ⁻¹	V _C ⁻²	E _T	I _P	C
SDV1608H140C100 □ PTF	14.0	10.0	16.0-22.0	30	39	0.005	2	10
SDV1608H140C120 □ PTF	14.0	10.0	16.0-22.0	30	39	0.005	2	12
SDV1608H180C050YPTF	18.0	12.7	22.0-28.0	40	48	0.003	1	5
SDV1608H180C100 □ PTF	18.0	12.7	22.0-28.0	40	48	0.005	2	10
SDV1608H180C120 □ PTF	18.0	12.7	22.0-28.0	40	48	0.005	2	12
SDV1608H220C030YPTF	22.0	15.6	26.0-34.0	45	54	0.003	1	3
SDV1608H220C050YPTF	22.0	15.6	26.0-34.0	45	54	0.003	1	5
SDV1608H220C100 □ PTF	22.0	15.6	26.0-34.0	45	54	0.005	2	10
SDV1608H220C120 □ PTF	22.0	15.6	26.0-34.0	45	54	0.005	2	12
SDV1608H260C030YPTF	26.0	18.4	31.0-38.0	58	70	0.003	1	3
SDV1608H260C100 □ PTF	26.0	18.4	31.0-38.0	58	70	0.005	2	10
SDV1608H260C120 □ PTF	26.0	18.4	31.0-38.0	58	70	0.005	2	12
SDV1608H300C100 □ PTF	30.0	21.3	37.0-46.0	65	78	0.005	2	10
SDV1608H480C100 □ PTF	48.0	34.1	54.0-67.0	100	120	0.005	5	10

SPECIFICATIONS SDV1005S TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
	DC	AC RMS		8/20µs	ESD	Energy 10/1000µs	Peak Current 8/20µs	
Test Condition	<20µA		@1mA DC	8/20µs	ESD	Energy 10/1000µs	Peak Current 8/20µs	@0.5Vrms, 1MHz
Units	Volts	Volts	Volts	Volts	Volts	Joules	Amps	pF
Symbol	V _{wDC}	V _{wAC}	V _B	V _C ^{*1}	V _C ^{*2}	E _T	I _P	C
SDV1005S5R5C030YPTF	5.5	4.0	31.0-38.0	58	70	0.003	1	3
SDV1005S5R5C050YPTF	5.5	4.0	22.0-28.0	40	48	0.003	1	5
SDV1005S5R5C100 □ PTF	5.5	4.0	22.0-28.0	40	48	0.005	2	10
SDV1005S5R5C120 □ PTF	5.5	4.0	22.0-28.0	40	48	0.005	2	12
SDV1005S090C030YPTF	9.0	6.4	31.0-38.0	58	70	0.003	1	3
SDV1005S090C050YPTF	9.0	6.4	22.0-28.0	40	48	0.003	1	5
SDV1005S090C100 □ PTF	9.0	6.4	22.0-28.0	40	48	0.005	2	10
SDV1005S090C120 □ PTF	9.0	6.4	22.0-28.0	40	48	0.005	2	12
SDV1005S140C030YPTF	14.0	10.0	31.0-38.0	58	70	0.003	1	3
SDV1005S140C050YPTF	14.0	10.0	22.0-28.0	40	48	0.003	1	5
SDV1005S180C030YPTF	18.0	12.7	31.0-38.0	58	70	0.003	1	3
SDV1005S360C050YPTF	36.0	25.4	46.0-60.0	130	155	0.003	1	5
SDV1005S420C050YPTF	42.0	29.7	51.0-81.0	135	160	0.005	2	5

SDV1608S TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
	DC	AC RMS		8/20µs	ESD	Energy 10/1000µs	Peak Current 8/20µs	
Test Condition	<20µA		@1mA DC	8/20µs	ESD	Energy 10/1000µs	Peak Current 8/20µs	@0.5Vrms, 1MHz
Units	Volts	Volts	Volts	Volts	Volts	Joules	Amps	pF
Symbol	V _{wDC}	V _{wAC}	V _B	V _C ^{*1}	V _C ^{*2}	E _T	I _P	C
SDV1608S5R5C030YPTF	5.5	4.0	31.0-38.0	58	70	0.003	1	3
SDV1608S5R5C050YPTF	5.5	4.0	22.0-28.0	40	48	0.003	1	5
SDV1608S5R5C100 □ PTF	5.5	4.0	22.0-28.0	40	48	0.005	2	10
SDV1608S5R5C120 □ PTF	5.5	4.0	22.0-28.0	40	48	0.005	2	12
SDV1608S090C030YPTF	9.0	6.4	31.0-38.0	58	70	0.003	1	3
SDV1608S090C050YPTF	9.0	6.4	22.0-28.0	40	48	0.003	1	5
SDV1608S090C100 □ PTF	9.0	6.4	22.0-28.0	40	48	0.005	2	10
SDV1608S090C120 □ PTF	9.0	6.4	22.0-28.0	40	48	0.005	2	12
SDV1608S140C030YPTF	14.0	10.0	31.0-38.0	58	70	0.003	1	3
SDV1608S140C050YPTF	14.0	10.0	22.0-28.0	40	48	0.003	1	5
SDV1608S180C030YPTF	18.0	12.7	31.0-38.0	58	70	0.003	1	3

※V_{wDC} : Max DC working voltage of varistor must exceed or equal to 1.5 times that of the application circuit voltage, V_{wDC} ≥ 1.5 Vn .

※□: Please specify the capacitance tolerance code (N=±30%, Y=+100%~-50%, G=Maximum).

※*1: V_C, Maximum peak voltage across the varistor measured at a specified pulse current and waveform.

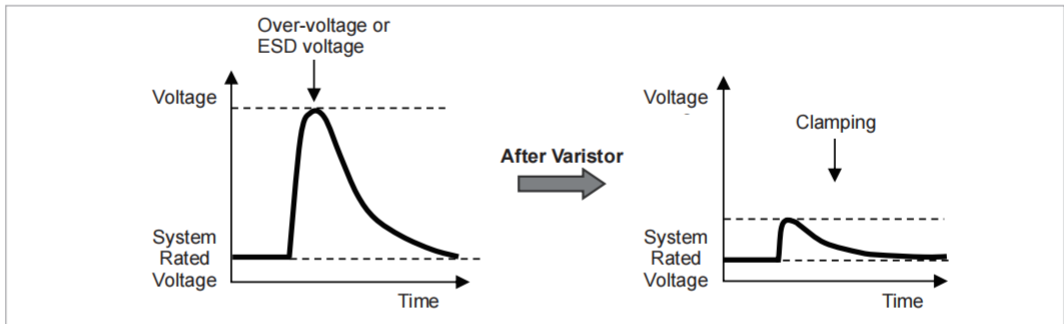
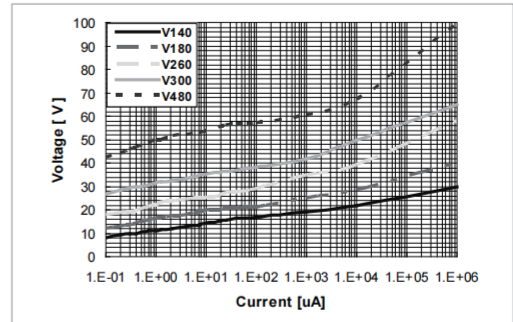
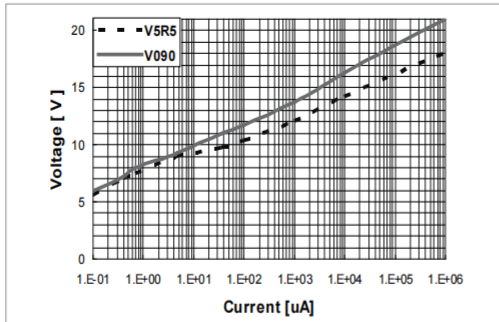
Energy Rating	Pulse & Waveform
0.00-0.05 Joule	1A, 8/20µs
0.10 Joule	2A, 8/20µs
0.20-0.50 Joule	5A, 8/20µs

※*2: V_C, Maximum peak voltage across the varistor measured at 30ns after initiation of pulse on IEC61000-4-2 30A/8kV.

And products with other electrical characteristics can be provided upon customer's request. Please contact your local sales.

TYPICAL ELECTRICAL CHARACTERISTICS

SDV-A/E/H series



SPECIFICATIONS Ultra low capacitance type (C=0.5pF, 1pF or 2pF)

Part Number	Max. Working Voltage		Varistor Voltage	Typical Capacitance	Min. Cut-off Frequency
Test Condition	<20μA		@1mA DC	@0.5Vrms, 1MHz	@-3dB
	DC	AC RMS			
Units	Volts	Volts	Volts	pF	MHz
Symbol	V _{WDC}	V _{WRAC}	V _B	C	f ₀
SDV1005H260C0R5YPTF	26.0	18.4	100-160	0.5	2000
SDV1005H260C010YPTF	26.0	18.4	100-160	1	1250
SDV1005H260C020YPTF	26.0	18.4	60-80	2	600
SDV1005S5R5C0R5YPTF	5.5	4.0	100-160	0.5	2000
SDV1005S5R5C010YPTF	5.5	4.0	100-160	1	1250
SDV1005S5R5C020YPTF	5.5	4.0	60-80	2	600
SDV1005S090C0R5YPTF	9.0	6.4	100-160	0.5	2000
SDV1005S090C010YPTF	9.0	6.4	100-160	1	1250
SDV1005S090C020YPTF	9.0	6.4	60-80	2	600
SDV1005S140C0R5YPTF	14.0	10.0	100-160	0.5	2000
SDV1005S140C010YPTF	14.0	10.0	100-160	1	1250
SDV1005S140C020YPTF	14.0	10.0	60-80	2	600
SDV1005S180C0R5YPTF	18.0	12.7	100-160	0.5	2000
SDV1005S180C010YPTF	18.0	12.7	100-160	1	1250
SDV1005S180C020YPTF	18.0	12.7	60-80	2	600
SDV1608H260C0R5YPTF	26.0	18.4	100-160	0.5	2000
SDV1608H260C010YPTF	26.0	18.4	100-160	1	1250
SDV1608H260C020YPTF	26.0	18.4	60-80	2	600
SDV1608S5R5C0R5YPTF	5.5	4.0	100-160	0.5	2000
SDV1608S5R5C010YPTF	5.5	4.0	100-160	1	1250

SDV Series
SDV-L-HS Series
SDV-MH Series
SDV-T Series

SPECIFICATIONS Ultra low capacitance type (C=0.5pF, 1pF or 2pF)

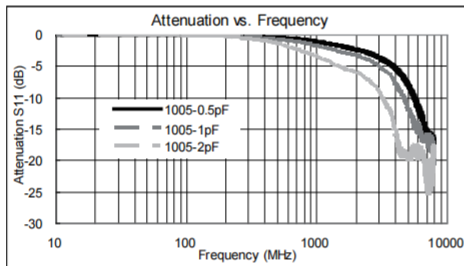
Part Number	Max. Working Voltage		Varistor Voltage	Typical Capacitance	Min. Cut-off Frequency
Test Condition	<20μA		@1mA DC	@0.5Vrms, 1MHz	@-3dB
	DC.5	AC RMS			
Units	Volts	Volts	Volts	pF	MHz
Symbol	V _{WDC}	V _{WAC}	V _B	C	f ₀
SDV1608S5R5C020YPTF	5.5	4.0	60-80	2	600
SDV1608S090C0R5YPTF	9.0	6.4	100-160	0.5	2000
SDV1608S090C010YPTF	9.0	6.4	100-160	1	1250
SDV1608S090C020YPTF	9.0	6.4	60-80	2	600
SDV1608S140C0R5YPTF	14.0	10.0	100-160	0.5	2000
SDV1608S140C010YPTF	14.0	10.0	100-160	1	1250
SDV1608S140C020YPTF	14.0	10.0	60-80	2	600
SDV1608S180C0R5YPTF	18.0	12.7	100-160	0.5	2000
SDV1608S180C010YPTF	18.0	12.7	100-160	1	1250
SDV1608S180C020YPTF	18.0	12.7	60-80	2	600

※ □ :V_{DC} : Max DC working voltage of varistor must exceed or equal to 1.5 times that of the application circuit voltage, V_{DC} ≥ 1.5 Vn .
 ※: Products with other electrical characteristics can be provided upon customer's request. Please contact your local sales.

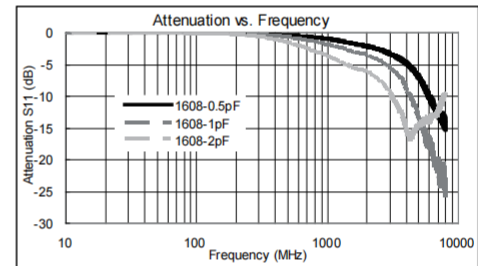
TYPICAL ELECTRICAL CHARACTERISTICS

Ultra low capacitance type (C=0.5pF, 1pF or 2pF)

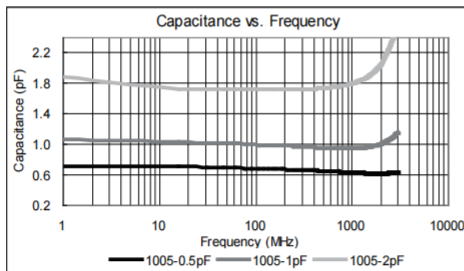
SDV1005 series



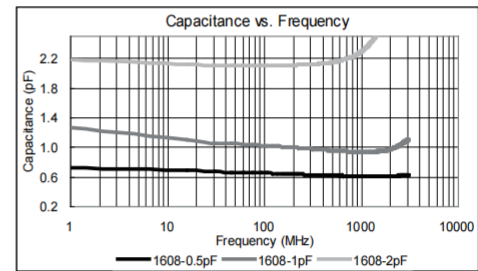
SDV1608 series



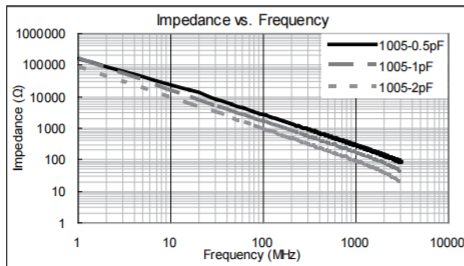
SDV1005 series



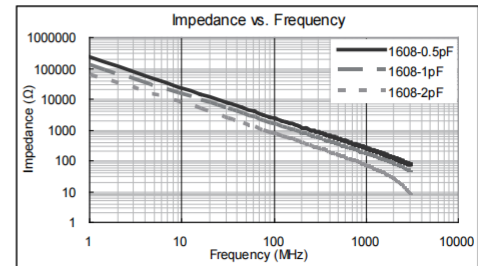
SDV1608 series



SDV1005 series



SDV1608 series



Chip Varistor for Surge Suppression-SDVL-HS Series



Operating temp. : -55°C ~+125°C

- FEATURES**
- ◆ SMD type, small size suitable for high density mounting
 - ◆ Excellent solderability (Ni, Sn plating)
 - ◆ High surge and strong capability of voltage surge suppression

- APPLICATIONS**
- ◆ Voltage surge suppression for power supply, network interface and secondary power supply..
 - ◆ Voltage surge suppression for security system,base station.
 - ◆ Voltage surge suppression for industrial instrument, smart meters, etc.

PRODUCT IDENTIFICATION

1	2	3	4	5	6	7	8	9
SDVL	5650	S	D	480	P	T	HS	901

1	Type
SDVL	Chip Varistor for Surge Suppression

2	External Dimensions (L×W) (mm)	
	1608 [0603]	1.6×0.8
	2016 [0806]	2.2×1.6
	3216 [1206]	3.2×1.6
	3225 [1210]	3.2×2.5
	4532 [1812]	4.5×3.2
	5650 [2220]	5.9×5.1

3	Tolerance of Varistor Voltage	
S	Special	

6	Terminal Code	
P	Ni, Sn Plating	

4	Type of Working Voltage	
D	DC Working Voltage	

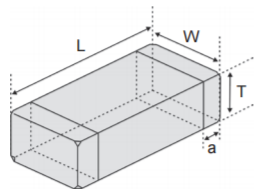
7	Packing	
T	Tape & Reel	

5	Max. Continuous Working Voltage	
	Example	Nominal Value
	090	9V
	140	14V
	480	48V

9	Peak Surge Current	
	Example	Nominal Value
	300	30A
	901	900A
	502	5000A

7	Series Code	
HS	High-Surge Type	

SHAPE AND DIMENSIONS



Type	L	W	T	a
SDVL1608 [0603]	1.6±0.15 [0.063±0.006]	0.8±0.15 [0.031±0.006]	1.0 Max [0.039]	0.10~0.50 [0.004~0.020]
SDVL2016 [0806]	2.2±0.2 [0.087±0.008]	1.6+0.4/-0.2 [0.063+0.016/-0.008]	2.0 Max [0.079]	0.25~0.75 [0.010~0.029]
SDVL3216 [1206]	3.2±0.2 [0.126±0.008]	1.6±0.2 [0.063±0.008]	2.0 Max [0.079]	0.25~0.75 [0.010~0.029]
SDVL3225 [1210]	3.2±0.3 [0.126±0.012]	2.5±0.25 [0.098±0.010]	2.5 Max. [0.098]	0.25~0.75 [0.010~0.029]
SDVL4532 [1812]	4.5±0.4 [0.177±0.016]	3.2±0.3 [0.126±0.012]	3.2 Max. [0.126]	0.25~1.0 [0.010~0.039]
SDVL5650 [2220]	5.9±0.2 [0.232±0.008]	5.1±0.2 [0.201±0.008]	3.2 Max. [0.126]	0.25~1.3 [0.010~0.051]

Unit: mm [inch]

SPECIFICATIONS SDVL1608-HS TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		
	<40μA			@1mA DC	8/20μs		Energy 10/1000μs	Peak Current 8/20μs
Test Condition	DC	AC RMS						
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	Amps
Symbol	V _{WDC}	V _{WRMS}	V _B	V _C	I _C	E _T	I _P	I _N
SDVL1608SD090PTHS101	9	6.4	14.0 [11.0-16.0]	30	1.0	0.10	100	60
SDVL1608SD140PTHS300	14	10.0	19.0 [16.0-22.0]	40	1.0	0.05	30	20
SDVL1608SD180PTHS101	18	12.7	25.0 [22.0-28.0]	45	1.0	0.10	100	60
SDVL1608SD180PTHS121	18	12.7	25.0 [22.0-28.0]	45	1.0	0.10	120	70
SDVL1608SD220PTHS300	22	15.6	30.0 [26.0-34.0]	50	1.0	0.05	30	20
SDVL1608SD300PTHS300	30	21.3	42.0 [37.0-46.0]	70	1.0	0.05	30	20
SDVL1608SD300PTHS101	30	21.3	42.0 [37.0-46.0]	70	1.0	0.10	100	60
SDVL1608SD380PTHS300	38	30.0	50.0 [46.0-54.0]	80	1.0	0.05	30	20
SDVL1608SD380PTHS800	38	30.0	50.0 [46.0-54.0]	80	1.0	0.08	80	50
SDVL1608SD480PTHS600	48	34.1	60.0 [54.0-67.0]	110	1.0	0.08	60	40
SDVL1608SD560PTHS300	56	40.0	68.0 [61.0-75.0]	125	1.0	0.05	30	20
SDVL1608SD600PTHS300	60	46.0	76.0 [69.0-83.0]	130	1.0	0.05	30	20
SDVL1608SD650PTHS300	65	50.0	82.0 [73.0-91.0]	135	1.0	0.05	30	20
SDVL1608SD850PTHS200	85	60.0	100.0 [90.0-110.0]	165	1.0	0.03	20	12
SDVL1608SD101PTHS200	100	75.0	120.0 [108.0-132.0]	200	1.0	0.03	20	12

SDVL2016-HS TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		
	<40μA			@1mA DC	8/20μs		Energy 10/1000μs	Peak Current 8/20μs
Test Condition	DC	AC RMS						
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	Amps
Symbol	V _{WDC}	V _{WRMS}	V _B	V _C	I _C	E _T	I _P	I _N
SDVL2016SD090PTHS401	9	6.4	14.0 [11.0-16.0]	30	5.0	0.5	400	250
SDVL2016SD180PTHS401	18	12.7	25.0 [22.0-28.0]	45	5.0	0.5	400	250
SDVL2016SD180PTHS601	18	12.7	25.0 [22.0-28.0]	45	5.0	0.8	600	400
SDVL2016SD300PTHS600	30	21.3	42.0 [37.0-46.0]	70	5.0	0.08	60	40
SDVL2016SD300PTHS401	30	21.3	42.0 [37.0-46.0]	70	5.0	0.5	400	250
SDVL2016SD380PTHS401	38	30.0	50.0 [46.0-54.0]	80	5.0	0.7	400	250
SDVL2016SD480PTHS301	48	34.1	60.0 [54.0-67.0]	110	5.0	0.7	300	200
SDVL2016SD560PTHS301	56	40.0	68.0 [61.0-75.0]	125	5.0	0.7	300	200
SDVL2016SD600PTHS301	60	46.0	76.0 [69.0-83.0]	130	5.0	0.7	300	200
SDVL2016SD650PTHS301	65	50.0	82.0 [73.0-91.0]	135	5.0	0.7	300	200
SDVL2016SD850PTHS201	85	60.0	100.0 [90.0-110.0]	165	5.0	0.7	200	120
SDVL2016SD101PTHS201	100	75.0	120.0 [108.0-132.0]	200	5.0	0.7	200	120
SDVL2016SD121PTHS700	125	95.0	150.0 [135.0-165.0]	260	5.0	0.3	70	45
SDVL2016SD121PTHS151	125	95.0	150.0 [135.0-165.0]	260	5.0	0.5	150	100
SDVL2016SD151PTHS101	150	115	180.0 [162.0-198.0]	325	5.0	0.5	100	70

SPECIFICATIONS SDVL3216-HS TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		
	<40 μ A			@1mA DC	8/20 μ s		Energy 10/1000 μ s	Peak Current 8/20 μ s
Test Condition	DC	AC RMS						
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	Amps
Symbol	V _{WDC}	V _{WRMS}	V _B	V _C	I _C	E _T	I _P	I _N
SDVL3216SD090PTHS501	9	6.4	14.0 [12.0-16.0]	30	5.0	0.5	500	300
SDVL3216SD140PTHS151	14	10	19.0 [16.0-22.0]	40	5.0	0.2	150	100
SDVL3216SD140PTHS251	14	10	19.0 [22.0-22.0]	40	5.0	0.3	250	150
SDVL3216SD180PTHS251	18	12.7	25.0 [22.0-28.0]	45	5.0	0.3	250	150
SDVL3216SD180PTHS501	18	12.7	25.0 [22.0-28.0]	45	5.0	0.5	500	300
SDVL3216SD300PTHS201	30	21.3	42.0 [37.0-46.0]	70	5.0	0.4	200	120
SDVL3216SD300PTHS501	30	21.3	42.0 [37.0-46.0]	70	5.0	0.8	500	300
SDVL3216SD380PTHS201	38	30.0	50.0 [46.0-54.0]	80	5.0	0.4	200	120
SDVL3216SD380PTHS501	38	30.0	50.0 [46.0-54.0]	80	5.0	1.0	500	300
SDVL3216SD420PTHS151	42	32.0	53.0 [48.0-58.0]	100	5.0	0.4	150	100
SDVL3216SD420PTHS181	42	32.0	53.0 [48.0-58.0]	100	5.0	0.4	180	120
SDVL3216SD480PTHS151	48	34.1	60.0 [54.0-67.0]	110	5.0	0.4	150	100
SDVL3216SD480PTHS501	48	34.1	60.0 [54.0-67.0]	110	5.0	1.2	500	300
SDVL3216SD560PTHS151	56	40.0	68.0 [61.0-75.0]	125	5.0	0.4	150	100
SDVL3216SD560PTHS501	56	40.0	68.0 [61.0-75.0]	125	5.0	1.2	500	300
SDVL3216SD600PTHS151	60	46.0	76.0 [69.0-83.0]	130	5.0	0.4	150	100
SDVL3216SD600PTHS501	60	46.0	76.0 [69.0-83.0]	130	5.0	1.2	500	300
SDVL3216SD650PTHS151	65	50.0	82.0 [73.0-91.0]	135	5.0	0.6	150	100
SDVL3216SD650PTHS181	65	50.0	82.0 [73.0-91.0]	135	5.0	0.6	180	120
SDVL3216SD650PTHS201	65	50.0	82.0 [73.0-91.0]	135	5.0	0.6	200	140
SDVL3216SD650PTHS501	65	50.0	82.0 [73.0-91.0]	135	5.0	1.2	500	300
SDVL3216SD850PTHS151	85	60.0	100.0 [90.0-110.0]	165	5.0	0.6	150	100
SDVL3216SD850PTHS401	85	60.0	100.0 [90.0-110.0]	165	5.0	1.2	400	250
SDVL3216SD101PTHS151	100	75.0	120.0 [108.0-132.0]	200	5.0	0.6	150	100
SDVL3216SD101PTHS401	100	75.0	120.0 [108.0-132.0]	200	5.0	1.2	400	250

SDVL3225-HS TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		
	<40 μ A			@1mA DC	8/20 μ s		Energy 10/1000 μ s	Peak Current 8/20 μ s
Test Condition	DC	AC RMS						
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	Amps
Symbol	V _{WDC}	V _{WRMS}	V _B	V _C	I _C	E _T	I _P	I _N
SDVL3225SD090PTHS401	9	6.4	14.0 [12.0-16.0]	30	5.0	0.5	400	250
SDVL3225SD180PTHS401	18	12.7	25.0 [22.0-28.0]	45	5.0	0.5	400	250
SDVL3225SD180PTHS102	18	12.7	25.0 [22.0-28.0]	45	5.0	1.5	1000	700
SDVL3225SD220PTHS401	22	15.6	30.0 [26.0-34.0]	50	5.0	0.5	400	250
SDVL3225SD300PTHS301	30	21.3	42.0 [37.0-46.0]	70	5.0	0.5	300	200
SDVL3225SD300PTHS401	30	21.3	42.0 [37.0-46.0]	70	5.0	0.5	400	250
SDVL3225SD300PTHS102	30	21.3	42.0 [37.0-46.0]	70	5.0	2.0	1000	700
SDVL3225SD380PTHS301	38	30.0	50.0 [46.0-54.0]	80	5.0	0.8	300	200
SDVL3225SD380PTHS102	38	30.0	50.0 [46.0-54.0]	80	5.0	2.5	1000	700
SDVL3225SD420PTHS301	42	32.0	53.0 [48.0-58.0]	100	5.0	0.8	300	200
SDVL3225SD480PTHS301	48	34.1	60.0 [54.0-67.0]	110	5.0	0.8	300	200
SDVL3225SD480PTHS102	48	34.1	60.0 [54.0-67.0]	110	5.0	3.0	1000	700

SPECIFICATIONS SDVL3225-HS TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		
	<40μA			@1mA DC	8/20μs		Energy 10/1000μs	Peak Current 8/20μs
Test Condition	DC	AC RMS	Volts		Volts	Amps		
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	Amps
Symbol	V _{WDC}	V _{WRMS}	V _B	V _C	I _C	E _T	I _P	I _N
SDVL3225SD560PTHS151	56	40.0	68.0 [61.0-75.0]	125	5.0	0.5	150	100
SDVL3225SD560PTHS301	56	40.0	68.0 [61.0-75.0]	125	5.0	1.0	300	200
SDVL3225SD560PTHS122	56	40.0	68.0 [61.0-75.0]	125	5.0	4.0	1200	800
SDVL3225SD600PTHS301	60	46.0	76.0 [69.0-83.0]	130	5.0	1.0	300	200
SDVL3225SD600PTHS801	60	46.0	76.0 [69.0-83.0]	130	5.0	4.0	800	500
SDVL3225SD600PTHS122	60	46.0	76.0 [69.0-83.0]	130	5.0	4.0	1200	800
SDVL3225SD650PTHS201	65	50.0	82.0 [73.0-91.0]	135	5.0	1.4	200	120
SDVL3225SD650PTHS301	65	50.0	82.0 [73.0-91.0]	135	5.0	1.6	300	200
SDVL3225SD650PTHS601	65	50.0	82.0 [73.0-91.0]	135	5.0	2.0	600	400
SDVL3225SD650PTHS801	65	50.0	82.0 [73.0-91.0]	135	5.0	2.0	800	500
SDVL3225SD650PTHS122	65	50.0	82.0 [73.0-91.0]	135	5.0	4.0	1200	800
SDVL3225SD850PTHS201	85	60.0	100.0 [90.0-110.0]	165	5.0	0.7	200	140
SDVL3225SD850PTHS401	85	60.0	100.0 [90.0-110.0]	165	5.0	1.6	400	250
SDVL3225SD850PTHS152	85	60.0	100.0 [90.0-110.0]	165	5.0	4.0	1500	1000
SDVL3225SD101PTHS201	100	75.0	120.0 [108.0-132.0]	200	5.0	1.0	200	140
SDVL3225SD101PTHS102	100	75.0	120.0 [108.0-132.0]	200	5.0	5.0	1000	700

SDVL4532-HS TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		
	<40μA			@1mA DC	8/20μs		Energy 10/1000μs	Peak Current 8/20μs
Test Condition	DC	AC RMS	Volts		Volts	Amps		
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	Amps
Symbol	V _{WDC}	V _{WRMS}	V _B	V _C	I _C	E _T	I _P	I _N
SDVL4532SD090PTHS801	9	6.4	14.0 [12.0-16.0]	30	5.0	0.5	800	500
SDVL4532SD180PTHS801	18	12.7	25.0 [22.0-28.0]	45	5.0	0.5	800	500
SDVL4532SD180PTHS202	18	12.7	25.0 [22.0-28.0]	45	5.0	1.3	2000	1200
SDVL4532SD260PTHS142	26	18.4	35.0 [31.0-38.0]	60	5.0	1.0	1400	1000
SDVL4532SD300PTHS801	30	21.3	42.0 [37.0-46.0]	70	5.0	0.7	800	500
SDVL4532SD300PTHS152	30	21.3	42.0 [37.0-46.0]	70	5.0	1.0	1500	1000
SDVL4532SD300PTHS202	30	21.3	42.0 [37.0-46.0]	70	5.0	2.0	2000	1200
SDVL4532SD380PTHS801	38	30.0	50.0 [46.0-54.0]	80	5.0	1.0	800	500
SDVL4532SD380PTHS202	38	30.0	50.0 [46.0-54.0]	80	5.0	2.5	2000	1200
SDVL4532SD420PTHS601	42	32.0	53.0 [48.0-58.0]	100	5.0	1.0	600	400
SDVL4532SD480PTHS601	48	34.1	60.0 [54.0-67.0]	110	5.0	1.1	600	400
SDVL4532SD480PTHS202	48	34.1	60.0 [54.0-67.0]	110	5.0	3.0	2000	1200
SDVL4532SD560PTHS601	56	40.0	68.0 [61.0-75.0]	125	5.0	1.1	600	400
SDVL4532SD560PTHS202	56	40.0	68.0 [61.0-75.0]	125	5.0	3.5	2000	1200
SDVL4532SD600PTHS601	60	46.0	76.0 [69.0-83.0]	130	5.0	1.1	600	400
SDVL4532SD600PTHS202	60	46.0	76.0 [69.0-83.0]	130	5.0	3.0	2000	1200
SDVL4532SD650PTHS601	65	50.0	82.0 [73.0-91.0]	135	5.0	1.5	600	400
SDVL4532SD650PTHS302	65	50.0	82.0 [73.0-91.0]	135	5.0	7.5	3000	1800
SDVL4532SD750PTHS501	75	55.0	94.0 [85.0-103.0]	160	5.0	2.0	500	300
SDVL4532SD850PTHS501	85	60.0	100.0 [90.0-110.0]	165	5.0	2.0	500	300

SPECIFICATIONS SDVL4532-HS TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		
	<40 μ A			@1mA DC	8/20 μ s		Energy 10/1000 μ s	Peak Current 8/20 μ s
Test Condition	DC	AC RMS			Volts	Amps		
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	Amps
Symbol	V _{WDC}	V _{WRAC}	V _B	V _C	I _C	E _T	I _P	I _N
SDVL4532SD850PTHS152	85	60.0	100.0 [90.0-110.0]	165	5.0	7.0	1500	1000
SDVL4532SD101PTHS501	100	75.0	120.0 [108.0-132.0]	200	5.0	2.0	500	300
SDVL4532SD101PTHS152	100	75.0	120.0 [108.0-132.0]	200	5.0	7.0	1500	1000
SDVL4532SD121PTHS801	125	95.0	150.0 [135.0-165.0]	260	5.0	0.5	800	500
SDVL4532SD151PTHS501	150	115	180.0 [162.0-198.0]	325	5.0	0.5	500	300

SDVL5650-HS TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		
	<40 μ A			@1mA DC	8/20 μ s		Energy 10/1000 μ s	Peak Current 8/20 μ s
Test Condition	DC	AC RMS			Volts	Amps		
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	Amps
Symbol	V _{WDC}	V _{WRAC}	V _B	V _C	I _C	E _T	I _P	I _N
SDVL5650SD090PTHS122	9	6.4	14.0 [12.0-16.0]	30	10.0	1.5	1200	800
SDVL5650SD180PTHS122	18	12.7	25.0 [22.0-28.0]	45	10.0	1.5	1200	800
SDVL5650SD180PTHS302	18	12.7	25.0 [22.0-28.0]	45	10.0	4.0	3000	2000
SDVL5650SD300PTHS122	30	21.3	42.0 [37.0-46.0]	70	10.0	2.6	1200	800
SDVL5650SD300PTHS302	30	21.3	42.0 [37.0-46.0]	70	10.0	7.0	3000	2000
SDVL5650SD330PTHS122	33	23.4	44.0 [39.0-49.0]	75	10.0	2.6	1200	800
SDVL5650SD380PTHS122	38	30.0	50.0 [46.0-54.0]	80	10.0	2.6	1200	800
SDVL5650SD380PTHS302	38	30.0	50.0 [46.0-54.0]	80	10.0	8.0	3000	2000
SDVL5650SD380PTHS502	38	30.0	50.0 [46.0-54.0]	80	10.0	10.0	5000	3000
SDVL5650SD480PTHS901	48	34.1	60.0 [54.0-67.0]	110	10.0	3.0	900	600
SDVL5650SD480PTHS102	48	34.1	60.0 [54.0-67.0]	110	10.0	3.0	1000	700
SDVL5650SD480PTHS302	48	34.1	60.0 [54.0-67.0]	110	10.0	10.0	3000	2000
SDVL5650SD560PTHS901	56	40.0	68.0 [61.0-75.0]	125	10.0	3.0	900	600
SDVL5650SD560PTHS502	56	40.0	68.0 [61.0-75.0]	125	10.0	17.0	5000	3000
SDVL5650SD600PTHS901	60	46.0	76.0 [69.0-83.0]	130	10.0	2.7	900	600
SDVL5650SD600PTHS502	60	46.0	76.0 [69.0-83.0]	130	10.0	15.0	5000	3000
SDVL5650SD650PTHS801	65	50.0	82.0 [73.0-91.0]	135	10.0	3.0	800	500
SDVL5650SD650PTHS901	65	50.0	82.0 [73.0-91.0]	135	10.0	3.0	900	600
SDVL5650SD650PTHS152	65	50.0	82.0 [73.0-91.0]	135	10.0	5.0	1500	1000
SDVL5650SD650PTHS202	65	50.0	82.0 [73.0-91.0]	135	10.0	7.5	2000	1200
SDVL5650SD650PTHS302	65	50.0	82.0 [73.0-91.0]	135	10.0	10.0	3000	2000
SDVL5650SD650PTHS452	65	50.0	82.0 [73.0-91.0]	135	10.0	18.0	4500	3000
SDVL5650SD650PTHS502	65	50.0	82.0 [73.0-91.0]	135	10.0	18.0	5000	3000
SDVL5650SD850PTHS801	85	60.0	100.0 [90.0-110.0]	165	10.0	4.0	800	500
SDVL5650SD850PTHS252	85	60.0	100.0 [90.0-110.0]	165	10.0	10.0	2500	1500
SDVL5650SD850PTHS452	85	60.0	100.0 [90.0-110.0]	165	10.0	21.0	4500	3000
SDVL5650SD101PTHS801	100	75.0	120.0 [108.0-132.0]	200	10.0	4.0	800	500
SDVL5650SD101PTHS402	100	75.0	120.0 [108.0-132.0]	200	10.0	21.0	4000	2500
SDVL5650SD121PTHS202	125	95.0	150.0 [135.0-165.0]	260	5.0	12.0	2000	1200
SDVL5650SD151PTHS152	150	115	180.0 [162.0-198.0]	325	5.0	12.0	1500	1000

Chip Varistor for Surge Suppression – SVMH Series

Operating temp. : -55°C ~+125°C



FEATURES

- ◆ SMD type, small size suitable for high density mounting
- ◆ High voltage varistor, suitable for AC circuit
- ◆ Excellent clamping ratio and strong capability of voltage surge suppression

APPLICATIONS

- ◆ Lightning protection and voltage surge suppression for power supply, network interface, LED lighting.
- ◆ Able to replace part of leaded varistor in situations with limited height

PRODUCT IDENTIFICATION

1	2	3	4	5	6	7	8
SVMH	2016	K	A	301	P	T	500

1 Type	
SVMH	Chip Varistor for Surge Suppression

2 External Dimensions (L×W) (mm)	
2016 [0806]	2.2×1.6
3216 [1206]	3.2×1.6
3225 [1210]	3.2×2.5
4532 [1812]	4.6×3.5
5650 [2220]	6.0×5.3

3 Tolerance of Varistor Voltage	
K	±10%

6 Terminal Code	
P	Ni, Sn Plating

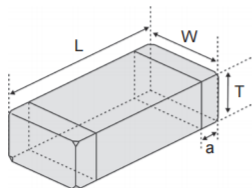
7 Packing	
T	Tape & Reel

4 Type of Working Voltage	
A	AC Working Voltage

5 Max. Continuous Working Voltage	
Example	Nominal Value
301	300V

8 Peak Surge Current	
500	50A
501	500A

SHAPE AND DIMENSIONS



Unit: mm [inch]

Type	L	W	T	a
SVMH2016 [0806]	2.2±0.2 [.087±.008]	1.6+0.4/-0.2 [.063+.016/-0.08]	2.0 Max. [.079]	0.25~0.75 [.010~.029]
SVMH3216 [1206]	3.2+0.6/-0.2 [.126+0.024/-0.08]	1.6+0.4/-0.2 [.063+.016/-0.08]	2.0 Max. [.079]	0.25~0.75 [.010~.029]
SVMH3225 [1210]	3.2+0.6/-0.2 [.126+0.024/-0.08]	2.5+0.4/-0.2 [.098+.016/-0.08]	2.6 Max. [.102]	0.25~0.75 [.010~.029]
SVMH4532 [1812]	4.6+0.6/-0.2 [.177+0.024/-0.08]	3.5+0.5/-0.2 [.126+.020/-0.08]	3.5 Max. [.138]	0.30~0.80 [.012~.031]
SVMH5650 [2220]	6.0+0.7/-0.3 [.236+.028/-0.12]	5.3+0.5/-0.3 [.209+.020/-0.12]	3.6 Max. [.142]	0.40~0.90 [.016~.034]

SPECIFICATIONS SVMH2016 TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient	
	DC	AC RMS		Volts	Volts	Amps	Energy 10/1000µs
Test Condition	<30µA		@1mA DC	8/20µs		Joules	Amps
Units	Volts	Volts	Volts	Volts	Amps		
Symbol	V _{WDC}	V _{WAC}	V _B	V _C	I _C	E _T	I _P
SVMH2016KA151PT101	200	150	240[216-264]	360	5.0	0.36	100
SVMH2016KA151PT181	200	150	240[216-264]	360	5.0	0.36	180
SVMH2016KA171PT181	225	175	270[243-297]	410	5.0	0.40	180
SVMH2016KA191PT101	250	195	300[270-330]	450	5.0	0.40	100
SVMH2016KA211PT101	275	210	330[297-363]	495	5.0	0.36	100
SVMH2016KA231PT101	300	230	360[324-396]	540	5.0	0.36	100
SVMH2016KA251PT700	320	250	390[351-429]	590	5.0	0.30	70
SVMH2016KA251PT500	320	250	390[351-429]	590	5.0	0.36	50
SVMH2016KA271PT500	350	275	430[387-473]	650	5.0	0.40	50
SVMH2016KA301PT500	385	300	470[423-517]	710	5.0	0.30	50
SVMH2016KA321PT500	410	320	510[459-561]	880	5.0	0.30	50

SVMH3216 TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient	
	DC	AC RMS		Volts	Volts	Amps	Energy 10/1000µs
Test Condition	<30µA		@1mA DC	8/20µs		Joules	Amps
Units	Volts	Volts	Volts	Volts	Amps		
Symbol	V _{WDC}	V _{WAC}	V _B	V _C	I _C	E _T	I _P
SVMH3216KA151PT301	200	150	240[216-264]	360	5.0	0.9	300
SVMH3216KA171PT301	225	175	270[243-297]	410	5.0	1.0	300
SVMH3216KA191PT201	250	195	300[270-330]	450	5.0	1.0	200
SVMH3216KA211PT201	275	210	330[297-363]	495	5.0	1.0	200
SVMH3216KA231PT201	300	230	360[324-396]	540	5.0	0.9	200
SVMH3216KA251PT101	320	250	390[351-429]	590	5.0	0.9	100
SVMH3216KA271PT101	350	275	430[387-473]	650	5.0	1.0	100
SVMH3216KA301PT101	385	300	470[423-517]	710	5.0	0.5	100
SVMH3216KA321PT600	410	320	510[459-561]	880	5.0	0.5	60

SVMH3225 TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient	
	DC	AC RMS		Volts	Volts	Amps	Energy 10/1000µs
Test Condition	<30µA		@1mA DC	8/20µs		Joules	Amps
Units	Volts	Volts	Volts	Volts	Amps		
Symbol	V _{WDC}	V _{WAC}	V _B	V _C	I _C	E _T	I _P
SVMH3225KA151PT401	200	150	240[216-264]	360	5.0	1.8	400
SVMH3225KA171PT401	225	175	270[243-297]	410	5.0	2.0	400
SVMH3225KA191PT401	250	195	300[270-330]	450	5.0	2.0	400
SVMH3225KA211PT401	275	210	330[297-363]	495	5.0	1.8	400
SVMH3225KA231PT401	300	230	360[324-396]	540	5.0	1.8	400
SVMH3225KA251PT201	320	250	390[351-429]	590	5.0	1.8	200
SVMH3225KA271PT201	350	275	430[387-473]	650	5.0	1.8	200
SVMH3225KA301PT201	385	300	470[423-517]	710	5.0	2.0	200
SVMH3225KA301PT301	385	300	470[423-517]	710	5.0	2.0	300
SVMH3225KA301PT401	385	300	470[423-517]	710	5.0	2.0	400

SPECIFICATIONS SVMH3225 TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient	
	DC	AC RMS		8/20μs	Energy 10/1000μs	Peak Current 8/20μs	
Test Condition	<30μA		@1mA DC				
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps
Symbol	V _{WDC}	V _{WAC}	V _B	V _C	I _C	E _T	I _P
SVMH3225KA321PT151	410	320	510[459-561]	880	5.0	2.0	150
SVMH3225KA321PT251	410	320	510[459-561]	880	5.0	2.0	250

SVMH4532 TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient	
	DC	AC RMS		8/20μs	Energy 10/1000μs	Peak Current 8/20μs	
Test Condition	<30μA		@1mA DC				
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps
Symbol	V _{WDC}	V _{WAC}	V _B	V _C	I _C	E _T	I _P
SVMH4532KA171PT801	225	175	270[243-297]	410	5.0	7.2	800
SVMH4532KA301PT401	385	300	470[423-517]	710	5.0	7.2	400
SVMH4532KA301PT801	385	300	470[423-517]	710	5.0	5.0	800
SVMH4532KA321PT251	410	320	510[459-561]	880	5.0	5.0	250

SVMH5650 TYPE

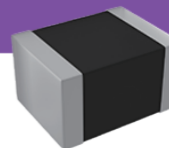
Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient	
	DC	AC RMS		8/20μs	Energy 10/1000μs	Peak Current 8/20μs	
Test Condition	<30μA		@1mA DC				
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps
Symbol	V _{WDC}	V _{WAC}	V _B	V _C	I _C	E _T	I _P
SVMH5650KA151PT152	200	150	240[216-264]	395	10.0	10	1500
SVMH5650KA171PT152	225	175	270[243-297]	455	10.0	10	1500
SVMH5650KA191PT122	250	195	300[270-330]	495	10.0	10	1200
SVMH5650KA191PT152	250	195	300[270-330]	495	10.0	10	1500
SVMH5650KA211PT122	275	210	330[297-363]	540	10.0	10	1200
SVMH5650KA211PT152	275	210	330[297-363]	540	10.0	10	1500
SVMH5650KA231PT122	300	230	360[324-396]	595	10.0	10	1200
SVMH5650KA231PT152	300	230	360[324-396]	595	10.0	10	1500
SVMH5650KA231PT202	300	230	360[324-396]	595	10.0	10	2000
SVMH5650KA251PT801	320	250	390[351-429]	650	10.0	10	800
SVMH5650KA271PT801	350	275	430[387-473]	710	10.0	10	800
SVMH5650KA301PT801	385	300	470[423-517]	775	10.0	10	800
SVMH5650KA321PT102	410	320	510[459-561]	845	10.0	10	1000
SVMH5650KA351PT102	455	350	560[504-616]	925	10.0	10	1000

※V_{WDC} : Max AC working voltage of Varistor must exceed or equal to 1.2 times that of the application circuit voltage, V_{WDC} ≥ 1.2 V_n .

※I_P : Rated single pulse current at 8/20μs of Varistor must exceed or equal to 1.2 times that of the application circuit pulse current, I_P ≥ 1.2 I_{pn} .

Thermistors

Chip Temp. Sensing NTC Thermistor – SDNT Series



Operating temp. : -40°C ~+125°C

- FEATURES**
- ◆ SMD type suitable for high density mounting
 - ◆ Excellent solder ability
 - ◆ Series of B constant for various applications

- APPLICATIONS**
- ◆ Mobile phones, wearable device such as smart watches, TWS headphones, etc.
 - ◆ Office automation such as printer, facsimile, word processor, etc.
 - ◆ Battery, CPU temperature protection.

PRODUCT IDENTIFICATION

1	2	3	4	5	6	7	8	9
SDNT	1005	X	103	F	3380	F	T	F

1 Type

SDNT	Chip NTC Thermistor
------	---------------------

2 External Dimensions (L×W) (mm)

0402 [01005]	0.4×0.2
0603 [0201]	0.6×0.3
1005 [0402]	1.0×0.5
1608 [0603]	1.6×0.8
2012 [0805]	2.0×1.25

3 Internal Code

X
C

4 Zero-power Resistance

Example	Nominal Value
472	4.7kΩ
103	10kΩ

5 Tolerance of Resistance

F	±1%
H	±3%
J	±5%

6 B Constant (25-50°C)

Example	Nominal Value
3380	3380K
4250	4250K

7 Tolerance of B Constant

F	±1%
H	±3%

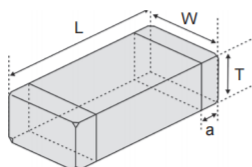
8 Packing

T	Tape & Reel
---	-------------

9 Hazardous Substance Free Products

F

SHAPE AND DIMENSIONS



Unit: mm [inch]

Type	L	W	T	a
SDNT0402 [01005]	0.4±0.02 [.016±0.0008]	0.2±0.02 [.008±0.0008]	0.2±0.02 [.008±0.0008]	0.105±0.035 [.004±.0010]
SDNT0603 [0201]	0.6±0.05 [.024±.002]	0.3±0.05 [.012±.002]	0.3±0.05 [.012±.002]	0.15±0.05 [.006±.002]
SDNT1005 [0402]	1.0±0.15 [.039±.006]	0.5±0.15 [.020±.006]	0.5±0.15 [.020±.006]	0.25±0.1 [.010±.004]
SDNT1608 [0603]	1.6±0.15 [.063±.006]	0.8±0.15 [.031±.006]	0.8±0.15 [.031±.006]	0.3±0.2 [.012±.008]
SDNT2012 [0805]	2.0±0.2 [.079±.008]	1.25±0.2 [.049±.008]	0.85±0.2 [.033±.008]	0.5±0.3 [.020±.012]

SPECIFICATIONS SDNT0402 TYPE

Part Number	Resistance at 25°C	B Constant (25-50°C)	Max. Permissive Operating Current (25°C)	Thermal Time Constant	Dissipation Factor	Rated Electric Power
Units	kΩ	K	mA	sec	mW/°C	mW
Symbol	R25	B25/50	I _{max.}	t	C	P
SDNT0402C103 □ 3380 ⊙ TF	10	3380	0.31	<3 sec.	1.0	100
SDNT0402C104 □ 4250 ⊙ TF	100	4250	0.10			

SDNT0603 TYPE

Part Number	Resistance at 25°C	B Constant (25-50°C)	Max. Permissive Operating Current (25°C)	Thermal Time Constant	Dissipation Factor	Rated Electric Power
Units	kΩ	K	mA	sec	mW/°C	mW
Symbol	R25	B25/50	I _{max.}	t	C	P
SDNT0603C103 □ 3380 ⊙ TF	10	3380	0.31	<3 sec.	1.0	100
SDNT0603C223 □ 3380 ⊙ TF	22	3380	0.21			
SDNT0603C473 □ 4050 ⊙ TF	47	4050	0.14			
SDNT0603C683 □ 4250 ⊙ TF	68	4250	0.12			
SDNT0603C104 □ 4250 ⊙ TF	100	4250	0.10			

SDNT1005 TYPE

Part Number	Resistance at 25°C	B Constant (25-50°C)	Max. Permissive Operating Current (25°C)	Thermal Time Constant	Dissipation Factor	Rated Electric Power
Units	kΩ	K	mA	sec	mW/°C	mW
Symbol	R25	B25/50	I _{max.}	t	C	P
SDNT1005X682 □ 3850 ⊙ TF	6.8	3850	0.38	<3 sec.	1.0	100
SDNT1005X103 □ 3380 ⊙ TF	10	3380	0.31			
SDNT1005X103 □ 3435 ⊙ TF	10	3435	0.31			
SDNT1005X103 □ 3950 ⊙ TF	10	3950	0.33			
SDNT1005X103 □ 4050 ⊙ TF	10	4050	0.33			
SDNT1005X153 □ 3450 ⊙ TF	15	3450	0.25			
SDNT1005X223 □ 3950 ⊙ TF	22	3950	0.23			
SDNT1005X303 □ 3950 ⊙ TF	30	3950	0.15			
SDNT1005X303 □ 4050 ⊙ TF	30	4050	0.15			
SDNT1005X333 □ 3950 ⊙ TF	33	3950	0.15			
SDNT1005X333 □ 4050 ⊙ TF	33	4050	0.15			
SDNT1005X473 □ 4050 ⊙ TF	47	4050	0.12			
SDNT1005X473 □ 4100 ⊙ TF	47	4100	0.12			
SDNT1005X503 □ 4050 ⊙ TF	50	4050	0.12			
SDNT1005X503 □ 4100 ⊙ TF	50	4100	0.12			
SDNT1005X683 □ 4150 ⊙ TF	68	4150	0.11			
SDNT1005X104 □ 3950 ⊙ TF	100	3950	0.10			
SDNT1005X104 □ 4150 ⊙ TF	100	4150	0.10			
SDNT1005X104 □ 4250 ⊙ TF	100	4250	0.10			
SDNT1005X154 □ 4250 ⊙ TF	150	4250	0.08			
SDNT1005X224 □ 4250 ⊙ TF	220	4250	0.06			
SDNT1005X224 □ 4350 ⊙ TF	220	4350	0.06			

SDNT1608 TYPE

Part Number	Resistance at 25°C	B Constant (25-50°C)	Max. Permissive Operating Current (25°C)	Thermal Time Constant	Dissipation Factor	Rated Electric Power
Units	kΩ	K	mA	sec	mW/°C	mW
Symbol	R25	B25/50	I _{max.}	t	C	P
SDNT1608X222 □ 3450 ⊙ TF	2.2	3450	0.67	<5 sec.	1.0	100
SDNT1608X472 □ 3850 ⊙ TF	4.7	3850	0.46			

SPECIFICATIONS SDNT1608 TYPE

Part Number	Resistance at 25°C	B Constant (25-50°C)	Max. Permissive Operating Current (25°C)	Thermal Time Constant	Dissipation Factor	Rated Electric Power
Units	kΩ	K	mA	sec	mW/°C	mW
Symbol	R25	B25/50	I _{max.}	t	C	P
SDNT1608X502 □ 3850 ⊙ TF	5	3850	0.44	<5 sec.	1.0	100
SDNT1608X103 □ 3380 ⊙ TF	10	3380	0.31			
SDNT1608X103 □ 3435 ⊙ TF	10	3435	0.31			
SDNT1608X103 □ 3450 ⊙ TF	10	3450	0.31			
SDNT1608X103 □ 3950 ⊙ TF	10	3950	0.33			
SDNT1608X103 □ 4000 ⊙ TF	10	4000	0.33			
SDNT1608X153 □ 3950 ⊙ TF	15	3950	0.25			
SDNT1608X223 □ 3950 ⊙ TF	22	3950	0.21			
SDNT1608X223 □ 4050 ⊙ TF	22	4050	0.21			
SDNT1608X333 □ 4050 ⊙ TF	33	4050	0.17			
SDNT1608X473 □ 4050 ⊙ TF	47	4050	0.14			
SDNT1608X473 □ 4150 ⊙ TF	47	4150	0.14			
SDNT1608X503 □ 4050 ⊙ TF	50	4050	0.13			
SDNT1608X503 □ 4150 ⊙ TF	50	4150	0.13			
SDNT1608X683 □ 4150 ⊙ TF	68	4150	0.12			
SDNT1608X104 □ 3950 ⊙ TF	100	3950	0.1			
SDNT1608X104 □ 4250 ⊙ TF	100	4250	0.1			
SDNT1608X124 □ 4250 ⊙ TF	120	4250	0.1			
SDNT1608X154 □ 4300 ⊙ TF	150	4300	0.08			
SDNT1608X224 □ 4300 ⊙ TF	220	4300	0.06			

SDNT2012 TYPE

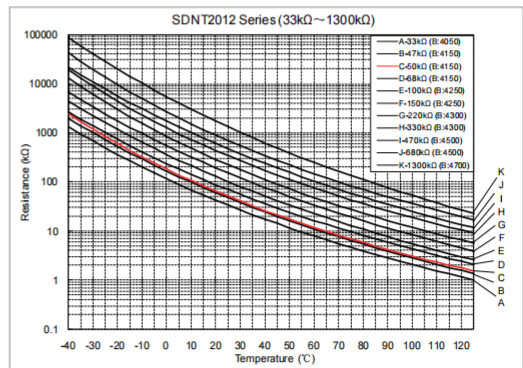
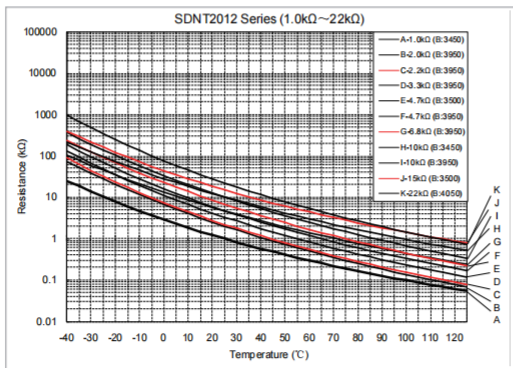
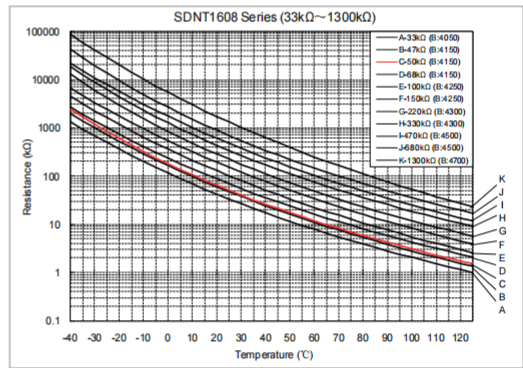
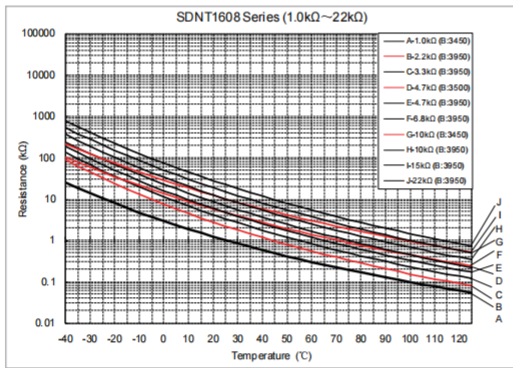
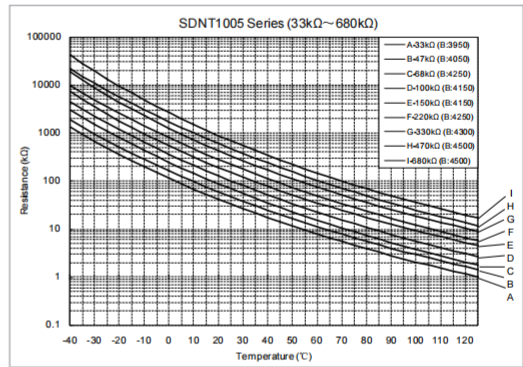
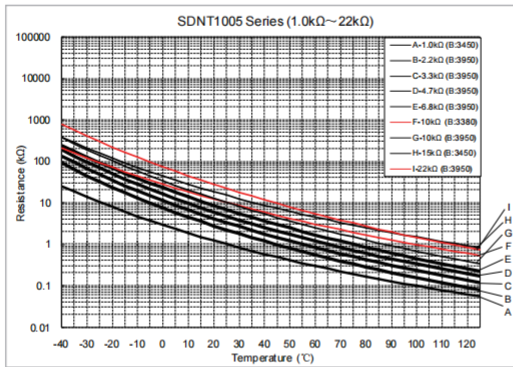
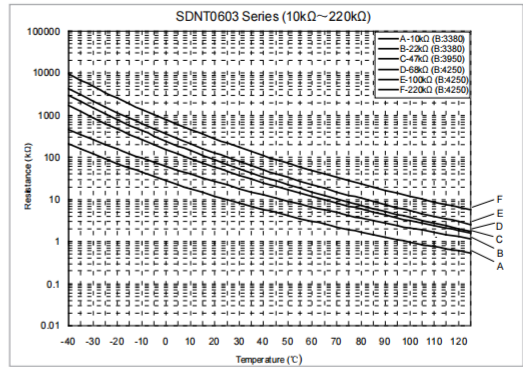
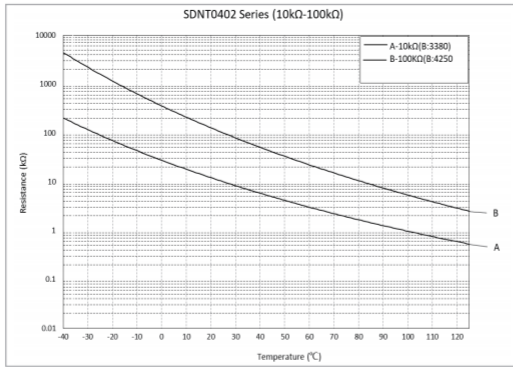
Part Number	Resistance at 25°C	B Constant (25-50°C)	Max. Permissive Operating Current (25°C)	Thermal Time Constant	Dissipation Factor	Rated Electric Power
Units	kΩ	K	mA	sec	mW/°C	mW
Symbol	R25	B25/50	I _{max.}	t	C	P
SDNT2012X472 □ 3950 ⊙ TF	4.7	3950	0.65	<5 sec.	2.0	200
SDNT2012X502 □ 3950 ⊙ TF	5	3950	0.60			
SDNT2012X103 □ 3450 ⊙ TF	10	3450	0.40			
SDNT2012X103 □ 3950 ⊙ TF	10	3950	0.44			
SDNT2012X153 □ 3950 ⊙ TF	15	3950	0.33			
SDNT2012X223 □ 4050 ⊙ TF	22	4050	0.31			
SDNT2012X303 □ 4050 ⊙ TF	30	4050	0.25			
SDNT2012X333 □ 4050 ⊙ TF	33	4050	0.24			
SDNT2012X473 □ 4050 ⊙ TF	47	4050	0.20			
SDNT2012X473 □ 4150 ⊙ TF	47	4150	0.20			
SDNT2012X503 □ 4050 ⊙ TF	50	4050	0.18			
SDNT2012X503 □ 4150 ⊙ TF	50	4150	0.18			
SDNT2012X104 □ 3950 ⊙ TF	100	3950	0.14			
SDNT2012X104 □ 4250 ⊙ TF	100	4250	0.14			
SDNT2012X154 □ 4350 ⊙ TF	150	4350	0.11			
SDNT2012X224 □ 4350 ⊙ TF	220	4350	0.08			

※ □ : Please specify the resistance tolerance code (F=±1%, H=±3%, J=±5%).

※ ⊙ : Please specify the B value tolerance code (F=±1%, H=±3%).

And products with other electrical characteristics can be provided upon customer's request. Please contact your local sales.

TYPICAL ELECTRICAL CHARACTERISTICS



SDV Series
SDV-LHS Series
SVMH Series
SDNT Series

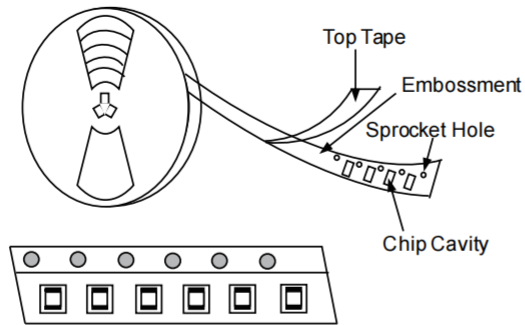
PACKAGING



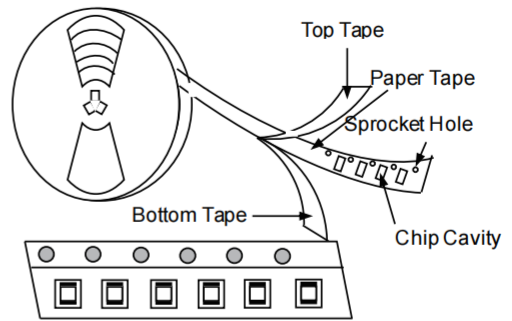
PACKAGING

TAPING DRAWINGS

◆ Embossed Tape

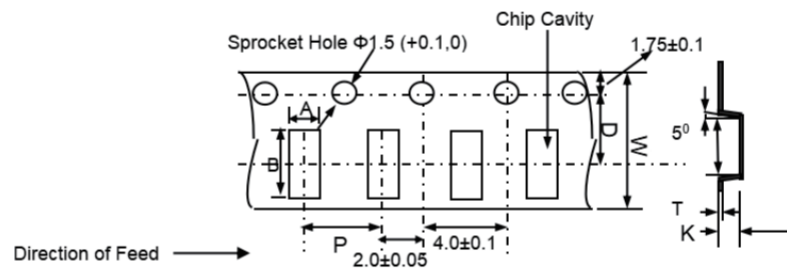


◆ Paper Tape



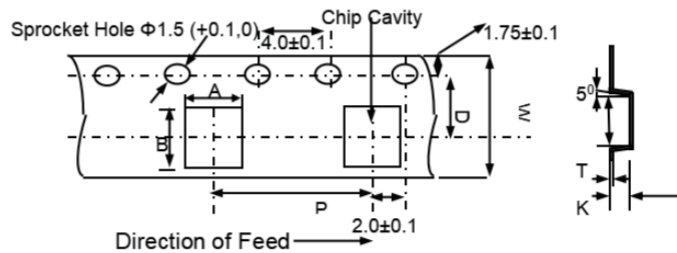
TAPING DIMENSIONS (Unit: mm)

◆ Embossed Tape (8mm/12mm Wide Tape)



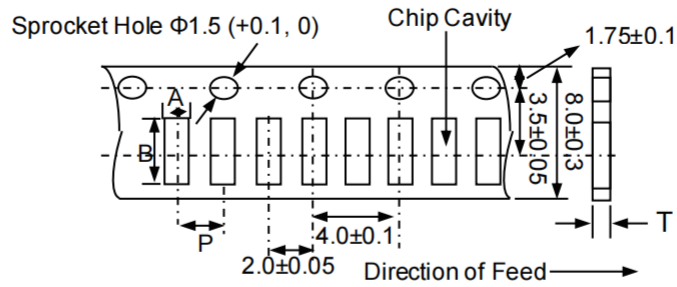
Type	Chip Thickness	W	A	B	D	P	K max.	T max.	Quantity (pcs/reel)
SDVL2016	2.0	8.0	2.1	2.50	3.50	4.0	2.20	0.30	2,000
SDVL3216	2.0	8.0	2.1	3.90	3.50	4.0	2.20	0.30	3,000/2,000
SDVL3225	2.5	8.0	3.0	3.90	3.50	4.0	2.90	0.30	2,000/1,500
SVMH2016	2.0	8.0	2.10	2.50	3.50	4.0	2.20	0.30	2,000
SVMH3216	2.0	8.0	2.10	3.90	3.50	4.0	2.20	0.30	2,000
SVMH3225	2.6	12.0	2.85	3.50	5.50	8.0	2.85	0.35	1,500

◆ Embossed Tape (12mm Wide Tape)



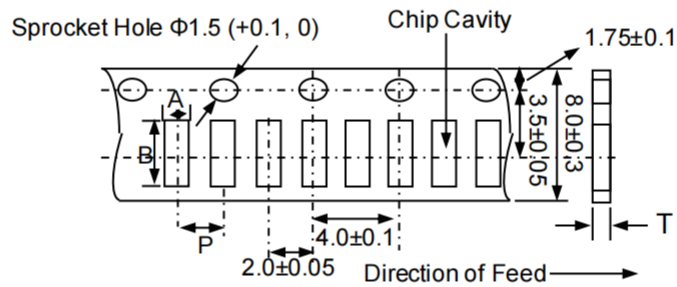
Type	Chip Thickness	W	A	B	D	P	K max.	T max.	Quantity (pcs/reel)
SDVL4532	3.2	12.0	3.80	5.20	5.50	8.0	3.80	0.33	4,000/2,000
SDVL5650	3.2	12.0	5.4	6.10	5.50	8.0	2.90	0.40	3,000/2,000
SVMH4532	3.5	12.0	3.80	5.20	5.50	8.0	3.80	0.33	2,000
SVMH5650	3.6	12.0	5.90	6.80	5.50	8.0	3.9	0.33	2,000

PACKAGING PAPER TAPE (8mm Wide Tape Series)



Type	Chip Thickness	A	B	P	T max.	Quantity (pcs/reel)
SDNT0402	0.20	0.22	0.43	2.0	0.35	20,000
SDNT0603	0.30	0.40	0.70	2.0	0.55	15,000
SDNT0603	0.50	0.65	1.15	2.0	0.80	10,000
SDNT1005	0.50	0.65	1.15	2.0	0.80	10,000

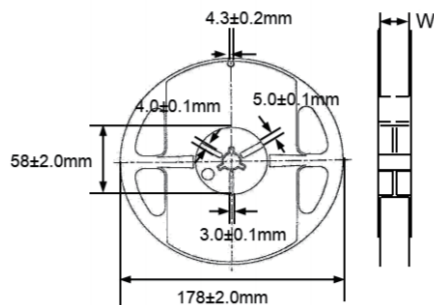
PAPER TAPE (8mm Wide Tape)



Type	Chip Thickness	A	B	P	T max.	Quantity (pcs/reel)
SDV1608	0.80	1.00	1.80	4.0	1.10	4,000
SDV2012	0.85	1.50	2.30	4.0	1.10	4,000
SDVL1608	1.00	1.0	1.80	4.0	1.10	4,000
SDNT1608	0.80	1.00	1.80	4.0	1.10	4,000
SDNT2012	0.85	1.50	2.30	4.0	1.10	4,000

PACKAGING REEL DIMENSIONS (Unit: mm)

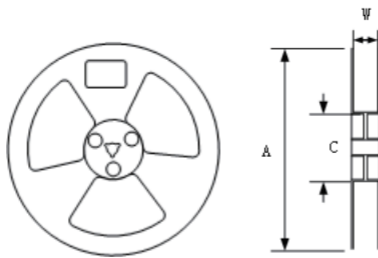
◆ SDV/SDVL1608-3225/SVMH2016-3216/SDNT Series



※For SDNT1005/SDNT1608/SDNT2012 Series $W=10.0 \pm 1.5 \text{mm}$; For others, $W=8.4 \pm 1.5/-0.0 \text{mm}$

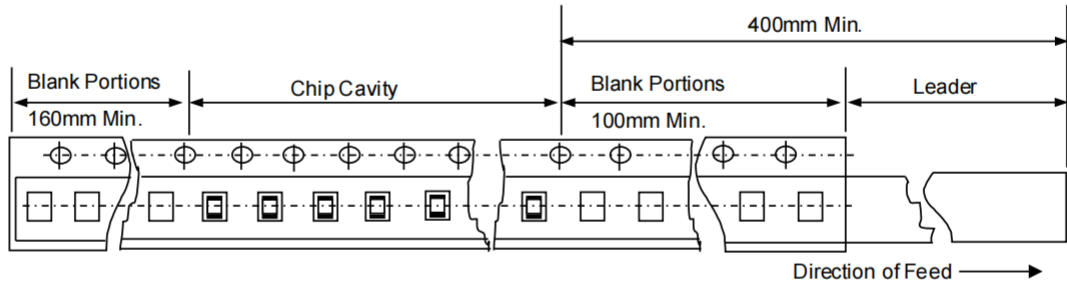
PACKAGING

◆ SDVL4532-5650/SVMH3225-5650 Series



Type	Spec.	Dimensions(mm)		
		A	W	C
SDVL4532	13"*12mm	330	12.6	100
SDVL5650	13"*12mm	330	12.6	100
SVMH3225	13"*12mm	330	12.6	100
SVMH4532	13"*12mm	330	12.6	100
SVMH5650	13"*12mm	330	12.6	100

LEADER AND BLANK PORTION



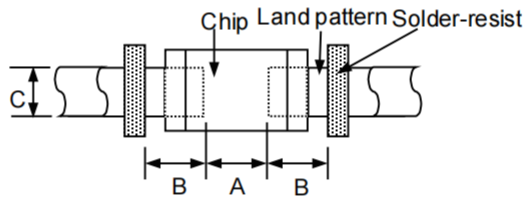
PCB

RECOMMENDED PCB DESIGN FOR SMT LAND-PATTERNS

When chips are mounted on a PCB, the amount of solder used (size of fillet) can directly affect chip performance. Therefore, the following items must be carefully considered in the design of solder land patterns: (1) The amount of solder applied can affect the ability of chips to withstand mechanical stresses which may lead to breaking or cracking. Therefore, when designing land-patterns it is necessary to consider the appropriate size and configuration of the solder pads which in turn determines the amount of solder necessary to form the fillets.

(2) When more than one part is jointly soldered onto the same land or pad, the pad must be designed that each component's soldering point is separated by solder-resist.

Recommended land dimensions for a typical chip component land patterns for PCBs.



For re-flow soldering (unit: mm)

Type	A	B	C
SDNT0402	0.15~0.19	0.18~0.22	0.18~0.22
SDNT0603	0.2~0.3	0.2~0.3	0.3~0.35
SDNT1005	0.45~0.55	0.4~0.5	0.45~0.55
SDNT1608	0.6~0.8	0.6~0.8	0.6~0.8
SDNT2012	0.8~1.2	0.8~1.2	0.9~1.6
SDV1005	0.45~0.55	0.4~0.5	0.45~0.55
SDV1608	0.6~0.8	0.6~0.8	0.6~0.8
SDV2012	0.8~1.2	0.8~1.2	0.9~1.6
SDVL1608	0.6~0.8	0.6~0.8	0.6~0.8
SDVL2016	1.2~1.6	0.8~1.2	1.60~2
SDVL3216	1.8~2.5	1~1.5	1.20~2
SDVL3225	1.9~2.1	1.2~1.5	2.60~2.8
SDVL4532	2.8~3	1.50~1.8	3.30~3.6
SDVL5650	4~4.2	1.8~2	5.20~5.5
SVMH2016	1.2~1.6	0.8~1.2	1.6~2
SVMH3216	1.8~2.5	1.0~1.5	1.6~2.2
SVMH3225	1.9~2.5	1.2~1.6	2.6~3
SVMH4532	2.8~3.2	1.5~1.9	3.3~3.9
SVMH5650	4~4.4	1.8~2.2	5.2~5.8

Sensitive Components

Shenzhen Sunlord Electronics Co., Ltd.
Sunlord Industrial Park, Dafuyuan, Guanlan, Guangang Road, Longhua District, Shenzhen, China
Tel: 86-755-2983 2380 2983 2660
E-mail: sunlord@sunlordinc.com

Dongguan Sunlord Electronics Co., Ltd.
No. 1, Fengtai Road, Tangxia, Dongguan, Guangdong, China
Tel: 86-0769-8916 9999

