叠层片式压敏电阻器—SDV 系列
Multilayer Chip Varistor – SDV Series
Operating Temp. : -55℃ ~ +125℃

特征
- SMD 结构适合高密度安装
- 优异的限压比，响应时间短（<0.5ns）
- 良好的焊接性能（镍、锡电镀）

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

用途
- IC 和晶体管的过电压保护
- ESD 和 I/O 保护
- EFT 保护
- 手机、PDA 等便携式设备保护

APPLICATIONS
- Transient voltage protection for IC and transistor
- ESD and I/O protection
- EFT and burst protection
- Portable equipment protection, such as mobile phone, PDA, etc

产品型号

PRODUCT IDENTIFICATION

SDV	2012	A	180	C121	N	P	T	F
①	②	③	④	⑤	⑥	⑦	⑧	⑨

①

分类 Type	
SDV	片式压敏电阻器 Chip Varistor

②

外形尺寸(L×W) (mm) External Dimensions (L×W) (mm)	
1005 [0402]	1.0×0.5
1608 [0603]	1.6×0.8
2012 [0805]	2.0×1.25
3216 [1206]	3.2×1.6

③

特征代号 Feature Code	
A	For General Use
E	For ESD
H	For High Speed
S	For special request

④

直流工作电压 Maximum Continuous Working Voltage	
Example	Nominal Value
5R5	5.5V
180	18V

⑤

电容 Capacitance @1MHz	
Example	Nominal Value
C121	120pF
C152	1500pF

⑥

电容公差 Tolerance of Capacitance	
F	+30%/-80%
M	±20%
N	±30%
Y	+100/-50%
G	Maximum

⑦

端头代号 Terminal Code	
P	Ni, Sn plating
S	Pt/Pd/Ag

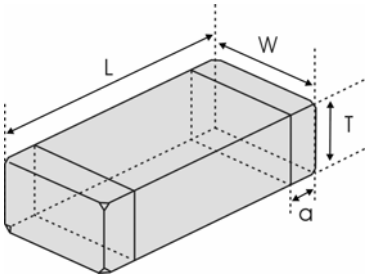
⑧

包装 Packing	
B	散装 Bulk Package
T	编带 Tape & Reel

⑨

无有害物质产品 Hazardous Substance Free Products
F

外观尺寸



SHAPE AND DIMENSIONS

Unit: mm [inch]

Type	L	W	T	a
SDV1005 [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]
SDV1608 [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]
SDV2012 [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]
SDV3216 [1206]	3.2±0.2 [.126±.008]	1.6±0.2 [.063±.008]	0.85±0.2 [.033±.008]	0.5±0.3 [.020±.012]

规格特性 SPECIFICATIONS

SDV1005A TYPE

Part Number 型号	Max. Working Voltage 最大工作电压		Varistor Voltage 压敏电压	Max. Clamping Voltage 限制电压	Rated Single Pulse Transient 额定脉冲耐量		Typical Capacitance 电容
Test Condition 测试条件	<20μA		@1mA DC	8/20μs	Energy 10/1000μs	Peak Current 8/20μs	@0.5V_{rms}, 1MHz
	DC	AC RMS					
Units 单位	Volts	Volts	Volts	Volts	Joules	Amps	pF
Symbol 符号	V_{WDC}	V_{WAC}	V_B	V_C*	E_T	I_P	C
SDV1005A5R5C181	5.5	4.0	10.0-14.0	18.0	0.05	20	180
SDV1005A5R5C231	5.5	4.0	10.0-14.0	18.0	0.05	20	230
SDV1005A5R5C361	5.5	4.0	10.0-14.0	18.0	0.05	20	360
SDV1005A090C121	9.0	6.4	11.0-16.0	20.0	0.05	20	120
SDV1005A090C151	9.0	6.4	11.0-16.0	20.0	0.05	20	150
SDV1005A090C231	9.0	6.4	11.0-16.0	20.0	0.05	20	230
SDV1005A140C121	14.0	10.0	16.0-22.0	30.0	0.05	20	120
SDV1005A140C161	14.0	10.0	16.0-22.0	30.0	0.05	20	160

SDV1608A TYPE

Part Number 型号	Max. Working Voltage 最大工作电压		Varistor Voltage 压敏电压	Max. Clamping Voltage 限制电压	Rated Single Pulse Transient 额定脉冲耐量		Typical Capacitance 电容
Test Condition 测试条件	<20μA		@1mA DC	8/20μs	Energy 10/1000μs	Peak Current 8/20μs	@0.5V_{rms}, 1MHz
	DC	AC RMS					
Units 单位	Volts	Volts	Volts	Volts	Joules	Amps	pF
Symbol 符号	V_{WDC}	V_{WAC}	V_B	V_C*	E_T	I_P	C
SDV1608A5R5C121	5.5	4.0	10.0-14.0	18.0	0.1	30	120
SDV1608A5R5C141	5.5	4.0	10.0-14.0	18.0	0.1	30	140
SDV1608A5R5C231	5.5	4.0	10.0-14.0	18.0	0.1	30	230
SDV1608A5R5C361	5.5	4.0	10.0-14.0	18.0	0.1	30	360
SDV1608A5R5C551	5.5	4.0	10.0-14.0	18.0	0.1	30	550
SDV1608A5R5C821	5.5	4.0	10.0-14.0	18.0	0.1	30	820
SDV1608A090C121	9.0	6.4	11.0-16.0	20	0.1	30	120
SDV1608A090C141	9.0	6.4	11.0-16.0	20	0.1	30	140
SDV1608A090C231	9.0	6.4	11.0-16.0	20	0.1	30	230
SDV1608A090C361	9.0	6.4	11.0-16.0	20	0.1	30	360
SDV1608A090C551	9.0	6.4	11.0-16.0	20	0.1	30	550
SDV1608A090C821	9.0	6.4	11.0-16.0	20	0.1	30	820
SDV1608A140C121	14.0	10.0	16.0-22.0	30	0.1	30	120
SDV1608A140C141	14.0	10.0	16.0-22.0	30	0.1	30	140
SDV1608A140C251	14.0	10.0	16.0-22.0	30	0.1	30	250
SDV1608A140C361	14.0	10.0	16.0-22.0	30	0.1	30	360
SDV1608A140C551	14.0	10.0	16.0-22.0	30	0.1	30	550
SDV1608A180C121	18.0	12.7	22.0-28.0	40	0.1	30	120
SDV1608A180C141	18.0	12.7	22.0-28.0	40	0.1	30	140
SDV1608A180C231	18.0	12.7	22.0-28.0	40	0.1	30	230
SDV1608A180C361	18.0	12.7	22.0-28.0	40	0.1	30	360
SDV1608A260C121	26.0	18.4	31.0-38.0	58	0.1	30	120
SDV1608A260C161	26.0	18.4	31.0-38.0	58	0.1	30	160
SDV1608A300C121	30.0	21.3	37.0-46.0	65	0.1	30	120
SDV1608A300C141	30.0	21.3	37.0-46.0	65	0.1	30	140

规格特性 SPECIFICATIONS

SDV2012A TYPE

Part Number 型号	Max. Working Voltage 最大工作电压		Varistor Voltage 压敏电压	Max. Clamping Voltage 限制电压	Rated Single Pulse Transient 额定脉冲耐量		Typical Capacitance 电容
Test Condition 测试条件	<20μA		@1mA DC	8/20μs	Energy 10/1000μs	Peak Current 8/20μs	@0.5V_{rms}, 1MHz
	DC	AC RMS					
Units 单位	Volts	Volts	Volts	Volts	Joules	Amps	pF
Symbol 符号	V_{WDC}	V_{WAC}	V_B	V_C*	E_T	I_P	C
SDV2012A5R5C121	5.5	4.0	10.0-14.0	15.5	0.1	30	120
SDV2012A5R5C242	5.5	4.0	10.0-14.0	15.5	0.3	100	2400
SDV2012A090C121	9.0	6.4	11.0-16.0	20	0.1	30	120
SDV2012A090C162	9.0	6.4	11.0-16.0	20	0.3	100	1600
SDV2012A140C121	14.0	10.0	16.0-22.0	30	0.1	30	120
SDV2012A140C821	14.0	10.0	16.0-22.0	30	0.3	100	820
SDV2012A180C121	18.0	12.7	22.0-28.0	40	0.1	40	120
SDV2012A180C501	18.0	12.8	22.0-28.0	40	0.3	100	500
SDV2012A260C191	26.0	18.4	31.0-38.0	58	0.1	40	190
SDV2012A300C121	30.0	21.3	37.0-46.0	65	0.1	40	120

SDV3216A TYPE.

Part Number 型号	Max. Working Voltage 最大工作电压		Varistor Voltage 压敏电压	Max. Clamping Voltage 限制电压	Rated Single Pulse Transient 额定脉冲耐量		Typical Capacitance 电容
Test Condition 测试条件	<20μA		@1mA DC	8/20μs	Energy 10/1000μs	Peak Current 8/20μs	@0.5V_{rms}, 1MHz
	DC	AC RMS					
Units 单位	Volts	Volts	Volts	Volts	Joules	Amps	pF
Symbol 符号	V_{WDC}	V_{WAC}	V_B	V_C*	E_T	I_P	C
SDV3216A5R5C251	5.5	4.0	10.0-14.0	15.5	0.05	20	250
SDV3216A5R5C202	5.5	4.0	10.0-14.0	15.5	0.4	150	2000
SDV3216A090C211	9.0	6.4	11.0-16.0	20	0.05	20	210
SDV3216A090C162	9.0	6.4	11.0-16.0	20	0.4	150	1600
SDV3216A140C181	14.0	10.0	16.0-22.0	30	0.05	20	180
SDV3216A140C901	14.0	10.0	16.0-22.0	30	0.4	150	900
SDV3216A180C631	18.0	12.7	22.0-28.0	40	0.4	120	635
SDV3216A260C451	26.0	18.4	31.0-38.0	58	0.4	120	450
SDV3216A300C401	30.0	21.3	37.0-46.0	65	0.4	120	400
SDV3216A480C181	48.0	34.1	54.0-67.0	100	0.4	100	180

※Vc (SDV-A Series): Maximum peak voltage across the varistor measured at a specified pulse current and waveform.

Energy Rating	Pulse & Waveform
0.005 -0.05 Joule	1A, 8/20μs
0.10 Joule	2A, 8/20μs
0.20-0.50 Joule	5A, 8/20μs

※: Products with other electrical characteristics can be provided upon customer's request. Please contact your local sales.

规格特性 SPECIFICATIONS

SDV1005E TYPE

Part Number 型号	Max. Working Voltage 最大工作电压		Varistor Voltage 压敏电压	Max. ESD Clamping Voltage* 限制电压	Max. Leakage Current 漏电流		Typical Capacitance 电容
Test Condition 测试条件	<20μA		@1mA DC	@45A/ 15KV	At Applied Voltage	Applied Voltage	@0.5Vrms 1MHz
	DC	AC RMS					
Units 单位	Volts	Volts	Volts	Volts	μA	Volts	pF
Symbol 符号	V_{WDC}	V_{WAC}	V_B	V_C*	I_L	V_{DC}	C
SDV1005E5R5C180	5.5	4.0	10.0-14.0	18	2	4.4	18
SDV1005E5R5C300	5.5	4.0	10.0-14.0	18	2	4.4	30
SDV1005E5R5C500	5.5	4.0	10.0-14.0	18	2	4.4	50
SDV1005E5R5C800	5.5	4.0	10.0-14.0	18	2	4.4	80
SDV1005E5R5C101	5.5	4.0	10.0-14.0	18	2	4.4	100
SDV1005E090C180	9.0	6.4	11.0-16.0	20	2	7	18
SDV1005E090C300	9.0	6.4	11.0-16.0	20	2	7	30
SDV1005E090C500	9.0	6.4	11.0-16.0	20	2	7	50
SDV1005E090C800	9.0	6.4	11.0-16.0	20	2	7	80
SDV1005E090C101	9.0	6.4	11.0-16.0	20	2	7	100
SDV1005E140C180	14.0	10.0	16.0-22.0	22	2	12	18
SDV1005E140C300	14.0	10.0	16.0-22.0	22	2	12	30
SDV1005E140C500	14.0	10.0	16.0-22.0	22	2	12	50
SDV1005E140C800	14.0	10.0	16.0-22.0	22	2	12	80
SDV1005E140C101	14.0	10.0	16.0-22.0	22	2	12	100
SDV1005E180C180	18.0	12.7	22.0-28.0	23	2	15	18
SDV1005E180C300	18.0	12.7	22.0-28.0	23	2	15	30
SDV1005E180C500	18.0	12.7	22.0-28.0	23	2	15	50
SDV1005E180C800	18.0	12.7	22.0-28.0	23	2	15	80
SDV1005E180C101	18.0	12.7	22.0-28.0	23	2	15	100
SDV1005E260C180	26.0	18.4	31.0-38.0	23	2	21	18
SDV1005E260C300	26.0	18.4	31.0-38.0	23	2	21	30
SDV1005E260C500	26.0	18.4	31.0-38.0	23	2	21	50

SDV1608E TYPE

Part Number 型号	Max. Working Voltage 最大工作电压		Varistor Voltage 压敏电压	Max. ESD Clamping Voltage* 限制电压	Max. Leakage Current 漏电流		Typical Capacitance 电容
Test Condition 测试条件	<20μA		@1mA DC	@45A/ 15KV	At Applied Voltage	Applied Voltage	@0.5Vrms 1MHz
	DC	AC RMS					
Units 单位	Volts	Volts	Volts	Volts	μA	Volts	pF
Symbol 符号	V_{WDC}	V_{WAC}	V_B	V_C*	I_L	V_{DC}	C
SDV1608E5R5C180	5.5	4.0	10.0-14.0	18	2	4.4	18
SDV1608E5R5C300	5.5	4.0	10.0-14.0	18	2	4.4	30
SDV1608E5R5C500	5.5	4.0	10.0-14.0	18	2	4.4	50
SDV1608E5R5C800	5.5	4.0	10.0-14.0	18	2	4.4	80
SDV1608E5R5C101	5.5	4.0	10.0-14.0	18	2	4.4	100
SDV1608E090C180	9.0	6.4	11.0-16.0	20	2	7	18
SDV1608E090C300	9.0	6.4	11.0-16.0	20	2	7	30
SDV1608E090C500	9.0	6.4	11.0-16.0	20	2	7	50
SDV1608E090C800	9.0	6.4	11.0-16.0	20	2	7	80
SDV1608E090C101	9.0	6.4	11.0-16.0	20	2	7	100
SDV1608E140C180	14.0	10.0	16.0-22.0	22	2	12	18
SDV1608E140C300	14.0	10.0	16.0-22.0	22	2	12	30
SDV1608E140C500	14.0	10.0	16.0-22.0	22	2	12	50
SDV1608E140C800	14.0	10.0	16.0-22.0	22	2	12	80

规格特性 SPECIFICATIONS

SDV1608E TYPE

Part Number 型号	Max. Working Voltage 最大工作电压		Varistor Voltage 压敏电压	Max. ESD Clamping Voltage* 限制电压	Max. Leakage Current 漏电流		Typical Capacitance 电容
Test Condition 测试条件	<20μA		@1mA DC	@45A/ 15KV	At Applied Voltage	Applied Voltage	@0.5Vrms 1MHz
	DC	AC RMS					
Units 单位	Volts	Volts	Volts	Volts	μ A	Volts	pF
Symbol 符号	V_{WDC}	V_{WAC}	V_B	V_C*	I_L	V_{DC}	C
SDV1608E140C101	14.0	10.0	16.0-22.0	22	2	12	100
SDV1608E180C180	18.0	12.7	22.0-28.0	23	2	15	18
SDV1608E180C300	18.0	12.7	22.0-28.0	23	2	15	30
SDV1608E180C600	18.0	12.7	22.0-28.0	23	2	15	60
SDV1608E180C800	18.0	12.7	22.0-28.0	23	2	15	80
SDV1608E180C101	18.0	12.7	22.0-28.0	23	2	15	100
SDV1608E260C180	26.0	18.4	31.0-38.0	23	2	21	18
SDV1608E260C300	26.0	18.4	31.0-38.0	23	2	21	30
SDV1608E260C500	26.0	18.4	31.0-38.0	23	2	21	50

SDV2012E TYPE

Part Number 型号	Max. Working Voltage 最大工作电压		Varistor Voltage 压敏电压	Max. ESD Clamping Voltage* 限制电压	Max. Leakage Current 漏电流		Typical Capacitance 电容
Test Condition 测试条件	<20μA		@1mA DC	@45A/ 15KV	At Applied Voltage	Applied Voltage	@0.5Vrms 1MHz
	DC	AC RMS					
Units 单位	Volts	Volts	Volts	Volts	μ A	Volts	pF
Symbol 符号	V_{WDC}	V_{WAC}	V_B	V_C*	I_L	V_{DC}	C
SDV2012E5R5C180	5.5	4.0	10.0-14.0	18	2	4.4	18
SDV2012E180C101	18.0	12.7	22.0-28.0	23	2	15	100
SDV2012E260C800	26.0	18.4	31.0-38.0	23	2	21	80
SDV2012E300C500	30.0	21.3	37.0-46.0	23	2	24	50

SDV1005H TYPE

Part Number 型号	Max. Working Voltage 最大工作电压		Varistor Voltage 压敏电压	Max. ESD Clamping Voltage* 限制电压	Max. Leakage Current 漏电流		Typical Capacitance 电容
Test Condition 测试条件	<20μA		@1mA DC	@45A/ 15KV	At Applied Voltage	Applied Voltage	@0.5Vrms 1MHz
	DC	AC RMS					
Units 单位	Volts	Volts	Volts	Volts	μ A	Volts	pF
Symbol 符号	V_{WDC}	V_{WAC}	V_B	V_C*	I_L	V_{DC}	C
SDV1005H140C100	14.0	10.0	16.0-22.0	22	2	12	10
SDV1005H140C120	14.0	10.0	16.0-22.0	22	2	12	12
SDV1005H180C050	18.0	12.7	22.0-28.0	23	1	15	5
SDV1005H260C010	26.0	18.4	>100	23	2	21	1
SDV1005H260C100	26.0	18.4	31.0-38.0	23	2	21	10
SDV1005H260C120	26.0	18.4	31.0-38.0	23	2	21	12

规格特性 SPECIFICATIONS

SDV1608H TYPE

Part Number 型号	Max. Working Voltage 最大工作电压		Varistor Voltage 压敏电压	Max. ESD Clamping Voltage* 限制电压	Max. Leakage Current 漏电流		Typical Capacitance 电容
Test Condition 测试条件	<20μA		@1mA DC	@45A/ 15KV	At Applied Voltage	Applied Voltage	@0.5Vrms 1MHz
	DC	AC RMS					
Units 单位	Volts	Volts	Volts	Volts	μ A	Volts	pF
Symbol 符号	V_{WDC}	V_{WAC}	V_B	V_C*	I_L	V_{DC}	C
SDV1608H140C100	14.0	10.0	16.0-22.0	22	2	12	10
SDV1608H140C120	14.0	10.0	16.0-22.0	22	2	12	12
SDV1608H180C050	18.0	12.7	22.0-28.0	23	1	15	5
SDV1608H180C120	18.0	12.7	22.0-28.0	23	2	15	12
SDV1608H260C100	26.0	18.4	31.0-38.0	23	2	21	10
SDV1608H260C120	26.0	18.4	31.0-38.0	23	2	21	12

SDV1005S TYPE

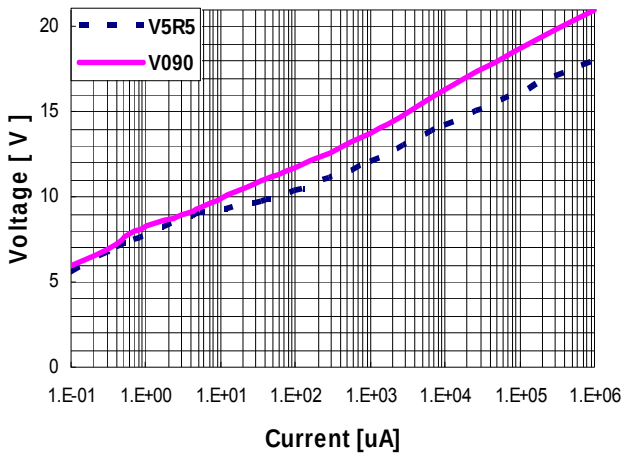
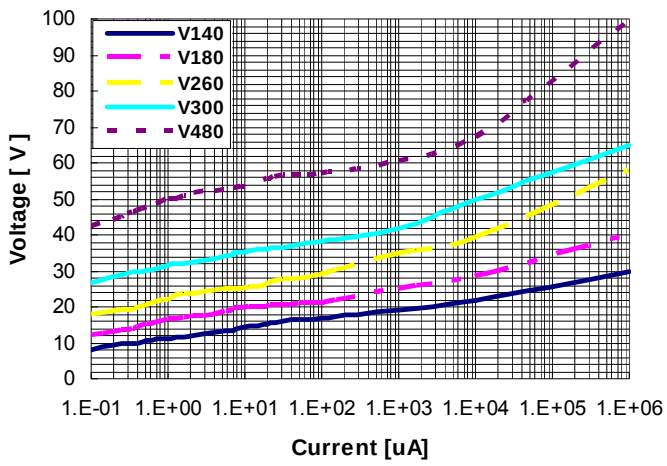
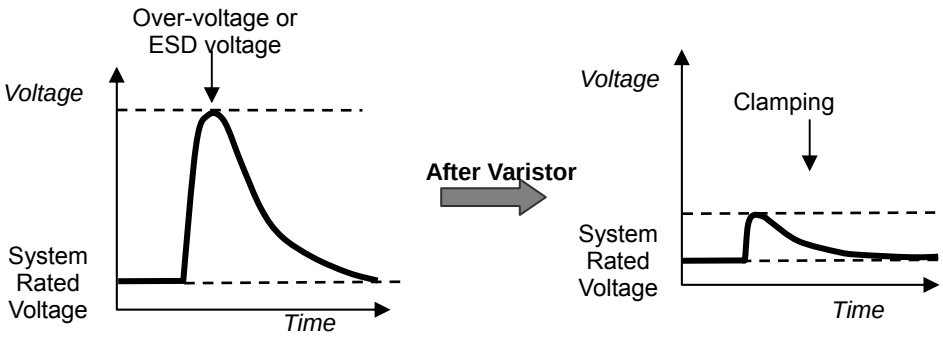
Part Number 型号	Max. Working Voltage 最大工作电压		Varistor Voltage 压敏电压	Max. ESD Clamping Voltage* 限制电压	Max. Leakage Current 漏电流		Typical Capacitance 电容
Test Condition 测试条件	<20μA		@1mA DC	@45A/ 15KV	At Applied Voltage	Applied Voltage	@0.5Vrms 1MHz
	DC	AC RMS					
Units 单位	Volts	Volts	Volts	Volts	μ A	Volts	pF
Symbol 符号	V_{WDC}	V_{WAC}	V_B	V_C*	I_L	V_{DC}	C
SDV1005S5R5C010	5.5	4.0	＞100	23	1	4.4	1
SDV1005S5R5C020	5.5	4.0	＞100	23	1	4.4	2
SDV1005S5R5C030	5.5	4.0	31.0-38.0	23	1	4.4	3
SDV1005S5R5C050	5.5	4.0	22.0-28.0	23	1	4.4	5
SDV1005S5R5C100	5.5	4.0	22.0-28.0	23	1	4.4	10
SDV1005S5R5C120	5.5	4.0	22.0-28.0	23	1	4.4	12
SDV1005S090C010	9.0	6.4	＞100	23	1	7.0	1
SDV1005S090C020	9.0	6.4	＞100	23	1	7.0	2
SDV1005S090C030	9.0	6.4	31.0-38.0	23	1	7.0	3
SDV1005S090C050	9.0	6.4	22.0-28.0	23	1	7.0	5
SDV1005S090C100	9.0	6.4	22.0-28.0	23	1	7.0	10
SDV1005S090C120	9.0	6.4	22.0-28.0	23	1	7.0	12
SDV1005S140C010	14.0	10.0	＞100	23	1	12	1
SDV1005S140C020	14.0	10.0	＞100	23	1	12	2
SDV1005S140C030	14.0	10.0	31.0-38.0	23	1	12	3
SDV1005S140C050	14.0	10.0	22.0-28.0	23	1	12	5
SDV1005S180C010	18.0	12.7	＞100	23	1	15	1
SDV1005S180C020	18.0	12.7	＞100	23	1	15	2
SDV1005S180C030	18.0	12.7	31.0-38.0	23	1	15	3

规格特性 SPECIFICATIONS

SDV1608S TYPE

Part Number 型号	Max. Working Voltage 最大工作电压		Varistor Voltage 压敏电压	Max. ESD Clamping Voltage* 限制电压	Max. Leakage Current 漏电流		Typical Capacitance 电容
Test Condition 测试条件	<20μA		@1mA DC	@45A/ 15KV	At Applied Voltage	Applied Voltage	@0.5Vrms 1MHz
	DC	AC RMS					
Units 单位	Volts	Volts	Volts	Volts	μ A	Volts	pF
Symbol 符号	V_{WDC}	V_{WAC}	V_B	V_C*	I_L	V_{DC}	C
SDV1608S5R5C010	5.5	4.0	＞100	23	1	4.4	1
SDV1608S5R5C020	5.5	4.0	＞100	23	1	4.4	2
SDV1608S5R5C030	5.5	4.0	31.0-38.0	23	1	4.4	3
SDV1608S5R5C050	5.5	4.0	22.0-28.0	23	1	4.4	5
SDV1608S5R5C100	5.5	4.0	22.0-28.0	23	1	4.4	10
SDV1608S090C010	9.0	6.4	＞100	23	1	7.0	1
SDV1608S090C020	9.0	6.4	＞100	23	1	7.0	2
SDV1608S090C030	9.0	6.4	31.0-38.0	23	1	7.0	3
SDV1608S090C050	9.0	6.4	22.0-28.0	23	1	7.0	5
SDV1608S090C100	9.0	6.4	22.0-28.0	23	1	7.0	10
SDV1608S140C010	14.0	10.0	＞100	23	1	12	1
SDV1608S140C020	14.0	10.0	＞100	23	1	12	2
SDV1608S140C030	14.0	10.0	31.0-38.0	23	1	12	3
SDV1608S140C050	14.0	10.0	22.0-28.0	23	1	12	5
SDV1608S180C010	18.0	12.7	＞100	23	1	15	1
SDV1608S180C020	18.0	12.7	＞100	23	1	15	2
SDV1608S180C030	18.0	12.7	31.0-38.0	23	1	15	3

※ Vc (SDV-E/H/S Series):Tested in air discharge mode at which the device stabilized during the transition from high to low impedance at 30ns after initiation of pulse based on IEC61000-4-2.

※: Products with other electrical characteristics can be provided upon customer's request. Please contact your local sales.

电气特性 TYPICAL ELECTRICAL CHARACTERISTICS