Transient Voltage Suppressor

Features

- IEC 61000-4-2(ESD)±15KV(air), ±8KV(contact)
- 1500Watts peak pulse power (tp=10/1000μS)
- Quick response to surge voltage
- Low clamping voltage
- Moisture sensitivity level: Level 1

Exterior



SMC

Application information

- DC Port
- RS485/232/422
- I/O Port

Agency Approvals

Icon	Description
RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

Schematic symbol



BI-directional

cathode  anode

UNI-directional

Part Number and Electrical Parameter

Part Number		Marking		Reverse Stand off Voltage V_R(V)	V_{BR} min.(V)	V_{BR} max.(V)	It (mA)	Max Vc@I_{PP}①(V)	Max Peak Pulse Current I_{PP}①(A)	Max Reverse Leakage I_R@V_R (uA)
BI	UNI	BI	UNI							
BV-SMCJ5CA	BV-SMCJ5A	C5C	C5	5	6.4	7	10	9.2	163.0	800
BV-SMCJ6CA	BV-SMCJ6A	C6C	C6	6	6.67	7.37	10	10.3	145.7	800
BV-SMCJ6.5CA	BV-SMCJ6.5A	C6.5C	C6.5	6.5	7.22	7.98	10	11.2	134.0	500
BV-SMCJ7CA	BV-SMCJ7A	C7C	C7	7	7.78	8.6	10	12	125.0	200
BV-SMCJ7.5CA	BV-SMCJ7.5A	C7.5C	C7.5	7.5	8.33	9.21	1	12.9	116.3	100
BV-SMCJ8CA	BV-SMCJ8A	C8C	C8	8	8.89	9.83	1	13.6	110.3	50
BV-SMCJ8.5CA	BV-SMCJ8.5A	C8.5C	C8.5	8.5	9.44	10.4	1	14.4	104.2	20
BV-SMCJ9CA	BV-SMCJ9A	C9C	C9	9	10	11.1	1	15.4	97.4	10
BV-SMCJ10CA	BV-SMCJ10A	C10C	C10	10	11.1	12.3	1	17	88.3	5
BV-SMCJ11CA	BV-SMCJ11A	C11C	C11	11	12.2	13.5	1	18.2	82.5	1
BV-SMCJ12CA	BV-SMCJ12A	C12C	C12	12	13.3	14.7	1	19.9	75.4	1
BV-SMCJ13CA	BV-SMCJ13A	C13C	C13	13	14.4	15.9	1	21.5	69.8	1
BV-SMCJ14CA	BV-SMCJ14A	C14C	C14	14	15.6	17.2	1	23.2	64.7	1

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BI	UNI	BI	UNI							
BV-SMCJ15CA	BV-SMCJ15A	C15C	C15	15	16.7	18.5	1	24.4	61.5	1
BV-SMCJ16CA	BV-SMCJ16A	C16C	C16	16	17.8	19.7	1	26	57.7	1
BV-SMCJ17CA	BV-SMCJ17A	C17C	C17	17	18.9	20.9	1	27.6	54.4	1
BV-SMCJ18CA	BV-SMCJ18A	C18C	C18	18	20	22.1	1	29.2	51.4	1
BV-SMCJ20CA	BV-SMCJ20A	C20C	C20	20	22.2	24.5	1	32.4	46.3	1
BV-SMCJ22CA	BV-SMCJ22A	C22C	C22	22	24.4	26.9	1	35.5	42.3	1
BV-SMCJ24CA	BV-SMCJ24A	C24C	C24	24	26.7	29.5	1	38.9	38.6	1
BV-SMCJ26CA	BV-SMCJ26A	C26C	C26	26	28.9	31.9	1	42.1	35.7	1
BV-SMCJ28CA	BV-SMCJ28A	C28C	C28	28	31.1	34.4	1	45.4	33.1	1
BV-SMCJ30CA	BV-SMCJ30A	C30C	C30	30	33.3	36.8	1	48.4	31.0	1
BV-SMCJ33CA	BV-SMCJ33A	C33C	C33	33	36.7	40.6	1	53.3	28.2	1
BV-SMCJ36CA	BV-SMCJ36A	C36C	C36	36	40	44.2	1	58.1	25.9	1
BV-SMCJ40CA	BV-SMCJ40A	C40C	C40	40	44.4	49.1	1	64.5	23.3	1
BV-SMCJ43CA	BV-SMCJ43A	C43C	C43	43	47.8	52.8	1	69.4	21.7	1
BV-SMCJ45CA	BV-SMCJ45A	C45C	C45	45	50	55.3	1	72.7	20.6	1
BV-SMCJ48CA	BV-SMCJ48A	C48C	C48	48	53.3	58.9	1	77.4	19.4	1
BV-SMCJ51CA	BV-SMCJ51A	C51C	C51	51	56.7	62.7	1	82.4	18.2	1
BV-SMCJ54CA	BV-SMCJ54A	C54C	C54	54	60	66.3	1	87.1	17.3	1
BV-SMCJ58CA	BV-SMCJ58A	C58C	C58	58	64.4	71.2	1	93.6	16.1	1
BV-SMCJ60CA	BV-SMCJ60A	C60C	C60	60	66.7	73.7	1	96.8	15.5	1
BV-SMCJ64CA	BV-SMCJ64A	C64C	C64	64	71.1	78.6	1	103	14.6	1
BV-SMCJ70CA	BV-SMCJ70A	C70C	C70	70	77.8	86	1	113	13.3	1
BV-SMCJ75CA	BV-SMCJ75A	C75C	C75	75	83.3	92.1	1	121	12.4	1
BV-SMCJ78CA	BV-SMCJ78A	C78C	C78	78	86.7	95.8	1	126	11.9	1
BV-SMCJ85CA	BV-SMCJ85A	C85C	C85	85	94.4	104	1	137	11.0	1
BV-SMCJ90CA	BV-SMCJ90A	C90C	C90	90	100	111	1	146	10.3	1
BV-SMCJ100CA	BV-SMCJ100A	C100C	C100	100	111	123	1	162	9.3	1
BV-SMCJ110CA	BV-SMCJ110A	C110C	C110	110	122	135	1	177	8.5	1

Note:absolute maximum ratings measured at T= 25°C RH = 45%-75% (unless otherwise noted).

①Surge Waveform: 10/1000 μ S

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Mark



BI:CXXC



UNI:CXX

Part Number System

BV SMCJ XX C A

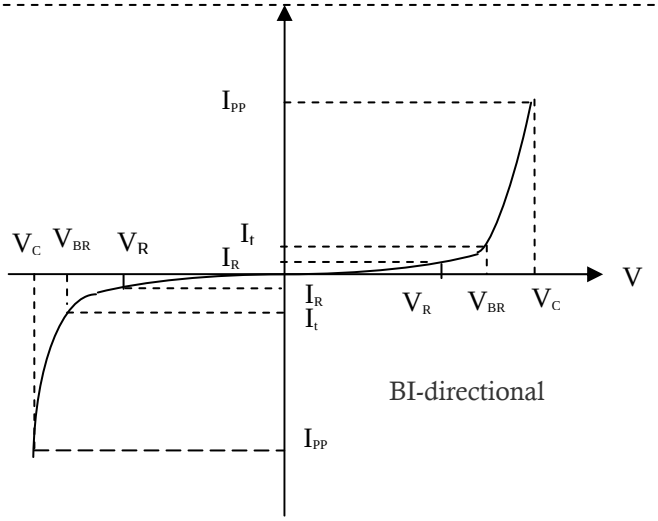
(1) (2) (3) (4) (5)

(1) Bencent Transient Voltage Suppressor (2) SMC Package

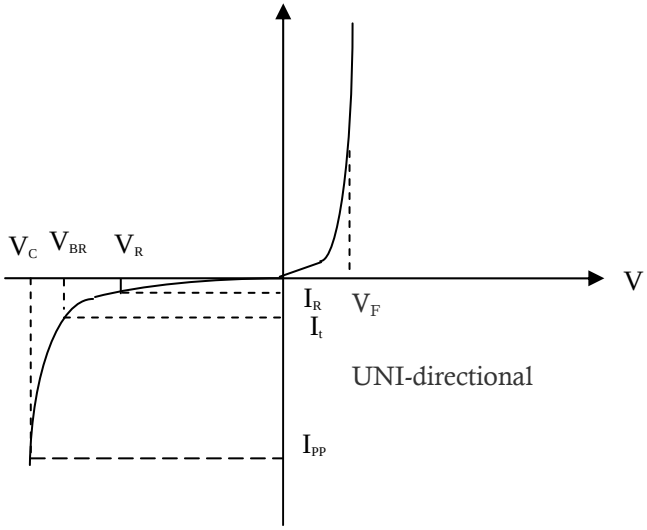
(3) V_R=XXV (4) BI-directional

(5) Suffix 'A' denotes 5% tolerance devices

V-I Curve



BI-directional



UNI-directional

Parameters	Definition
V_F	Forward Voltage drop for UNI-directional
V_C	Clamping Voltage
Ipp	Surge Waveform 10/1000 μ s
V_R	Stand-off Voltage
V_{BR}	Breakdown Voltage
I_R	Reverse Leakage Current
It	Test Current
Ppp	Peak Pulse Power Dissipation

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Thermal Considerations

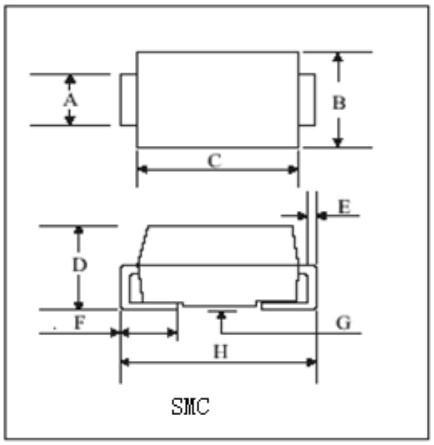
symbol	Parameter	Value	Unit
T_J	Operating Junction Temperature Range	-55 to +150	℃
T_S	Storage Temperature Range	-55 to +150	℃

Environmental Characteristics

Testing items	Technical standards
High Temperature Reverse Bias Test	Temperature: 150±3℃ Bias=80%V_R Time:168H
High Temperature Life Test	Temperature: 150℃ Time:168H
High-low Temperature Cycle Test	Temperature: From -40℃ to125℃ Dwell time ： 30min,10cycles
High Temperature &High Humidity Test	Temperature: 85℃ Humidity:85% Time:168H
Pressure Cooker Test	Temperature: 121℃，2atm. Humidity:100% Time:24H
Resistance of Soldering Heat	Temperature: 260±5℃ Time of dip soldering：10s，3times

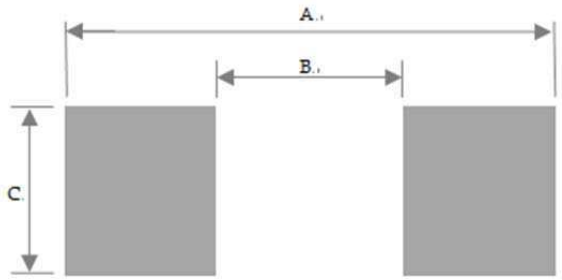
Note: The above testing items can be specified by customer's special request

Product Dimensions



REF	mm	inch
A	2.85--3.05	0.112--0.120
B	5.85--6.15	0.230--0.242
C	6.75--7.05	0.266--0.278
D	2.45--2.95	0.096--0.116
E	0.15—0.25	0.006--0.012
F	0.90--1.60	0.035--0.063
G	0.00—0.40	0.000--0.016
H	7.75--8.25	0.305--0.325

Recommended Soldering Pad



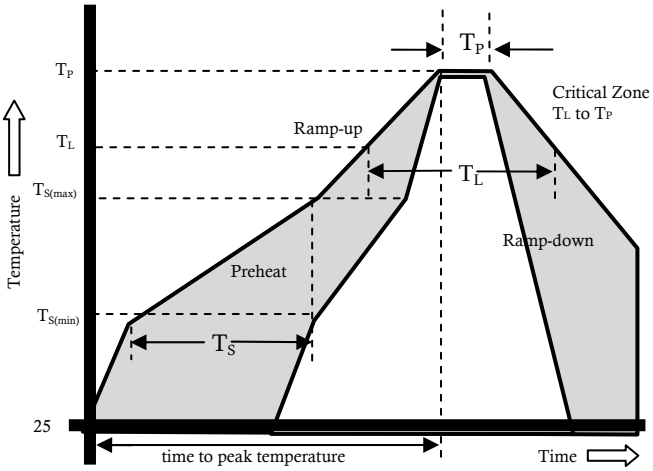
REF	mm	inch
A	8.25	0.325
B	5.05	0.199
C	3.05	0.12

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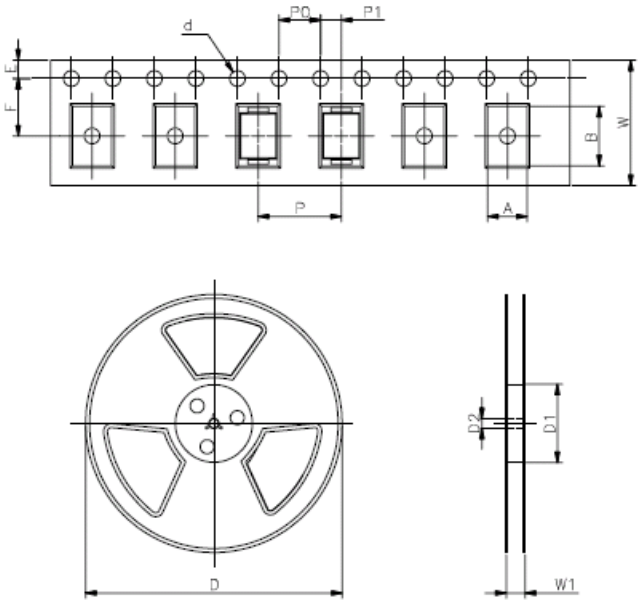
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Reflow Profile

Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time （min to max）	60 – 180 secs
Average ramp up rate（Liquidus）Tamp（T_L） to peak		3°C/s max
T_S(max) to T_L - Ramp-up Rate		3°C/s max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Temperature (T_L)	60 – 150 secs
Peak Temperature (T_P)		260+0/-5 °C
Time within 5°C of actual peak Temperature (T_P)		30secs
Ramp-down Rate		6°C/s max
Time 25°C to peak Temperature (T_P)		8 min max.
Do not exceed		260°C



Package Reel Information



REF.	mm	inch
A	6.15+/-0.1	0.242+/-0.004
B	8.2+/-0.1	0.323+/0-.004
d	1.5+/-0.05	0.059+/-0.002
D	330.0+/-1	13.0+/-0.039
D1	72+/-3	2.835+/-0.118
D2	13+/-0.3	0.512+/-0.012
E	1.75+/-0.1	0.069+/-0.004
F	5.5+/-0.05	0.212+/-0.002
P	8.0+/-0.1	0.315+/-0.004
P0	4.0+/-0.1	0.157+/-0.004
P1	2.0+/-0.05	0.079+/-0.004
W	16+/-0.1	0.630+/-0.004
W1	22+/-2.0	0.866+/-0.079

Outline	Reel (pcs)	Per Carton (pcs)	Reel Diameters (mm)	Carton Size(mm)		
				L	W	H
Taping	3,000	24,000	330	360	360	380

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