Transient Voltage Suppressor

Features

- IEC 61000-4-2(ESD)±15KV(air), ±8KV(contact)
- 3000Watts peak pulse power (tp=10/1000μS)
- Quick response to surge voltage
- Low clamping voltage
- Moisture sensitivity level: Level 1

Exterior

SMD

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-SMDJ5CA	BV-SMDJ5A	D5C	D5	5	6.4	7	10	9.2	326.1	800
BV-SMDJ6CA	BV-SMDJ6A	D6C	D6	6	6.67	7.37	10	10.3	291.3	800
BV-SMDJ6.5CA	BV-SMDJ6.5A	D6.5C	D6.5	6.5	7.22	7.98	10	11.2	267.9	500
BV-SMDJ7CA	BV-SMDJ7A	D7C	D7	7	7.78	8.6	10	12	250.0	200
BV-SMDJ7.5CA	BV-SMDJ7.5A	D7.5C	D7.5	7.5	8.33	9.21	1	12.9	232.6	100
BV-SMDJ8CA	BV-SMDJ8A	D8C	D8	8	8.89	9.83	1	13.6	220.6	50
BV-SMDJ8.5CA	BV-SMDJ8.5A	D8.5C	D8.5	8.5	9.44	10.4	1	14.4	208.3	20
BV-SMDJ9CA	BV-SMDJ9A	D9C	D9	9	10	11.1	1	15.4	194.8	10
BV-SMDJ10CA	BV-SMDJ10A	D10C	D10	10	11.1	12.3	1	17	176.5	5
BV-SMDJ11CA	BV-SMDJ11A	D11C	D11	11	12.2	13.5	1	18.2	164.8	1
BV-SMDJ12CA	BV-SMDJ12A	D12C	D12	12	13.3	14.7	1	19.9	150.8	1
BV-SMDJ13CA	BV-SMDJ13A	D13C	D13	13	14.4	15.9	1	21.5	139.5	1

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BI	UNI	BI	UNI							
BV-SMDJ14CA	BV-SMDJ14A	D14C	D14	14	15.6	17.2	1	23.2	129.3	1
BV-SMDJ15CA	BV-SMDJ15A	D15C	D15	15	16.7	18.5	1	24.4	123.0	1
BV-SMDJ16CA	BV-SMDJ16A	D16C	D16	16	17.8	19.7	1	26	115.4	1
BV-SMDJ17CA	BV-SMDJ17A	D17C	D17	17	18.9	20.9	1	27.6	108.7	1
BV-SMDJ18CA	BV-SMDJ18A	D18C	D18	18	20	22.1	1	29.2	102.7	1
BV-SMDJ20CA	BV-SMDJ20A	D20C	D20	20	22.2	24.5	1	32.4	92.6	1
BV-SMDJ22CA	BV-SMDJ22A	D22C	D22	22	24.4	26.9	1	35.5	84.5	1
BV-SMDJ24CA	BV-SMDJ24A	D24C	D24	24	26.7	29.5	1	38.9	77.1	1
BV-SMDJ26CA	BV-SMDJ26A	D26C	D26	26	28.9	31.9	1	42.1	71.3	1
BV-SMDJ28CA	BV-SMDJ28A	D28C	D28	28	31.1	34.4	1	45.4	66.1	1
BV-SMDJ30CA	BV-SMDJ30A	D30C	D30	30	33.3	36.8	1	48.4	62.0	1
BV-SMDJ33CA	BV-SMDJ33A	D33C	D33	33	36.7	40.6	1	53.3	56.3	1
BV-SMDJ36CA	BV-SMDJ36A	D36C	D36	36	40	44.2	1	58.1	51.6	1
BV-SMDJ40CA	BV-SMDJ40A	D40C	D40	40	44.4	49.1	1	64.5	46.5	1
BV-SMDJ43CA	BV-SMDJ43A	D43C	D43	43	47.8	52.8	1	69.4	43.2	1
BV-SMDJ45CA	BV-SMDJ45A	D45C	D45	45	50	55.3	1	72.7	41.3	1
BV-SMDJ48CA	BV-SMDJ48A	D48C	D48	48	53.3	58.9	1	77.4	38.8	1
BV-SMDJ51CA	BV-SMDJ51A	D51C	D51	51	56.7	62.7	1	82.4	36.4	1
BV-SMDJ54CA	BV-SMDJ54A	D54C	D54	54	60	66.3	1	87.1	34.4	1
BV-SMDJ58CA	BV-SMDJ58A	D58C	D58	58	64.4	71.2	1	93.6	32.1	1
BV-SMDJ60CA	BV-SMDJ60A	D60C	D60	60	66.7	73.7	1	96.8	31.0	1
BV-SMDJ64CA	BV-SMDJ64A	D64C	D64	64	71.1	78.6	1	103	29.1	1
BV-SMDJ70CA	BV-SMDJ70A	D70C	D70	70	77.8	86	1	113	26.5	1
BV-SMDJ75CA	BV-SMDJ75A	D75C	D75	75	83.3	92.1	1	121	24.8	1
BV-SMDJ78CA	BV-SMDJ78A	D78C	D78	78	86.7	95.8	1	126	23.8	1
BV-SMDJ85CA	BV-SMDJ85A	D85C	D85	85	94.4	104	1	137	21.9	1
BV-SMDJ90CA	BV-SMDJ90A	D90C	D90	90	100	111	1	146	20.5	1
BV-SMDJ100CA	BV-SMDJ100A	D100C	D100	100	111	123	1	162	18.5	1
BV-SMDJ110CA	BV-SMDJ110A	D110C	D110	110	122	135	1	177	16.9	1

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

①Surge Waveform: 10/1000 μ S

Transient Voltage Suppressor

Mark

BI:DXXC

cathode

anode

UNI:DXX

Part Number System

BV SMDJ XX C A

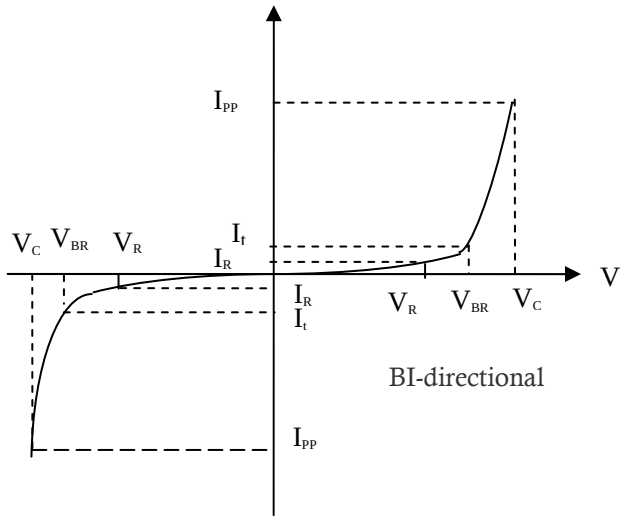
(1) (2) (3) (4) (5)

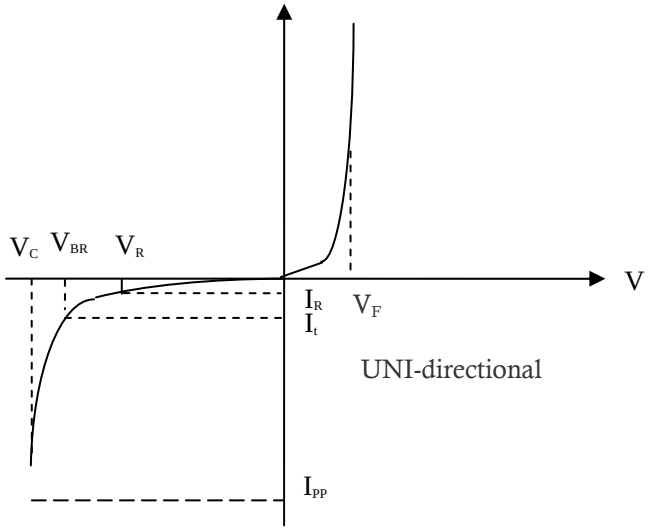
(1) Bencent Transient Voltage Suppressor (2)SMD Package

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

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

V-I Curve





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

Transient Voltage Suppressor

Thermal Considerations

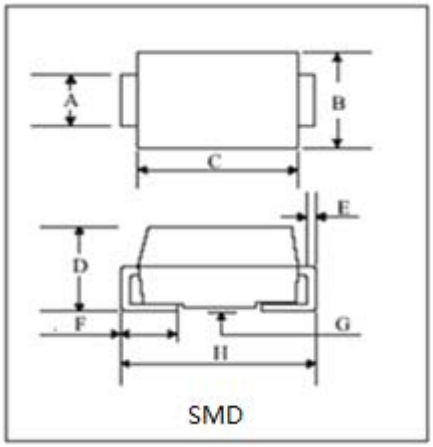
symbol	Parameter	Value	Unit
T_J	Operating Junction Temperature Range	-55 to +150	℃
T_S	Storage Temperature Range	-55 to +150	℃

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

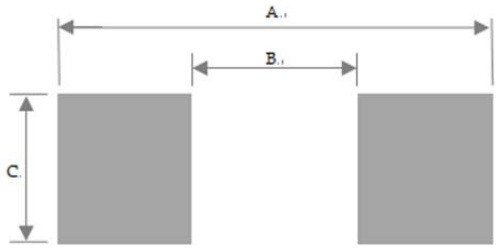
Note: The above testing items can be specified by customer's special request

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	0.152--0.305	0.006--0.012
F	0.9--1.6	0.035--0.063
G	0.203	0.008
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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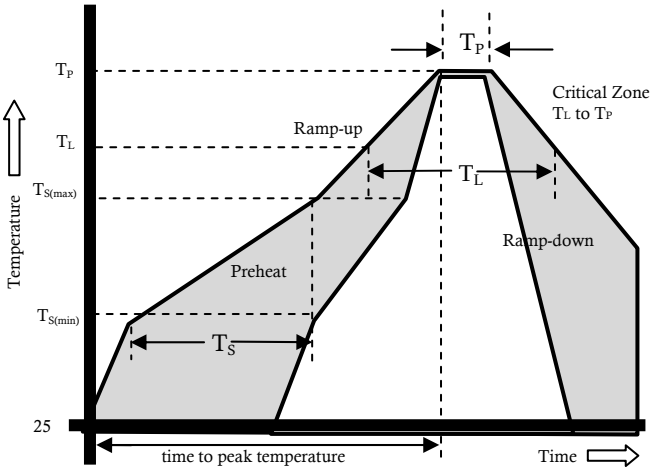
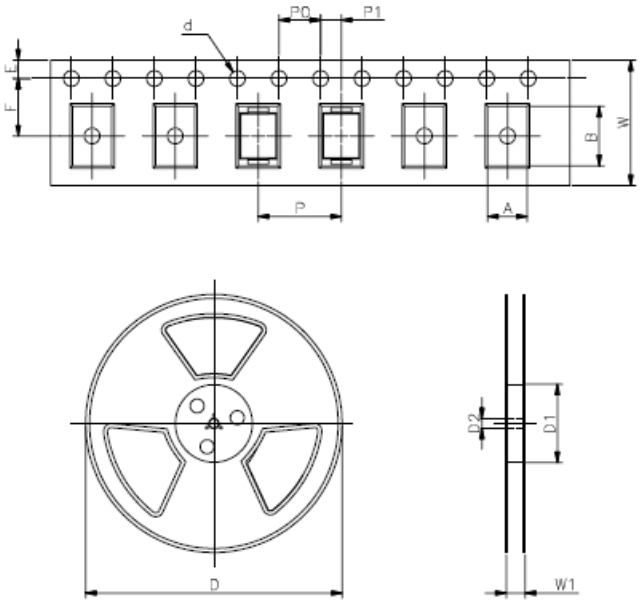
Reflow Profile

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	13.0
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