

## Transient Voltage Suppressor

### Features

- IEC 61000-4-2 (ESD)  $\pm 30\text{KV}$  (air),  $\pm 30\text{KV}$  (contact)
- IEC61000-4-5 (Lightning) 23A (8/20 $\mu\text{S}$ )
- IEC61000-4-4 (EFT) 40A (5/50nS)
- 500Watts peak pulse power ( $t_p=8/20\mu\text{S}$ )
- Low clamping voltage
- Moisture sensitivity level: Level 1
- Weight 5.0 mg (Approximate)
- Small package: SOD323

### Exterior



SOD323


### Application Information

- Cell phone handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants(PDA's)
- Notebooks,Desktops,and Servers
- Portable Instrumentation
- Networking and Telecom
- Serial and Parallel Ports
- Peripherals

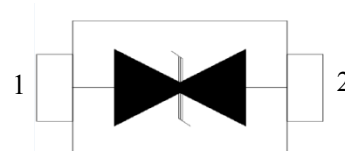
### Package (top view)



### Agency Approvals

Icon	Description
<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003
	Mean lead free

### Schematic



### Part Number and Electrical Parameter

Part Number	$I_{\text{DRM}}@V_{\text{DRM}}$		$V_{\text{BR}}^{(1)}@I_{\text{R}}$		$V_{\text{c}}@I_{\text{pp}}^{(2)}$		$V_{\text{c}}@I_{\text{pp}}^{(2)}$		$C_{\text{o}}^{(3)}$
	$\mu\text{A}$	V	V	mA	V	A	V	A	pF
	MAX		MIN		MAX		MAX		MAX
BV-D305ZCD	1	5	6	1	9.8	1	20	23	40

Absolute maximum ratings measured at  $T = 25^{\circ}\text{C}$  RH = 45%-75% (unless otherwise noted).

- ①  $V_{\text{BR}}$  is measured at  $I_{\text{R}}=1\text{mA}$
- ② Surge Waveform: 8/20 $\mu\text{S}$
- ③ Off-state capacitance is measured in  $V_{\text{DC}}=0\text{V}$ ,  $V_{\text{RMS}}=0.3\text{V}$ ,  $f=1\text{MHz}$

## Transient Voltage Suppressor

Part Numbering System

Mark

BV D3 05 Z C D  
(1) (2) (3) (4) (5) (6)

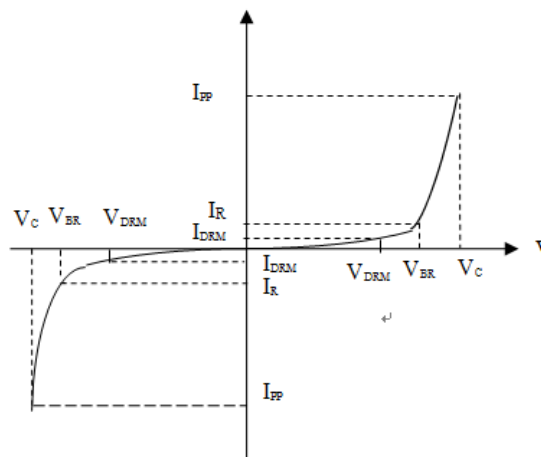
- (1) Bencent Transient Voltage Suppressor
- (2) Package: SOD323
- (3) Off-state Voltage: 5V
- (4) Normal Capacitance
- (5) Bi-directional
- (6) Bencent internal code



2B: Part Number

### V-I Curve

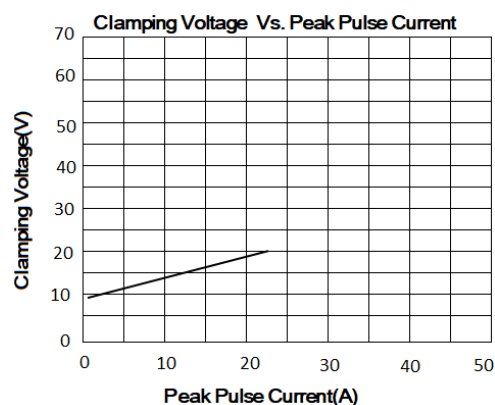
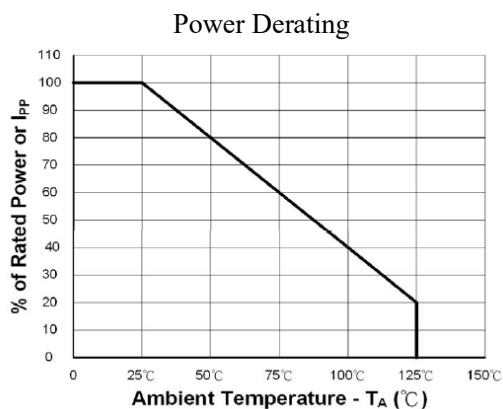
Parameters	Definition
$V_C$	Clamping voltage
$I_{PP}$	Surge waveform 8/20 $\mu$ s
$V_{DRM}$	Stand-off Voltage
$V_{BR}$	Breakdown Voltage
$I_{DRM}$	Reverse Leakage Current
$I_R$	Test current
$P_{PP}$	Peak Pulse Power Dissipation



### Thermal Considerations

symbol	Parameter	Value	Unit
$T_J$	Operating Junction Temperature Range	-55 to +150	$^{\circ}$ C
$T_S$	Storage Temperature Range	-55 to +150	$^{\circ}$ C

### Typical Characteristics



**Transient Voltage Suppressor**

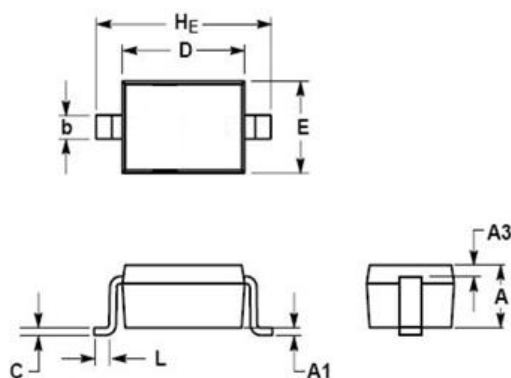
Version: A1 2020-10-14

Environmental Characteristics

Testing items	Technical standards
High temperature Reverse Bias Test	Temperature: $150\pm 3^{\circ}\text{C}$ Bias= $80\%V_{\text{DRM}}$ Time: 168H
High Temperature Life Test	Temperature: $150^{\circ}\text{C}$ Time: 168H
High-low Temperature Cycle test	Temperature: From $-55^{\circ}\text{C}$ to $150^{\circ}\text{C}$ Dwell time: 30min, 10cycles
High Temperature & High Humidity Test	Temperature: $85^{\circ}\text{C}$ Humidity: 85% Time: 168H
Pressure cooker Test	Temperature: $121^{\circ}\text{C}$ , 2atm. Humidity: 100% Time: 24H
Resistance of soldering heat	Temperature: $260\pm 5^{\circ}\text{C}$ Time of dip soldering: 10s, 3times

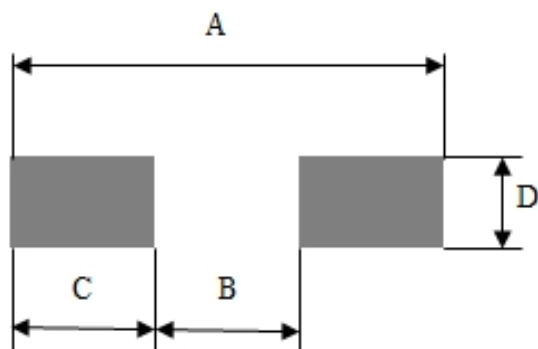
Note: The above testing items can be specified by customer's special request

Product Dimensions



REF	mm	inch
A	1.10(max)	0.043(max)
A1	0.00~0.10	0.000~0.004
A3	0.15REF	0.006REF
b	0.25~0.45	0.01~0.018
C	0.08~0.15	0.003~0.006
D	1.60~1.80	0.063~0.071
E	1.15~1.45	0.045~0.057
L	0.10~0.40	0.004~0.016
HE	2.30~2.70	0.091~0.106

Recommended Soldering Pad



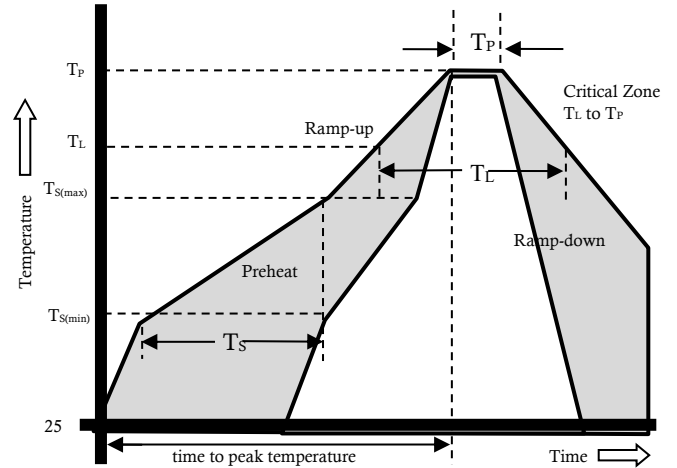
REF	mm	inch
A	3.2	0.126
B	1.08	0.043
C	1.06	0.042
D	0.54	0.021

Transient Voltage Suppressor

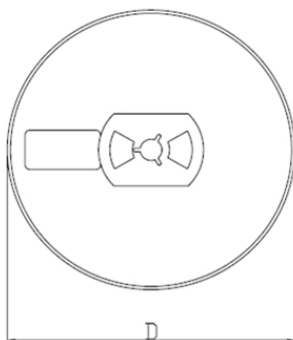
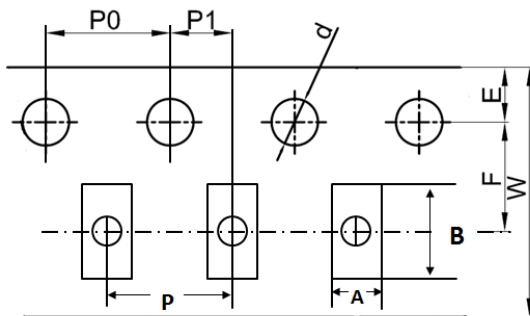
Version: A1 2020-10-14

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 (Liquid) Tamp (T <sub>L</sub> ) to peak		3°C/s max
T <sub>S</sub> (max) to T <sub>L</sub> - Ramp-up Rate		3°C/s max
Reflow	- Temperature (T <sub>L</sub> ) (Liquid)	217°C
	- Temperature (T <sub>L</sub> )	60 – 150 secs
Peak Temperature (T <sub>P</sub> )		260±0/-5 °C
Time within 5°C of actual peak Temperature (T <sub>P</sub> )		30secs
Ramp-down Rate		6°C/s max
Time 25°C to peak Temperature (T <sub>P</sub> )		8 mins max.
Do not exceed		260°C



Package Reel Information



REF	mm	inch
A	1.46+/-0.20	0.057+/-0.008
B	3.10+/-0.30	0.122+/-0.012
d	1.50+0.1/-0	0.059+0.004/-0
D	178.00+/-2.00	7.008+/-0.079
D1	55.00+/-3.00	2.165+/-0.118
D2	13.00+/-0.50	0.512+/-0.020
E	1.75+/-0.10	0.069+/-0.004
F	3.50+/-0.20	0.138+/-0.008
P	4.00+/-0.20	0.157+/-0.008
P0	4.00+/-0.20	0.157+/-0.008
P1	2.00+/-0.20	0.079+/-0.008
W	8.00+/-0.20	0.315+/-0.008
W1	9.50+/-1.00	0.374+/-0.039

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)	CARTON SIZE(mm)		
				L	W	H
TAPING	3,000	90,000	177	390	370	220

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:*

*Click to view products by [Bencent](#) manufacturer:*

Other Similar products are found below :

[60KS200C](#) [D18V0L1B2LP-7B](#) [D5V0F4U5P5-7](#) [NTE4902](#) [P4KE27CA](#) [P6KE11CA](#) [P6KE8.2A](#) [SA60CA](#) [SA64CA](#) [SMBJ12CATR](#)  
[SMBJ33CATR](#) [SMBJ6.5A](#) [SMBJ8.0A](#) [ESD101-B1-02ELS](#) [E6327](#) [ESD112-B1-02EL](#) [E6327](#) [ESD7451N2T5G](#) [19180-510](#) [CPDT-5V0USP-](#)  
[HF](#) [3.0SMCJ33CA-F](#) [3.0SMCJ36A-F](#) [HSPC16701B02TP](#) [JANTX1N6126A](#) [D3V3Q1B2DLP3-7](#) [D55V0M1B2WS-7](#) [SCM1293A-04SO](#)  
[ESD200-B1-CSP0201](#) [E6327](#) [SM12-7](#) [CEN955](#) [W/DATA](#) [VESD12A1A-HD1-GS08](#) [CPDQC5V0-HF](#) [D1213A-01LP4-7B](#) [ESD101-B1-02EL](#)  
[E6327](#) [AOZ8808DI-03](#) [5KP15A](#) [5KP48A](#) [5KP90A](#) [ESD3V3D7-TP](#) [15KPA36A-LF](#) [P4KE56CA](#) [P4KE68A](#) [P4KE91CATR](#) [P6KE120A](#)  
[P6KE13CA](#) [P6KE43CA](#) [P6KE6.8CA](#) [P6KE8.2](#) [P6SMBJ20CA](#) [JANTX1N6072A](#) [SR2835ESKG](#) [SA90CA](#)