

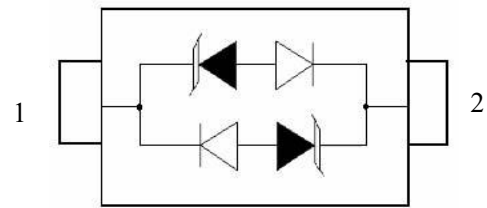
## Transient Voltage Suppressor

Version: A3 2021-12-19

### Features

- IEC 61000-4-2(ESD) ±30KV(air), ±30KV(contact)
- 289Watts peak pulse power (tp=8/20μS)
- Ultra low capacitance: 1.5pF maximum
- Low clamping voltage
- Moisture sensitivity level: Level 1
- Weight 5.0 mg
- Small package: SOD323

### Exterior




SOD323

### Application Information

- Ethernet

### Agency Approvals

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

### Part Number and Electrical Parameter

Part Number	I <sub>DRM</sub> @V <sub>DRM</sub>		V <sub>BR</sub> <sup>①</sup> @I <sub>R</sub>		V <sub>c</sub> @I <sub>pp</sub> <sup>②</sup>		V <sub>c</sub> @I <sub>pp</sub> <sup>②</sup>		C <sub>o</sub> <sup>③</sup>	
	μA	V	V	mA	V	A	V	A	pF	pF
	MAX		MIN		MAX		MAX		TYP	MAX
BV03CW	0.5	3	3.5	1	5.8	1	17	17	0.85	1.5

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

① V<sub>BR</sub> is measured at I<sub>R</sub>=1mA

② Surge Waveform: 8/20μS.

③ Off-state capacitance is measured in V<sub>DC</sub>=0V, V<sub>RMS</sub>=1V, f=1MHz

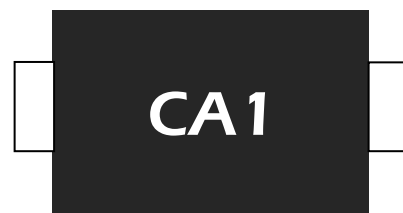
### Part Numbering System

BV            03CW  
(1)            (2)

(1) Bencent Transient Voltage Suppressor

(2) Series: 03 etc.

### Mark



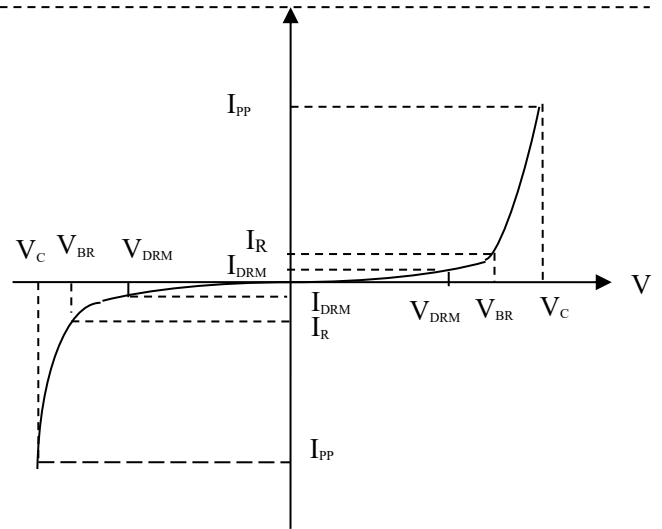
CA1: Part Number

## Transient Voltage Suppressor

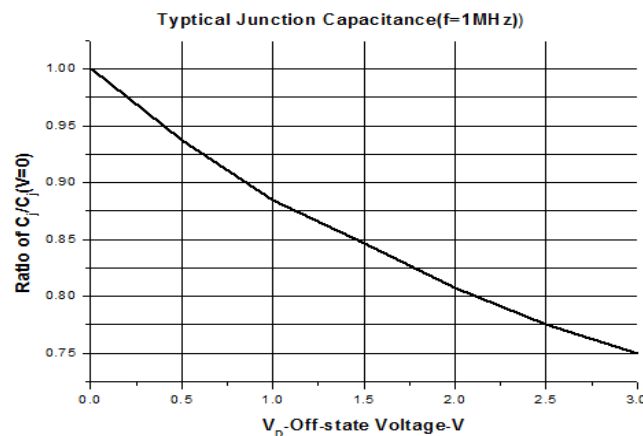
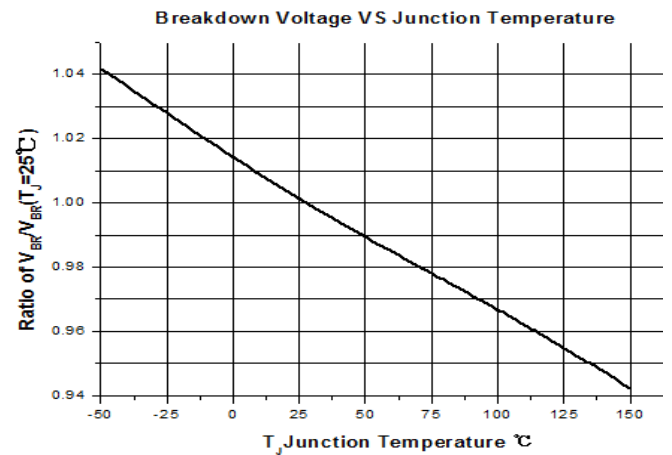
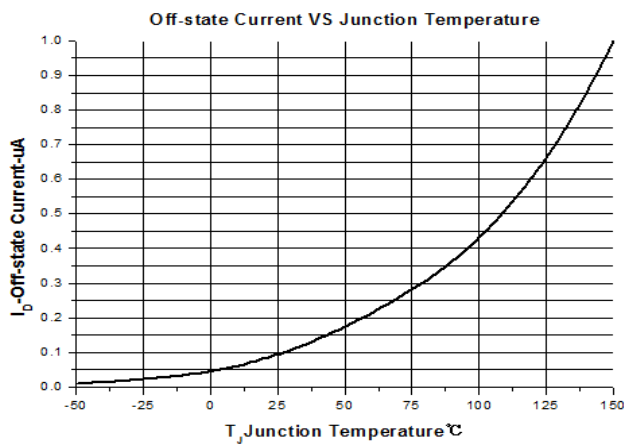
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### V-I Curve

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



### Typical Characteristics



### 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

**Transient Voltage Suppressor**

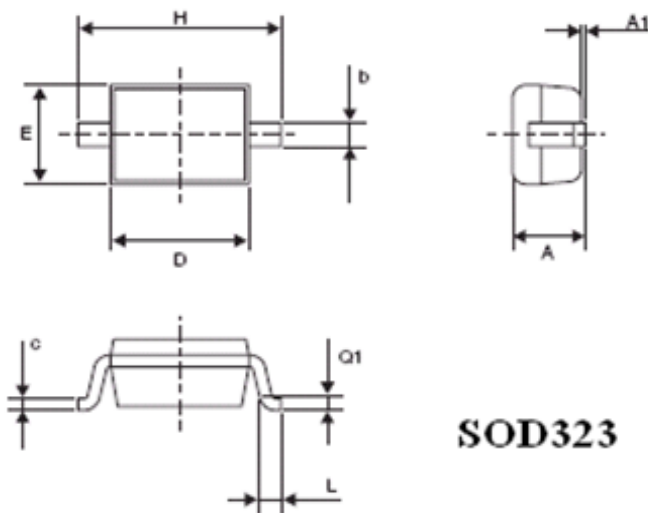
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Environmental Characteristics

Testing items	Technical standards
High temperature Reverse Bias Test	Temperature: 150±3°C Bias=80%V <sub>DRM</sub> Time:168H
High Temperature Life Test	Temperature: 150°C Time:168H
High-low Temperature Cycle test	Temperature: From -40°C to125°C Dwell time : 30min,10cycles
High Temperature &High Humidity Test	Temperature: 85°C Humidity:85% Time:168H
Pressure cooker Test	Temperature: 121°C, 2atm. Humidity:100% Time:24H
Resistance of soldering heat	Temperature: 260±5°C Time of dip soldering: 10s, 3times

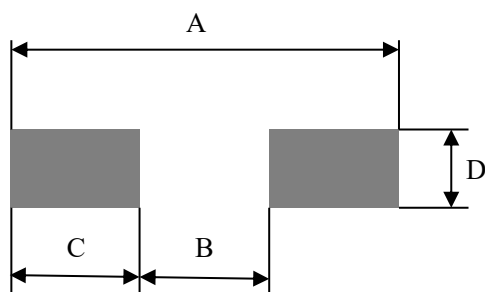
Note: The above testing items can be specified by customer's special request

Product Dimensions



REF	mm	inch
A	1.17(max)	0.046(max)
A1	0.10(max)	0.004(max)
b	0.34±0.10	0.013±0.0039
c	0.17±0.08	0.007±0.0032
D	1.66±0.14	0.065±0.0055
E	1.28±0.17	0.050±0.0067
H	2.5±0.2	0.098±0.0079
L	0.28±0.18	0.011±0.0071
Q1	0.25±0.15	0.010±0.0059

Recommended Soldering Pad



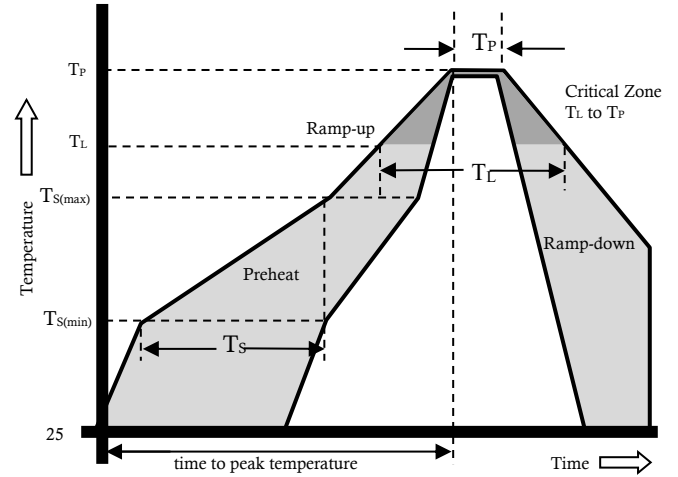
REF	mm	inch
A	3.20	0.126
B	1.08	0.043
C	1.06	0.042
D	0.54	0.021

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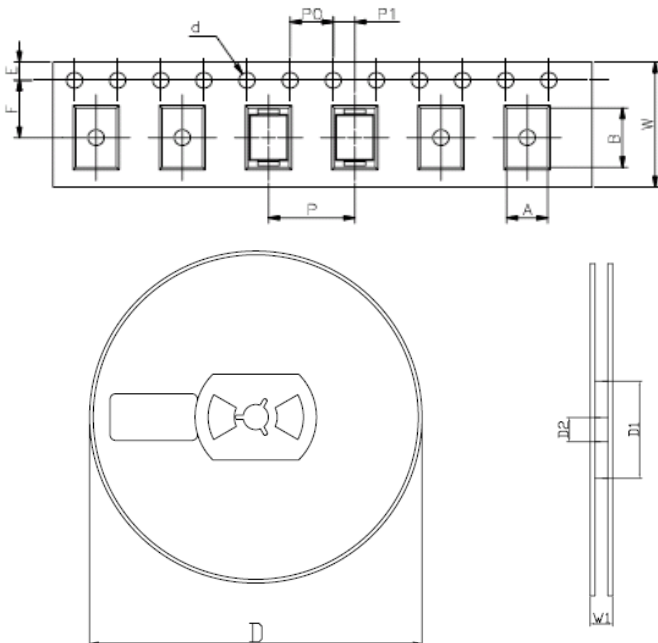
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### Reflow Profile

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 Temp( $T_L$ ) to peak)		3°C/sec. Max.
Ts(max) to $T_L$ - Ramp-up Rate		3°C/sec. Max.
Reflow	- Temperature ( $T_L$ ) (Liquidus)	+217°C
	- Temperature ( $T_L$ )	60 – 150 secs.
Peak Temp ( $T_P$ )		+(260±0/-5) °C
Time within 5°C of actual Peak Temp ( $T_P$ )		25 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp ( $T_P$ )		8 min. Max.
Do not exceed		+260°C



### Package Reel Information



REF	mm	inch
A	1.46+/-0.1	0.057+/-0.004
B	3.10+/-0.3	0.122+/-0.012
d	1.50+/-0.1	0.059+/-0.004
D	178+/-1.0	7.008+/-0.039
D1	55+/-3	2.165+/-0.118
D2	13+/-0.5	0.512+/-0.020
E	1.75+/-0.1	0.069+/-0.004
F	3.5+/-0.2	0.138+/-0.008
P	4.0+/-0.2	0.157+/-0.008
P0	4.0+/-0.2	0.157+/-0.008
P1	2.0+/-0.2	0.079+/-0.008
W	8.0+/-0.2	0.315+/-0.008
W1	12.3+/-1.0	0.484+/-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