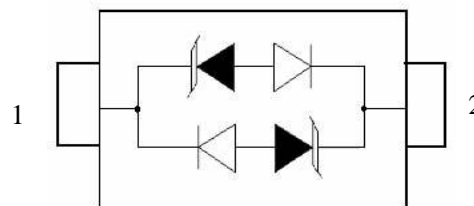


**Transient Voltage Suppressor**

Version: A1 2016-06-23

**Features**

- IEC 61000-4-2(ESD)  $\pm 25\text{KV}$ (air),  $\pm 25\text{KV}$ (contact)
- 150Watts peak pulse power ( $t_p=8/20\mu\text{s}$ )
- Ultra low capacitance: 1.5pF maximum
- Low clamping voltage
- Moisture sensitivity level: Level 1
- Weight 5.0mg
- Small package: SOD323


**Exterior**


SOD323

**Application information**

- xDSL

**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	$I_{\text{DRM}}@V_{\text{DRM}}$		$V_{\text{BR}}^{\text{①}}@I_{\text{R}}$		$V_{\text{c}}@I_{\text{pp}}^{\text{②}}$		$V_{\text{c}}@I_{\text{pp}}^{\text{②}}$		$C_{\text{o}}^{\text{③}}$
	$\mu\text{A}$	V	V	mA	V	A	V	A	pF
	MAX		MIN		MAX		MAX		MAX
BV05C	5	5	6	1	9.8	1	18.3	8	1.5

 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: 8/20us.

 ③ Off-state capacitance is measured in  $V_{\text{DC}}=0\text{V}, V_{\text{RMS}}=1\text{V}, f=1\text{MHz}$ .

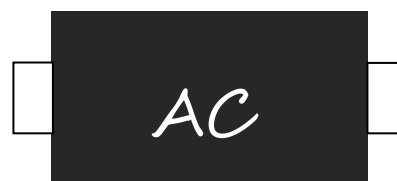
**Part Numbering System**

BV	05	C
(1)	(2)	(3)

(1) Bencent Transient Voltage Suppressor

(2) Series: 05 etc.

(3) Bidirectional TVS

**Mark**


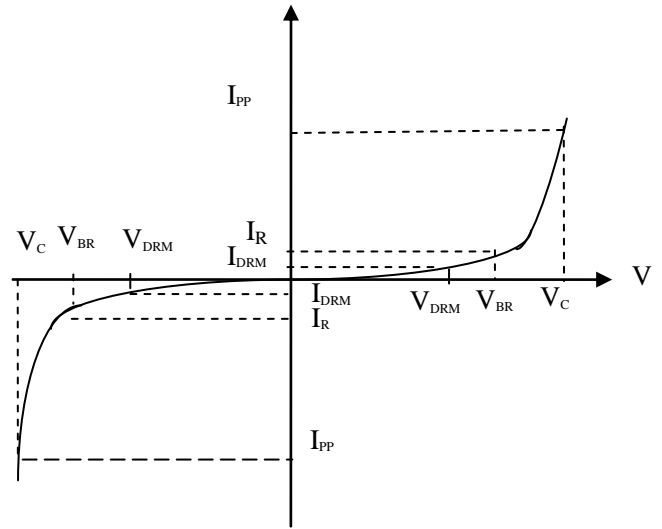
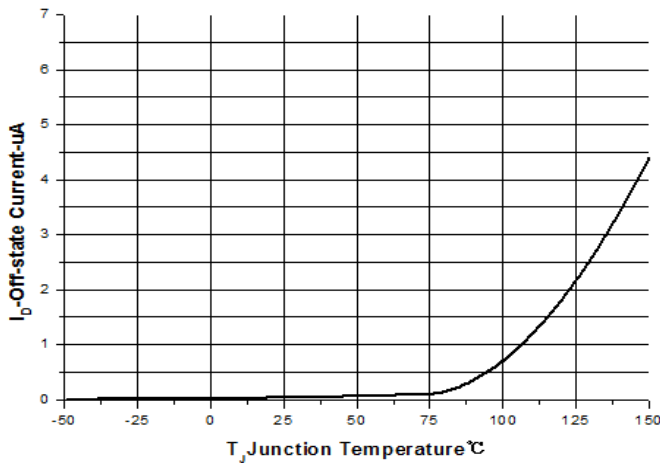
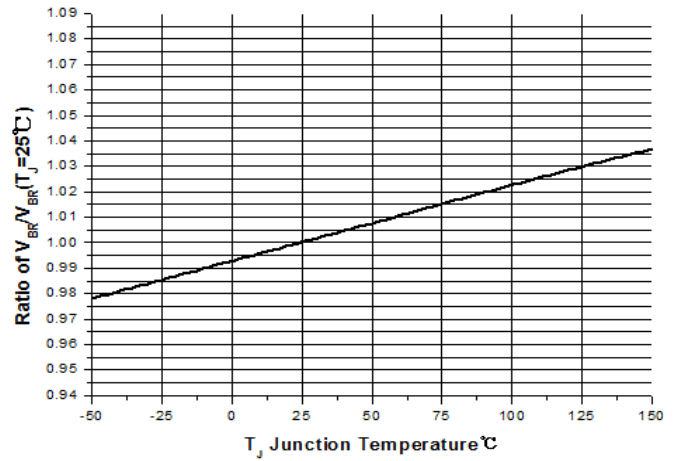
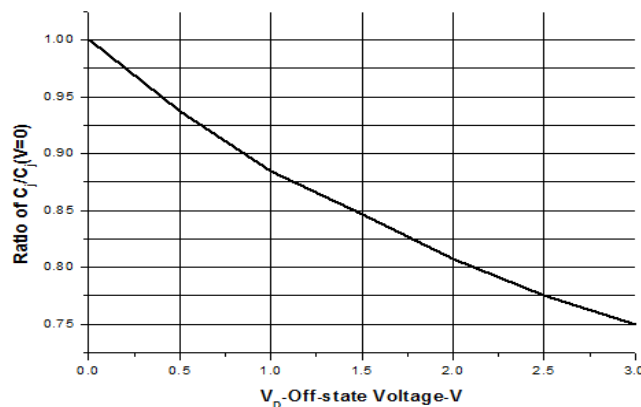
AC: Part Number

**Transient Voltage Suppressor**

Version: A1 2016-06-23

**V-I Curve**

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


**Typical Characteristics**
**Off-state Current VS Junction Temperature**

**Breakdown Voltage VS Junction Temperature**

**Typical Junction Capacitance(f=1MHz)**

**Thermal Considerations**

symbol	Parameter	Value	Unit
$T_j$	Operating Junction Temperature Range	-55 to +150	°C
$T_s$	Storage Temperature Range	-55 to +150	°C

**Transient Voltage Suppressor**

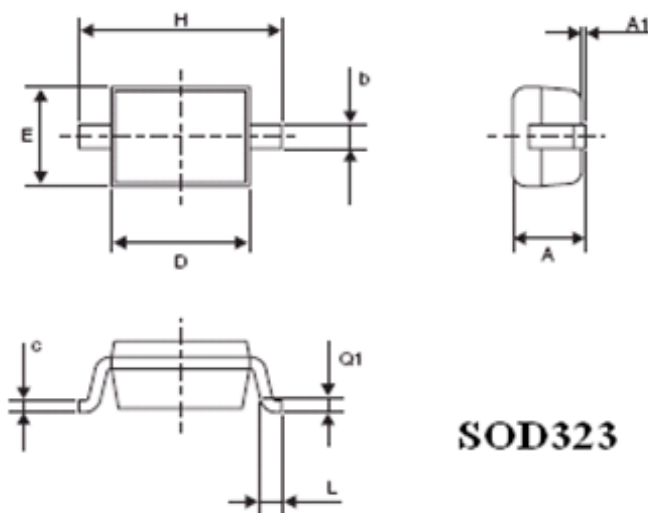
Version: A1 2016-06-23

## 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 $-40^\circ\text{C}$ to $125^\circ\text{C}$ 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

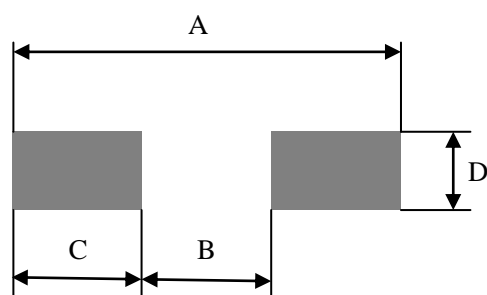
Note: The above testing items can be specified by customer's special request

## Product Dimensions



REF	mm	inch
A	1.17	0.046
A1	0.1	0.004
b	$0.34 \pm 0.10$	$0.013 \pm 0.0039$
c	$0.17 \pm 0.08$	$0.007 \pm 0.0032$
D	$1.66 \pm 0.14$	$0.065 \pm 0.0055$
E	$1.28 \pm 0.17$	$0.050 \pm 0.0066$
H	$2.5 \pm 0.2$	$0.098 \pm 0.0079$
L	$0.28 \pm 0.18$	$0.011 \pm 0.0071$
Q1	$0.25 \pm 0.15$	$0.010 \pm 0.0059$

## Recommended Soldering Pad



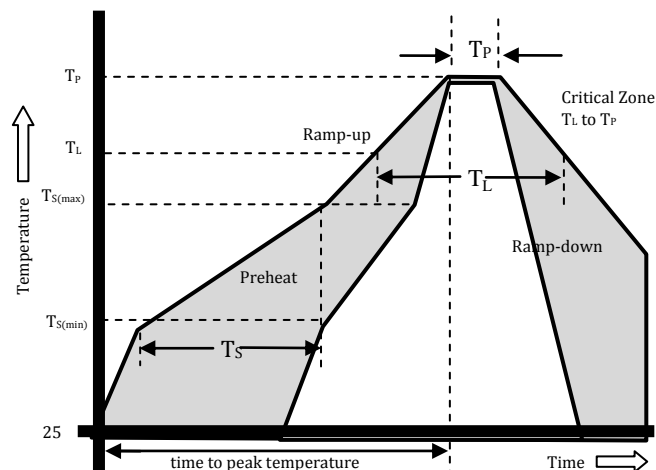
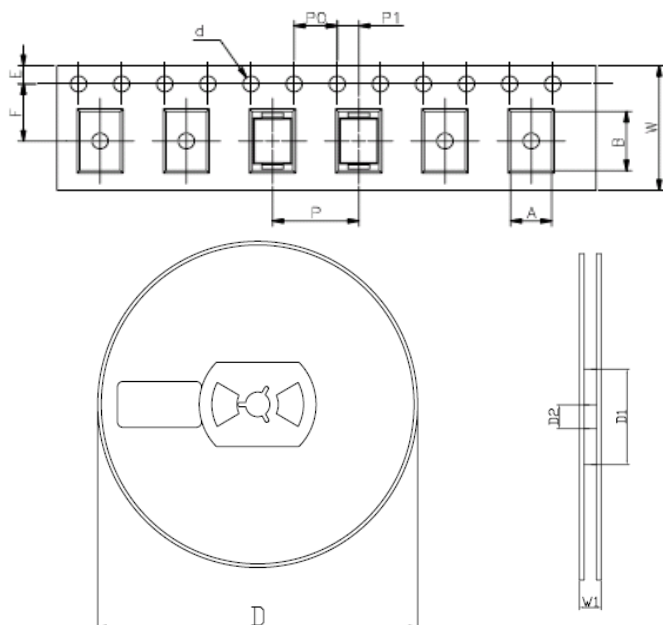
REF	mm	inch
A	3.20	0.126
B	1.08	0.043
C	1.06	0.042
D	0.54	0.021

**Transient Voltage Suppressor**

Version: A1 2016-06-23

**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) T <sub>amp</sub> (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> )		30 secs
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±0.1	0.057±0.004
B	2.9±0.1	0.114±0.004
d	1.25±0.1	0.049±0.004
D	178±1.0	7.01±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	0.158±0.008
P0	4.0±0.2	0.158±0.008
P1	2.0±0.2	0.079±0.008
W	8.0±0.2	0.315±0.008
W1	14.4±0.5	0.567±0.020

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)	CARTON SIZE(mm)		
				L	W	H
TAPING	3,000	90,000	177	360	370	220