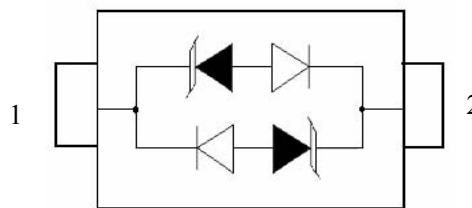


**Transient Voltage Suppressor**
**Features**

- IEC 61000-4-2(ESD) ±15KV(air), ±8KV(contact)
- 150Watts 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**

- 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	$I_{DRM}@V_{DRM}$		$V_{BR}^{\textcircled{1}}@I_R$		$V_C@I_{pp}^{\textcircled{2}}$		$V_C@I_{pp}^{\textcircled{2}}$		$C_o^{\textcircled{3}}$
	µA	V	V	mA	V	A	V	A	pF
	MAX		MIN		MAX		MAX		MAX
BV12C	1	12	13.3	1	19	1	28.6	6	1.5

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

①  $V_{BR}$  is measured at  $I_R=1mA$

② Surge Waveform: 8/20 µ S.

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

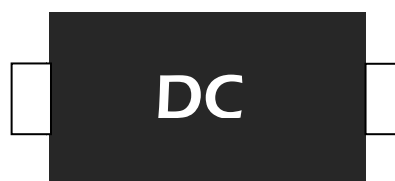
**Part Numbering System**

BV      12      C  
 (1)      (2)      (3)

(1) Bencent Transient Voltage Suppressor

(2) Series: 12 etc.

(3) Bidirectional TVS

**Mark**


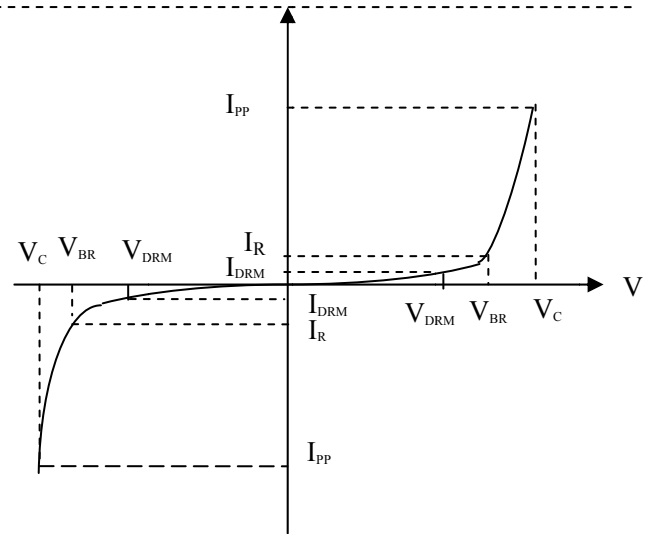
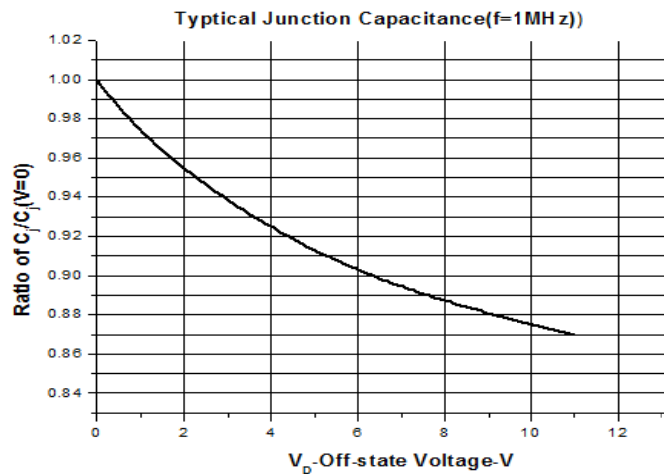
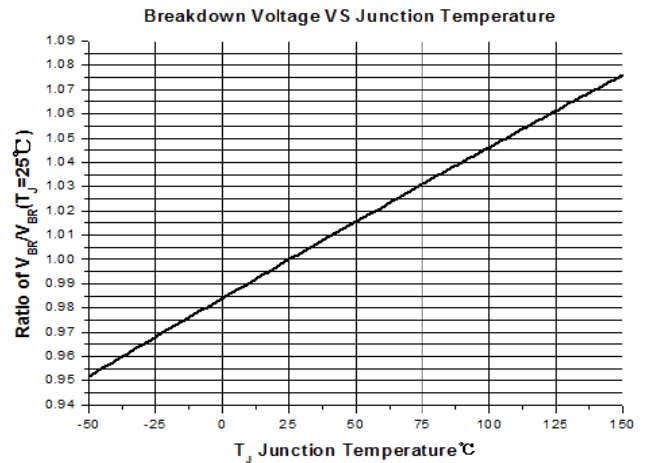
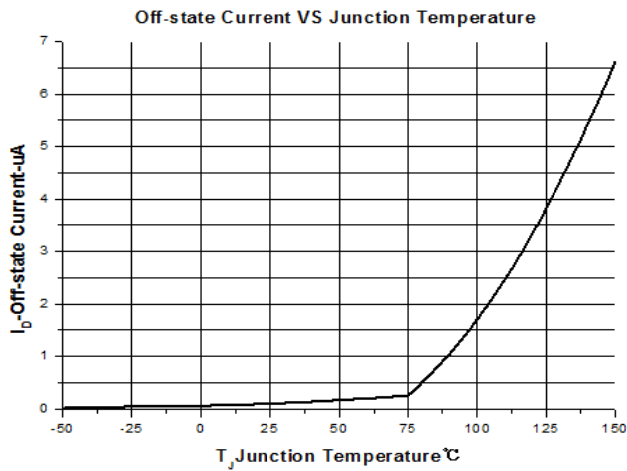
DC: Part Number

**Transient Voltage Suppressor**

Version: A0 2013-11-12

**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**

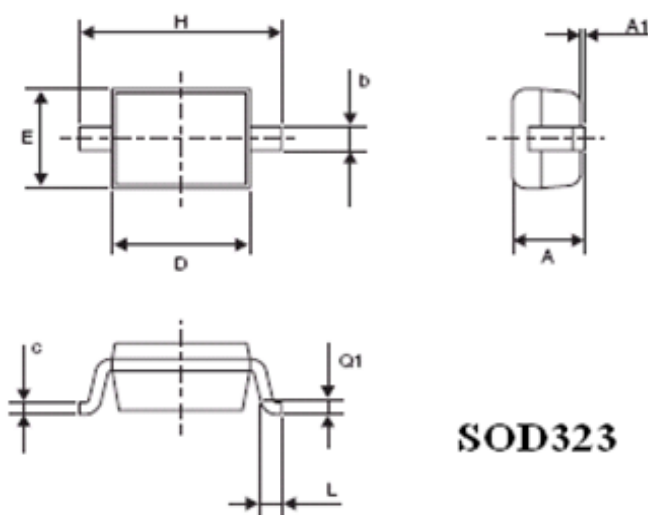
Version: A0 2013-11-12

## 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

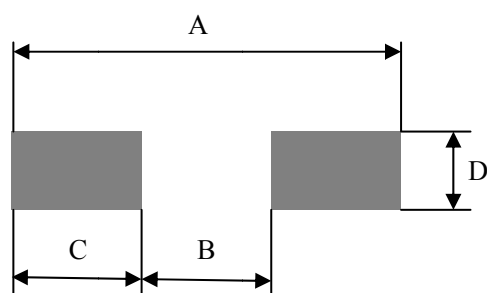
Note: The above testing items can be specified by customer's special request

## 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	$0.25\pm 0.15$	$0.010\pm 0.0059$

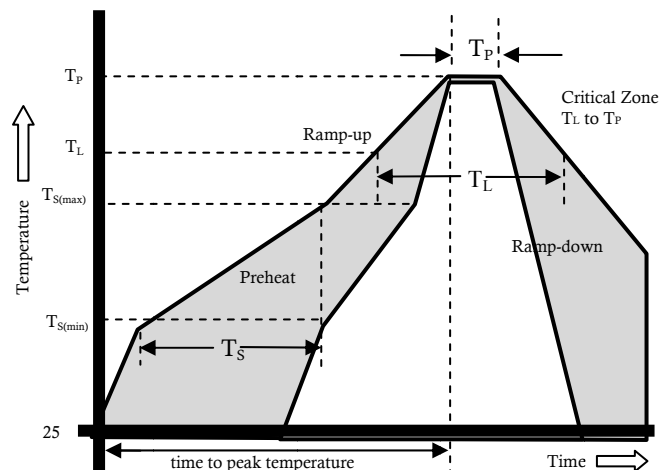
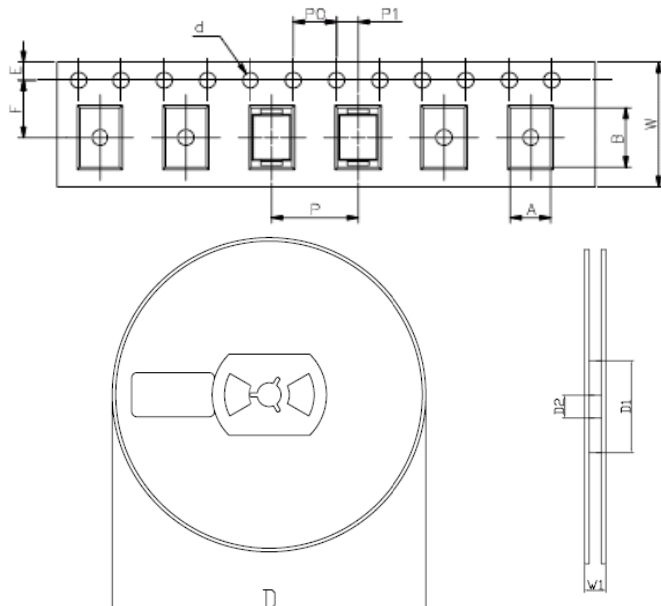
## Recommended Soldering Pad



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**
**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> )		8– 15secs
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