

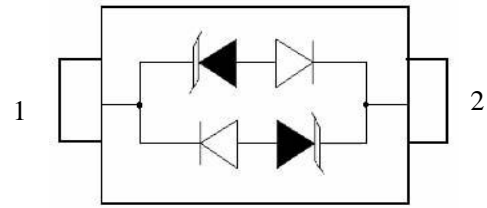
Transient Voltage Suppressor

Version: A0 2014-02-19

Features

- IEC 61000-4-2(ESD) ± 15KV(air), ± 8KV(contact)
- 450Watts peak pulse power (tp=8/20μ S)
- Ultra low capacitance:3.0 pF 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
RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003
	Mean lead free

Part Number and Electrical Parameter

Part Number	I _{DRM} @V _{DRM}		V _{BR} ^① @I _R		V _c @I _{pp} ^②		V _c @I _{pp} ^②		Co ^③
	μA	V	V	mA	V	A	V	A	pF
	MAX		MIN		MAX		MAX		MAX
BV03DW	0.5	3.3	3.5	1	5.8	1	18	25	3

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: 8/20μ S.

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

Part Numbering System

BV 03DW
(1) (2)

(1) Bencent Transient Voltage Suppressor

(2) Series: 03 etc.

Mark



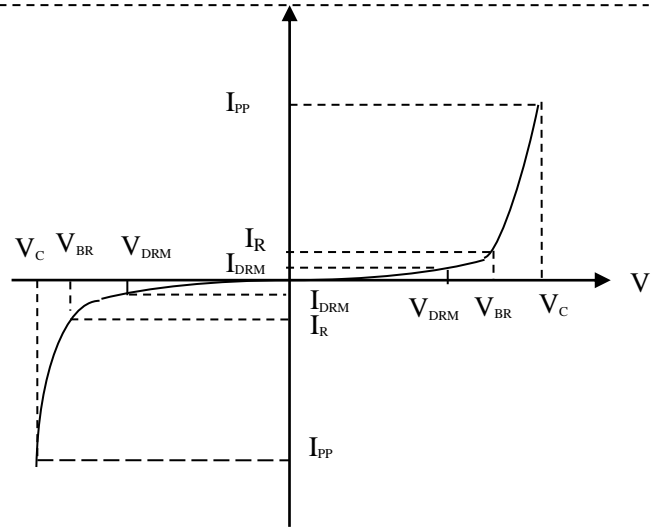
K3: Part Number

Transient Voltage Suppressor

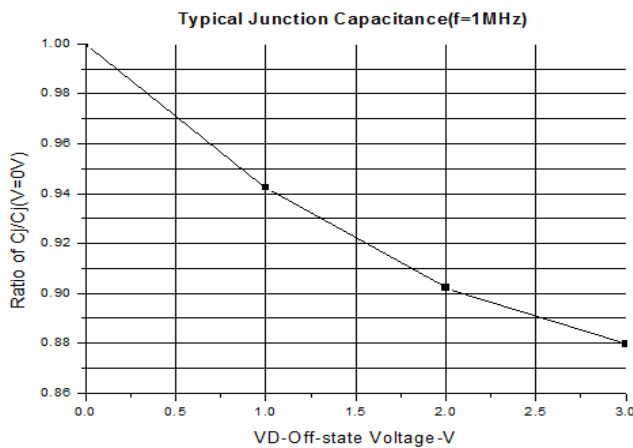
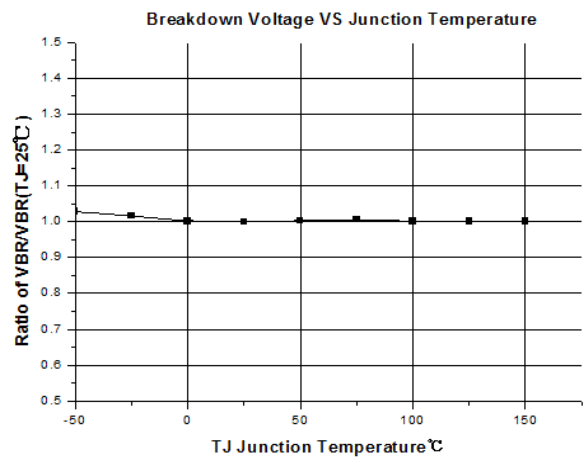
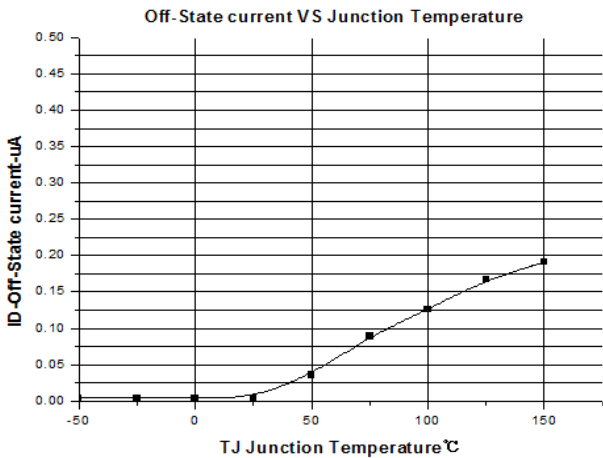
Version: A0 2014-02-19

V-I Curve

Parameters	Definition
V_C	Clamping voltage
I_{PP}	Surge waveform 8/20 μ 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	°C
T_S	Storage Temperature Range	-55 to +150	°C

Transient Voltage Suppressor

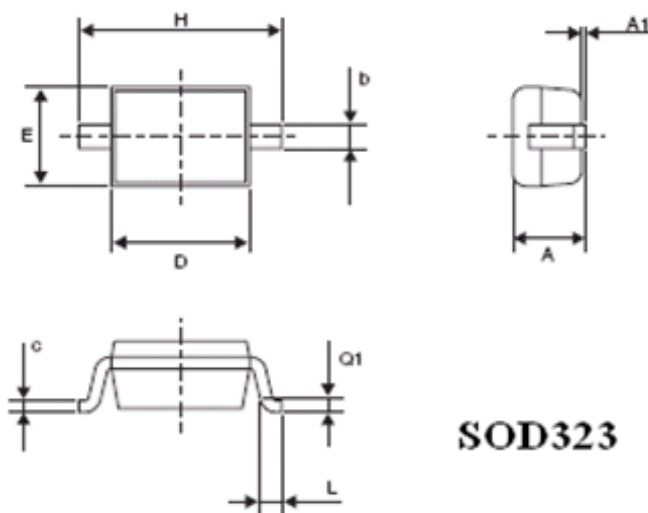
Version: A0 2014-02-19

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°C Time:168H
High-low Temperature Cycle test	Temperature: From -40°C to 125°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: $260\pm 5^{\circ}\text{C}$ Time of dip soldering: 10s, 3times

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

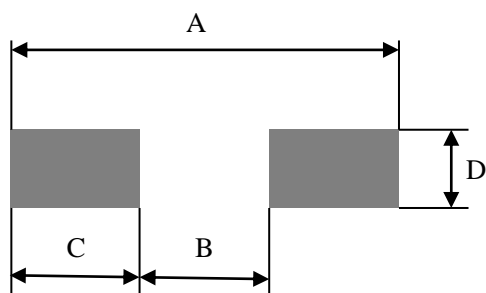
Product Dimensions



SOD323

REF	mm	inch
A	1.17	0.046
A1	0.1	0.004
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 ± 0.0066
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



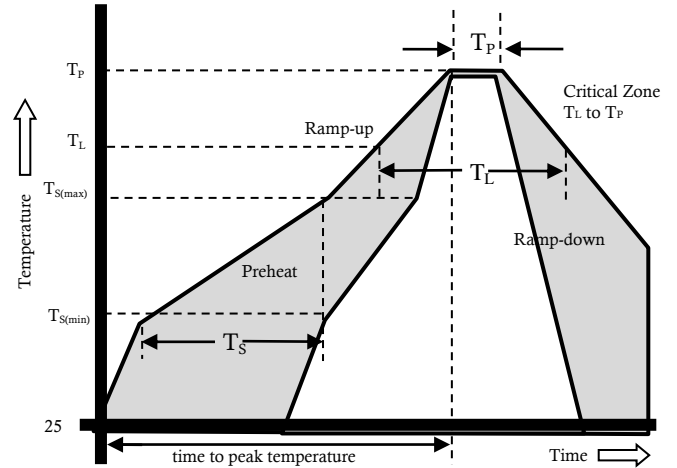
REF	mm	inch
A	3.20	0.126
B	1.08	0.043
C	1.06	0.042
D	0.54	0.021

Transient Voltage Suppressor

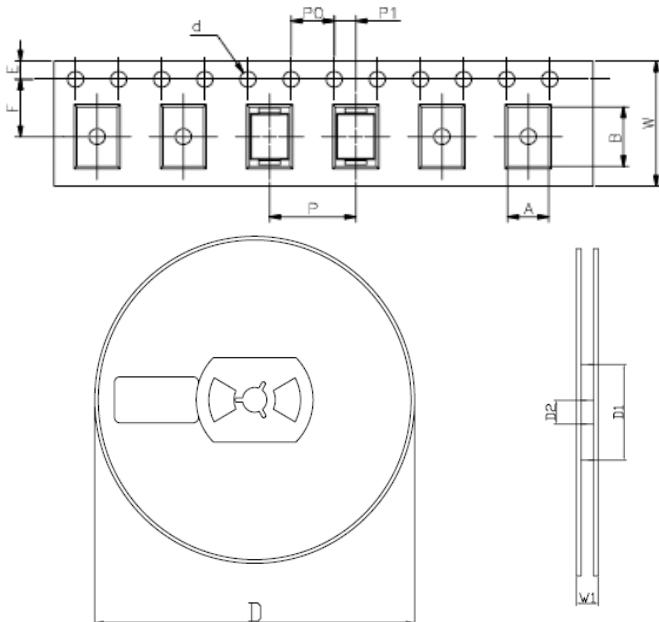
Version: A0 2014-02-19

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_L) to peak		3°C/s Max
T_S (max) to T_L - Ramp-up Rate		3°C/s Max
Reflow	- Temperature (T_L) (Liquid)	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)		8– 15secs
Ramp-down Rate		6°C/s Max
Time 25°C to peak Temperature (T_P)		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	390	370	220