BV-SMBT-20CA

Order Code: BV-SMBT-20CA

Transient Voltage Suppressor

Version: A0 2015-04-22

Features

- Small size: SMB-T
- Surge rating 1KA@8/20us
- Bi-directional

Exterior

Application information

- DC12V

Agency Approvals

Icon	Description
RoHS	Compliance with 2011/65/EU
HF	Compliance withIEC61249-2-21:2003

Part Number and Electrical Parameter

Part Number	I_{DRM}@V_{DRM}		V_{BR}①@I_R		Vc@Ipp②		Ipp③	Co④
	μA	V	V	mA	V	A	A	PF
	MAX		MIN		MAX		MIN	MAX
BV-SMBT-20CA	1	20	22.2	1	24.5	1	1000	2500

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

① V_{BR} is measured at I_R= 1mA (PIN1or3 to 2)

②Surge Waveform: 10/ 1000 μ S (PIN1and3 to 2)

③Surge Waveform: 8/20 μ S (PIN1and3 to 2)

④Off-state capacitance is measured in V_{DC}=0V, V_{RMS}=1V,f=1MHz(PIN1and3 to 2)

Part Numbering System

BV	SMBT	20	C	A
(1)	(2)	(3)	(4)	(5)

(1) Bencent TVS

(2) Package: SMB-T

(3)VDRM=20V

(4) Bidirectional polar

(5) Suffix ‘A’ denotes 5% tolerance devices

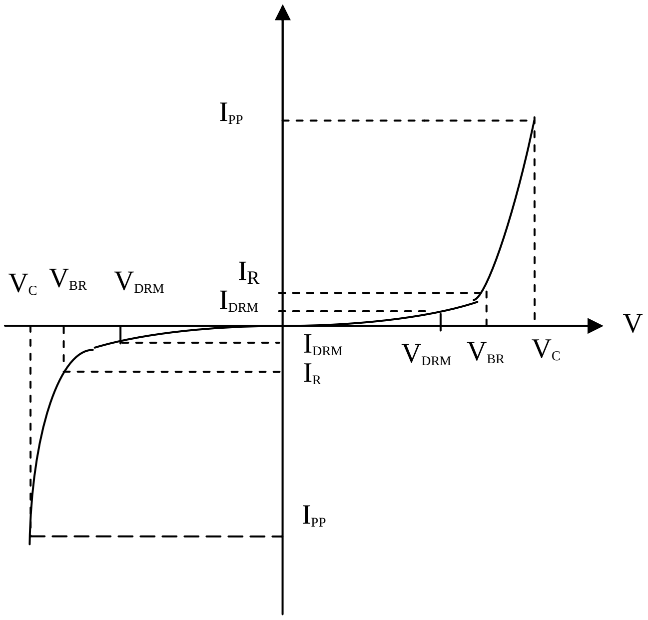
Mark

B20CT: Part Number

1503 : March,2015

V-I Curve

Parameters	Definition
V_C	Clamping voltage
I_{pp}	Surge waveform 10/1000 μ s
V_{DRM}	Stand-off Voltage
V_{BR}	Breakdown Voltage
I_{DRM}	Reverse Leakage Current
I_R	Test current
Ppp	Peak Pulse Power Dissipation



Thermal Considerations

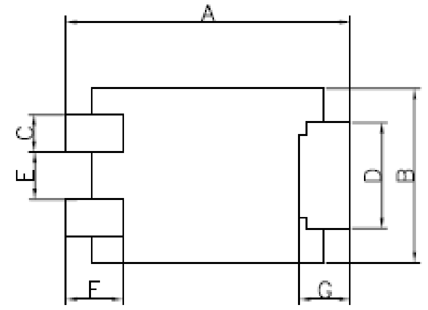
symbol	Parameter	Value	Unit
T_J	Operating Junction Temperature Range	-55 to +150	℃
T_S	Storage Temperature Range	-55 to +150	℃

Environmental Characteristics

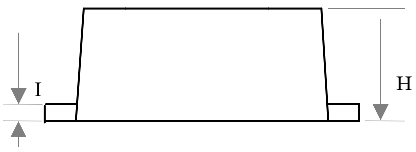
Testing Items	Technical Standards
High Temperature Reverse Bias Test	Temperature: 150±3℃, Bias=80%V_{DRM} Time:168H
High Temperature Life Test	Temperature: 150℃ Time:168H
High-low Temperature Cycle Test	Temperature: From -40℃ to125℃ Dwell time: 30min, 10-100 cycles
High Temperature &High Humidity Test	Temperature: 85℃Humidity:85% Test time:168H
Pressure Cooker Test	Temperature: 121℃, 2atm. Humidity:100% Test time: 24H to 168H
Resistance of Soldering Heat	Temperature: 260±5℃ Time of dip soldering: 10s, 3times

Note: The above testing items can be specified by customers by contacting Bencent service

Product Dimensions



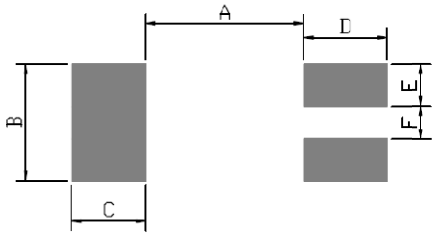
Bottom view



Side view

REF	mm	inch
A	5.4±0.3	0.213±0.012
B	3.3±0.3	0.130±0.012
C	0.7±0.03	0.028±0.001
D	2.0±0.2	0.079±0.008
E	0.9±0.2	0.035±0.008
F	1.32±0.3	0.052±0.012
G	1.13±0.3	0.045±0.012
H	2±0.3	0.079±0.012
I	0.25±0.05	0.010±0.002

Recommended Soldering Pad

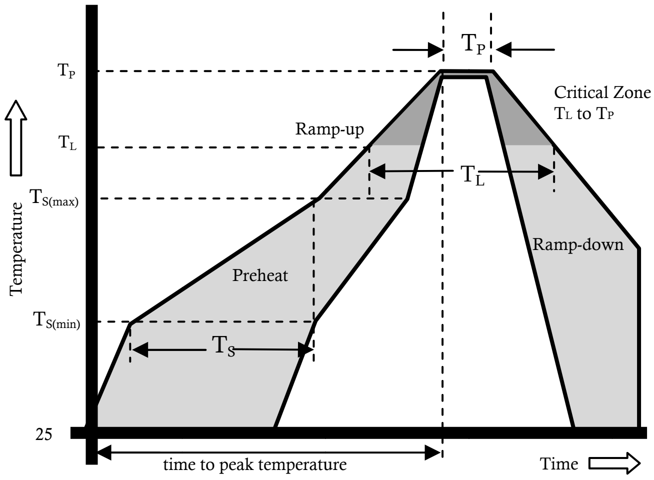


Bottom view

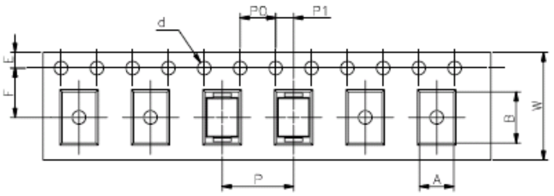
REF	mm	inch
A	2.8	0.134
B	2.5	0.098
C	1.6	0.059
D	1.8	0.059
E	0.9	0.035
F	0.8	0.032

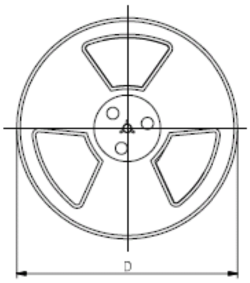
Reflow Profile

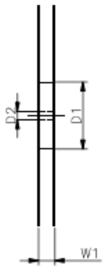
Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60 – 180 secs.
Average ramp up rate(Liquidus Temp(T_L) to peak)		3°C/sec. Max.
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max.
Reflow	- Temperature (T_L) (Liquidus)	+217°C
	- Temperature (T_L)	60 – 150 secs.
Peak Temp (T_P)		+(260+0/-5)°C
Time within 5°C of actual Peak Temp (T_P)		8 – 15 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	3.65+/-0.3	0.144+/-0.012
B	5.69+/-0.3	0.244+/0-.012
d	1.5+/-0.1	0.059+/-0.004
D	330.0	13.0
D1	100+/-3	3.937+/-0.118
D2	13+/-0.3	0.512+/-0.012
E	1.5+/-0.2	0.059+/-0.008
F	5.65+/-0.2	0.222+/-0.008
P	8.0+/-0.2	0.315+/-0.008
P0	4.0+/-0.2	0.157+/-0.008
P1	2.0+/-0.2	0.079+/-0.008
W	12.0+/-0.2	0.472+/-0.008
W1	16.8+/-2.0	0.661+/-0.079

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)	CARTON SIZE(mm)		
				L	W	H
TAPING	3,000	24,000	330	360	360	380