BV-SMBT-15CA

Order Code: BV-SMBT-15CA

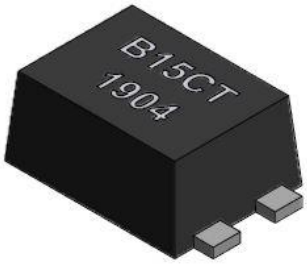
Transient Voltage Suppressor

Version: A4 2025/04/22

Features

- IEC 61000-4-2(ESD)±30KV(air), ±30KV(contact)
- Surge rating:1KA@8/20us
- Bi-directional
- Quick response to surge voltage
- Moisture sensitivity level: level 1

Exterior



SMB-T

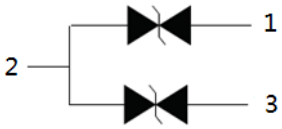
Application Information

- DC12V

Agency Approvals

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

Schematic Symbol



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				MAX		MIN	MAX
BV-SMBT-15CA	1	15	16.7-18.5	1	24.4	41	1000	3000

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

① V_{BR} is measured at I_R=1Ma (PIN1or 3 to 2)

② Surge Waveform: 10/1000μS (PIN1or 3 to 2)

③ Surge Waveform: 8/20μS (PIN1and 3 to 2)

④ Off-state capacitance is measured in V_{DC}=0V, V_{RMS}=1V, f=1MHz (PIN1and 3 to 2)

Part Numbering System

BV	SMBT	15	C	A
(1)	(2)	(3)	(4)	(5)

(1) Bencent TVS

(2) Package: SMB-T

(3) VDRM=15V

(4) Bidirectional polar

(5) Suffix 'A' denotes 5% tolerance devices

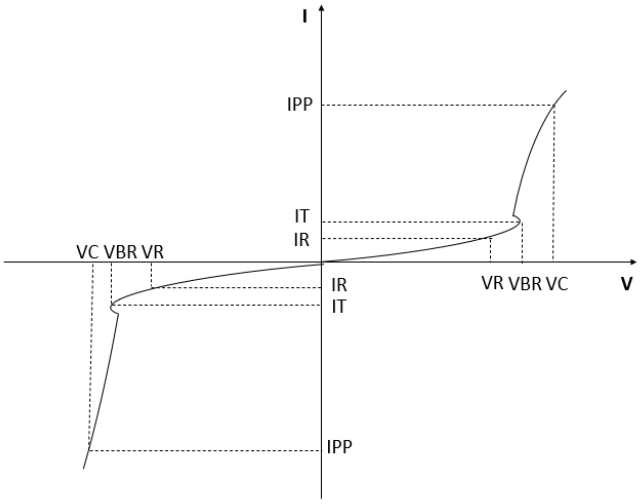
Mark

B15CT: Part Number

1904: April, 2019

V-I Curve

Parameters	Definition
V_C	Clamping voltage
I_{pp}	Surge waveform 10/1000μs
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
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

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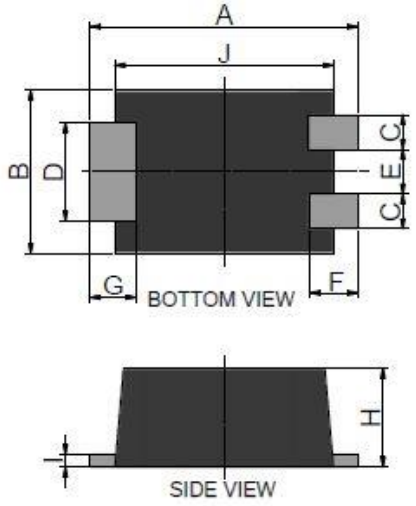
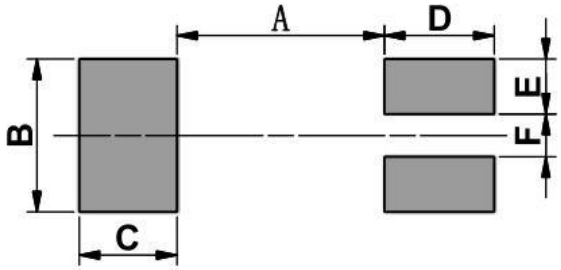
Product Dimensions



REF	mm	inch
A	5.4±0.3	0.213±0.012
B	3.3±0.3	0.130±0.012
C	0.7±0.15	0.028±0.006
D	2.0±0.2	0.079±0.008
E	0.9±0.2	0.035±0.008
F	0.8±0.3	0.031±0.012
G	0.8±0.3	0.031±0.012
H	2±0.3	0.079±0.012
I	0.25±0.1	0.010±0.004
J	4.4±0.2	0.173±0.008

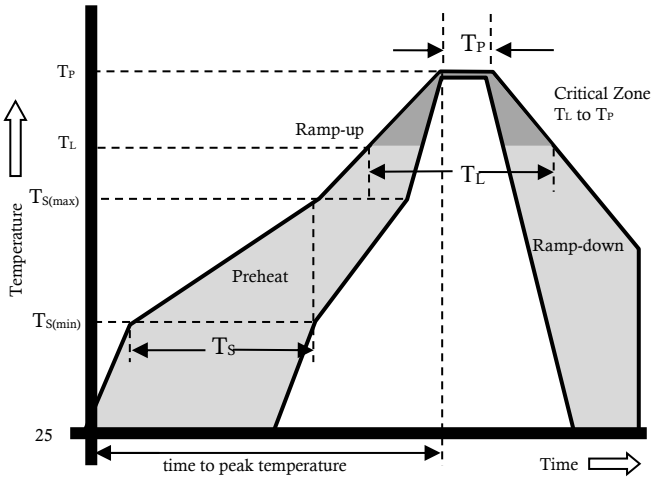
Recommended Soldering Pad



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



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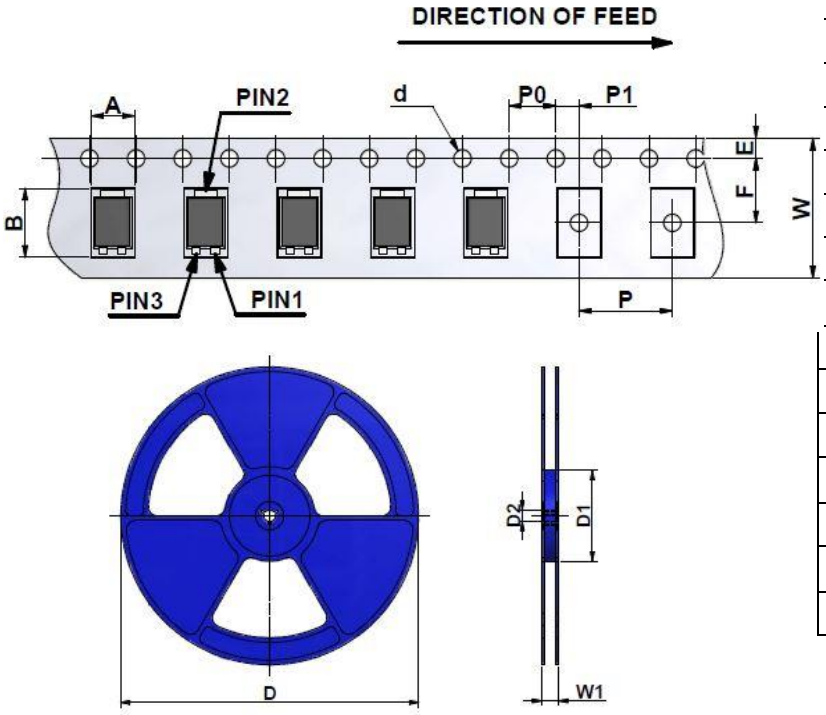
Package Reel Information



REF	mm	inch
A	3.9±0.2	0.154±0.008
B	5.8±0.2	0.228±0.008
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	1.75±0.2	0.069±0.008
F	5.5±0.25	0.217±0.010
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	48,000	330	360	360	385