

Thyristor Surge Suppressor

Version: A0 2019/5/15

Features

- Excellent capability of absorbing transient surge
- Quick response to surge voltage
- Eliminates overvoltage caused by fast rising transients
- Moisture sensitivity level: Level 1
- Non degenerative
- Rating Surge Voltage: 1.5KV (10/700 μ S)

Exterior

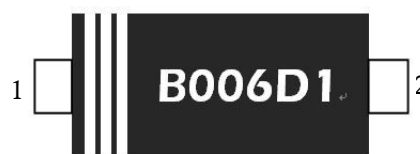


SOD-123

Application information

- Video

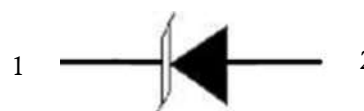
Package (top view)



Agency Approvals

Icon	Description
RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

Schematic Symbol



Part Number and Electrical Parameter

Part Number	I _{DRM} @V _{DRM}		V _S ^① @ I _S		V _T @ I _T		I _H	Co ^②
	μ A	V	V	mA	V	A	mA	pF
	MAX		MAX		MAX		MIN	MAX
BS0060D1	5	6	25	800	4	2.2	15	80

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

① V_S is measured at 100KV/S

② Off-state Capacitance is measured at V_{DC}=2V, V_{RMS}=1V, f=1MHz

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Part Numbering System

BS 0060 D 1
(1) (2) (3) (4)

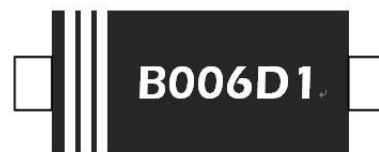
(1)Bencent Semiconductor Surge Arrester

(2) Off-state Voltage, 6V

(3) Package: SOD123

(4) Polarity: Uni-directional

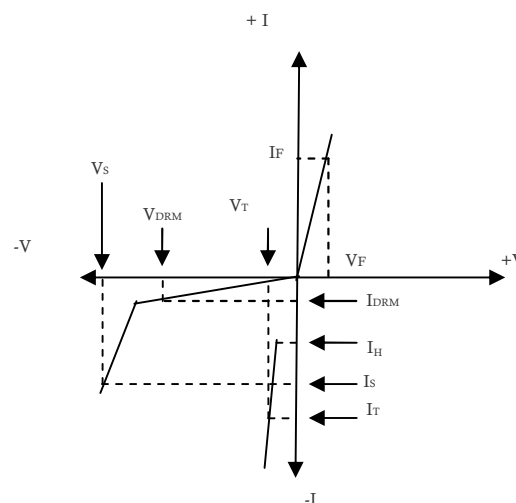
Mark



B006D1: Part Number

V-I Curve

Parameters	Definition
V_{DRM}	Peak Off-state Voltage
I_{DRM}	Off-state Current
V_S	Switching Voltage
I_S	Switching Current
I_H	Holding Current
V_T	On-state Voltage
I_T	On-state Current
C_o	Off-state Capacitance



Surge Ratings

Current Waveform	5/320 μ s
Voltage Waveform	10/700 μ s @42 Ω
I_{pp}	36A

Thermal Considerations

Symbol	Parameter	Value	Unit
T_J	Operating Junction Temperature Range	-40 to +125	$^{\circ}$ C
T_S	Storage Temperature Range	-40 to +125	$^{\circ}$ C

Physical Characteristics

Lead Material	Copper Alloy
Body Material	UL recognized epoxy meeting flammability classification 94V-0
Terminal Finish	100% Matte-Tin Plated

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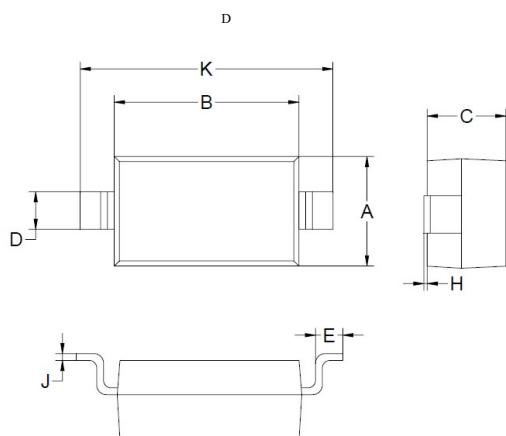
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Environmental Characteristics

Testing Items	Technical Standards
High Temperature Reverse Bias Test	Temperature: $125\pm 3^{\circ}\text{C}$, Bias= $80\%V_{\text{DRM}}$ Time:168H
High Temperature Life Test	Temperature: 125°C Time:168H
High-low Temperature Cycle Test	Temperature:From -40°C to 125°C Dwell time: 30min, 10-100 cycles
High Temperature &High Humidity Test	Temperature: 85°C Humidity:85% Test time:168H
Pressure Cooker Test	Temperature: 121°C , 2atm. Humidity:100% Test time: 24H
Resistance of Soldering Heat	Temperature: $260\pm 5^{\circ}\text{C}$ Time of dip soldering: 10s, 3times

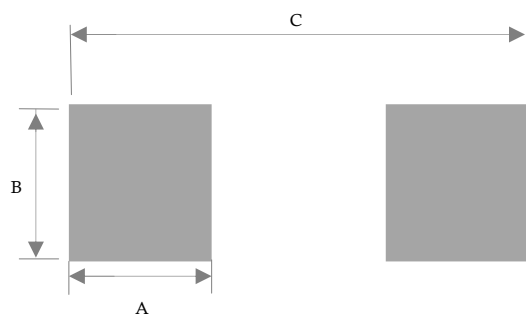
Note:The above testing items can be specified by customers by contacting Bencent service

Product Dimensions



REF.	mm	inch
A	1.6 ± 0.3	0.063 ± 0.012
B	2.7 ± 0.3	0.106 ± 0.012
C	1.1 ± 0.3	0.043 ± 0.012
D	0.55 ± 0.2	0.022 ± 0.008
E	0.3 ± 0.2	0.012 ± 0.008
H	$0.00\sim 0.2$	$0.000\sim 0.008$
J	0.1 ± 0.05	0.004 ± 0.002
K	3.7 ± 0.4	0.146 ± 0.016

Recommended Soldering Pad



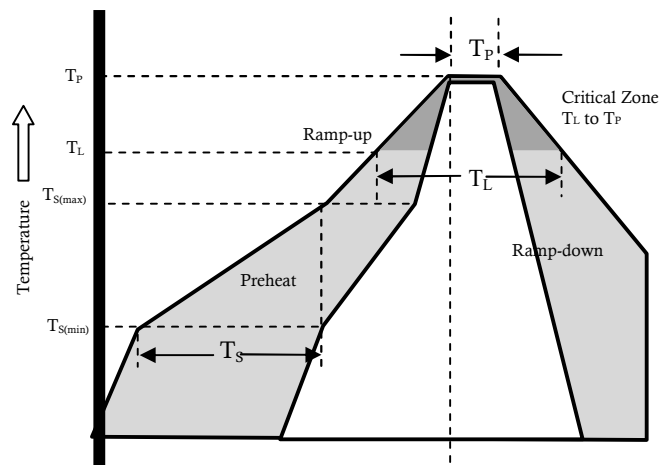
REF	mm	inch
A	0.7	0.028
B	0.95	0.037
C	4.1	0.161

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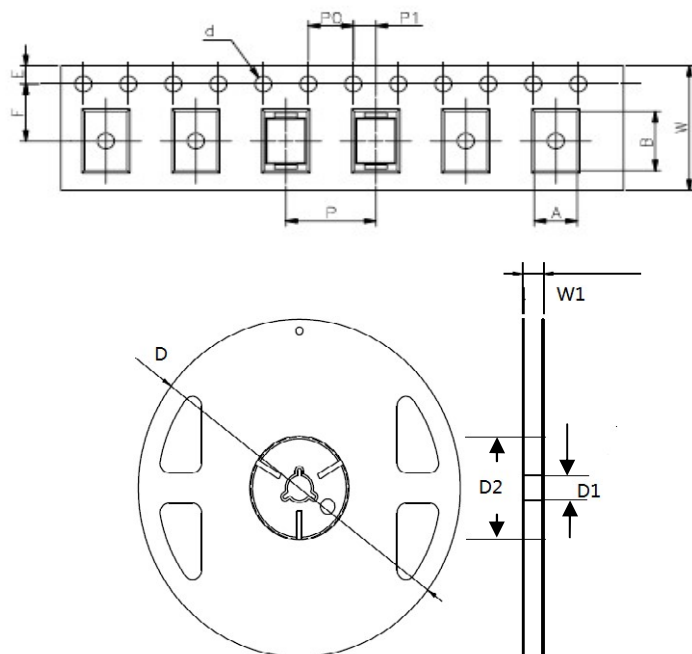
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Reflow Profile

Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time (min to max)	60 – 180 seconds
Average ramp up rate (Liquid)Tamp (T _L) to peal		3°C/second max
TS (max) to TL - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T _L) (Liquid)	217°C
	- Temperature (T _L)	60 – 150 seconds
Peak Temperature (T _P)		260 +0/-5 °C
Time within 5°C of actual peak Temperature (T _P)		8-15 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T _P)		8 minutes Max.
Do not exceed		260°C



Package Reel Information



REF	mm	inch
A	2.0±0.3	0.079±0.012
B	4.0±0.3	0.157±0.012
d	1.55±0.1	0.061±0.004
D	178±3	7.008±0.118
D1	13±1	0.512±0.039
D2	55±3	2.165±0.118
E	1.75±0.2	0.069±0.008
F	3.50±0.2	0.138±0.008
P	4.00±0.2	0.157±0.008
P0	4.00±0.2	0.157±0.008
P1	2.00±0.2	0.079±0.008
W	8.00±0.2	0.315±0.008
W1	12±2	0.472±0.079

Outline	Reel (pcs)	Per Carton (pcs)	Reel Diameters (mm)	Carton Size(mm)		
				L	W	H
Taping	3000	90000	178	390	370	220