

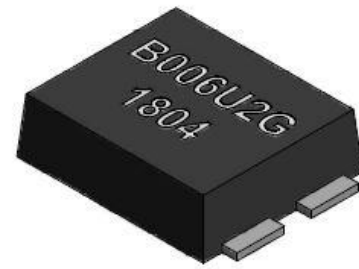
## Thyristor Surge Suppressor

Version: A2 2018/6/13

### Features

- Excellent capability of absorbing transient surge
- Quick response to surge voltage (nS Level)
- Eliminates overvoltage caused by fast rising transients
- Moisture sensitivity level: level 1
- Non degenerative
- Bi-directional

### Exterior



SMC-T

### Application Information

- RS485

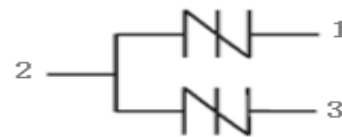
### Package (top view)



### Agency Approvals

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

### Schematic Symbol



### Part Number and Electrical Parameter

Part Number	IDRM@VDRM		Vs <sup>①</sup> @ Is		VT@ IT		IH	Co <sup>②</sup>
	μA	V	V	mA	V	A	mA	pF
	MAX	Pin1,3-2	Pin1,3-2		MAX		MIN	MAX
BS0060U-2G	5	6	25	800	4	2.2	50	1000

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

①Vs is measured at 100KV/S

② Off-state Capacitance is measured at VDC=2V, VRMS=1V, f=1MHz

### Part Numbering System

BS 0060 U - 2 G  
(1) (2) (3) (4) (5)

(1) Bencent Semiconductor Surge Arrester

(2) Off state Voltage=6V.

(3) Package: SMC-T

(4) 2 Lines Protection

(5) Rating Surge Voltage: 3KA (8/20μS)

### Mark



B006U2G: Part Number

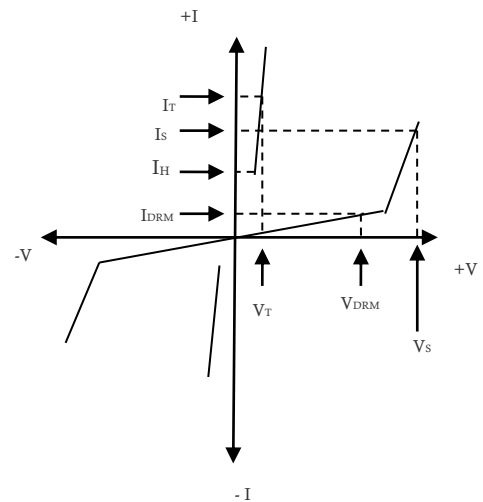
1804: April, 2018

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### 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	8/20 $\mu$ s
Voltage Waveform	1.2/50 $\mu$ s
$I_{pp}$	3KA

-Peak pulse current rating ( $I_{PP}$ ) is repetitive and guaranteed for the life of the product;

-Bencent only makes the test for 8/20 $\mu$ s@3KA, but for other IPP value derived from experience is just for reference only.

### Thermal Considerations

Symbol	Parameter	Value	Unit
$T_J$	Operating Junction Temperature Range	-40 to +150	$^{\circ}\text{C}$
$T_S$	Storage Temperature Range	-40 to +150	$^{\circ}\text{C}$

### Physical Characteristics

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

### Environmental Characteristics

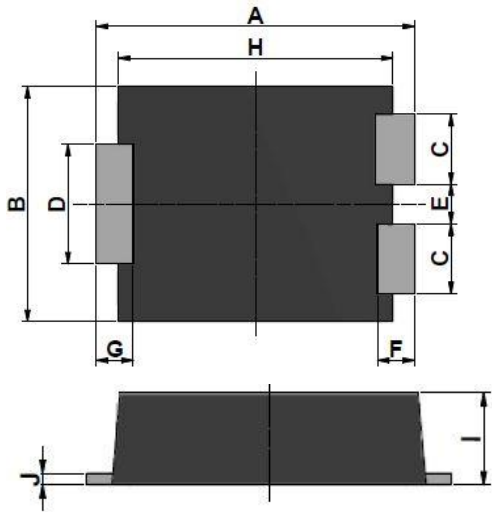
Testing Items	Technical Standards
High Temperature Reverse Bias Test	Temperature: 150 $\pm$ 3 $^{\circ}\text{C}$ , Bias=80% $V_{DRM}$ Time: 168H
High Temperature Life Test	Temperature: 150 $^{\circ}\text{C}$ Time: 168H
High-low Temperature Cycle Test	Temperature: From -40 $^{\circ}\text{C}$ to 125 $^{\circ}\text{C}$ Dwell time: 30min, 100 cycles
High Temperature & High Humidity Test	Temperature: 85 $^{\circ}\text{C}$ Humidity: 85% Test time: 168H
Pressure Cooker Test	Temperature: 121 $^{\circ}\text{C}$ , 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

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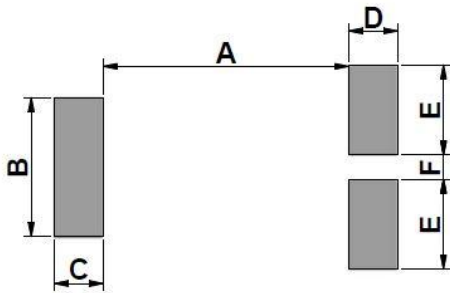
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### Product Dimensions



REF	mm	inch
A	8.0±0.3	0.315±0.012
B	5.9±0.3	0.232±0.012
C	1.75±0.1	0.069±0.004
D	3.0±0.2	0.118±0.008
E	1.0±0.2	0.039±0.008
F	0.8±0.25	0.031±0.010
G	0.8±0.25	0.031±0.010
H	6.9±0.3	0.272±0.012
I	2.0±0.2	0.079±0.008
J	0.25±0.05	0.010±0.002

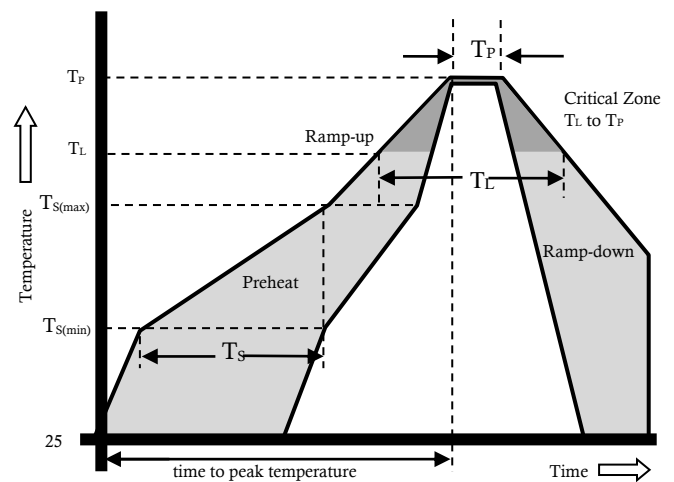
### Recommended Soldering Pad



REF	mm	inch
A	6.0	0.236
B	3.4	0.134
C	1.2	0.047
D	1.2	0.047
E	2.2	0.087
F	0.6	0.024

### Reflow Profile

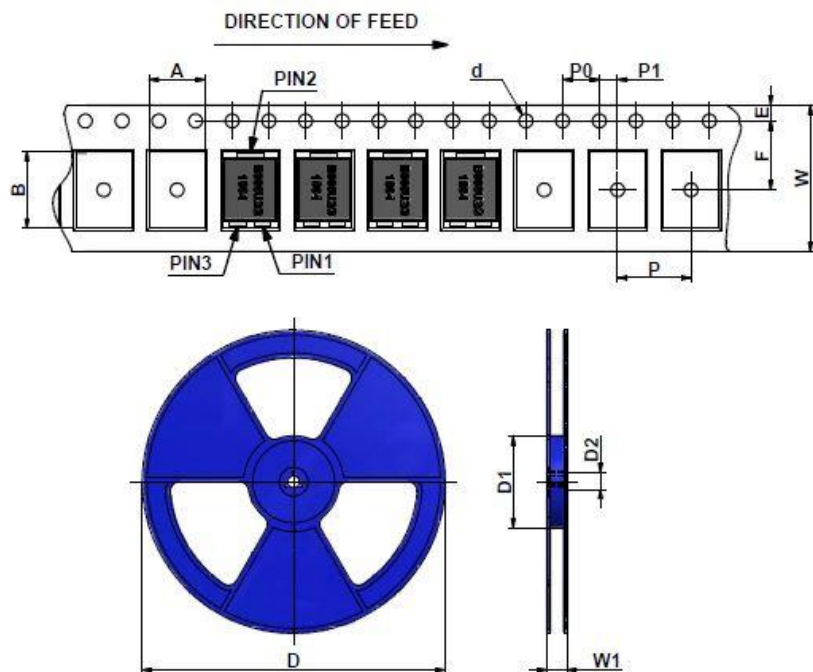
Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time (Min to Max)	60 – 180 secs.
Average ramp up rate (Liquidus Temp (T <sub>L</sub> ) to peak)		3°C/sec. Max.
Ts(max) to T <sub>L</sub> - Ramp-up Rate		3°C/sec. Max.
Reflow	- Temperature (T <sub>L</sub> ) (Liquidus)	+217°C
	- Temperature (T <sub>L</sub> )	60 – 150 secs.
Peak Temp (T <sub>P</sub> )		+(260+0/-5)°C
Time within 5°C of actual Peak Temp (T <sub>P</sub> )		8 – 15 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp (T <sub>P</sub> )		8 min. Max.
Do not exceed		+260°C



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Package Reel Information



REF	mm	inch
A	$6.05 \pm 0.2$	$0.238 \pm 0.008$
B	$8.3 \pm 0.2$	$0.327 \pm 0.008$
d	$1.5 \pm 0.15$	$0.059 \pm 0.006$
D	type330.0	type13.0
D1	$99 \pm 1$	$3.898 \pm 0.039$
D2	$13.3 \pm 0.5$	$0.524 \pm 0.020$
E	$1.75 \pm 0.2$	$0.069 \pm 0.008$
F	$7.5 \pm 0.2$	$0.295 \pm 0.008$
P	$8.0 \pm 0.1$	$0.315 \pm 0.004$
P0	$4.0 \pm 0.1$	$0.157 \pm 0.004$
P1	$2.0 \pm 0.1$	$0.079 \pm .004$
W	$16.0 \pm 0.5$	$0.630 \pm 0.020$
W1	$21.5 \pm 1$	$0.846 \pm 0.039$

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)	CARTON SIZE(mm)		
				L	W	H
TAPING	3,000	48,000	330	360	360	385