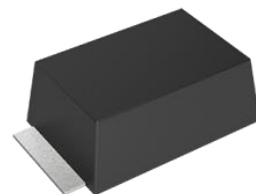


Features

- 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
- Weight: 87mg
- Non degenerative
- Uni-directional

Exterior

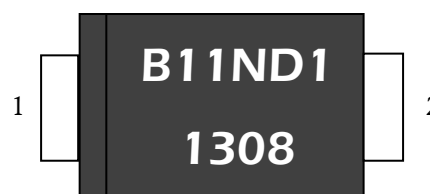


SMB-F

Application Information

- SLIC

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	IDRM@VDRM (PIN1-2)		VS ^① @ IS(PIN1-2)		VT@ IT(PIN1-2)		VF@IF(PIN2-1)		IH(PIN1-2)	Co ^② (PIN1-2)
	μA	V	V	mA	V	A	V	mA	mA	pF
	MAX		MAX		MAX		MAX		MIN	MAX
BS1100N-D1	5	95	130	800	4	2.2	1	10	50	150

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

① Vs is measured at 100KV/S.

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

Thyristor Surge Suppressor

Version: A1 2017-12-11

Part Numbering System

BS 1100 N D 1
(1) (2) (3) (4) (5)

- (1) Bencent Semiconductor Surge Arrester
(2) Off-state Voltage, e.g.: 1100=110×10⁰=110V
(3) Package: SMB-F
(4) Rating Surge Voltage: 800A(8/20μs)
(5) Polarity: Uni-directional

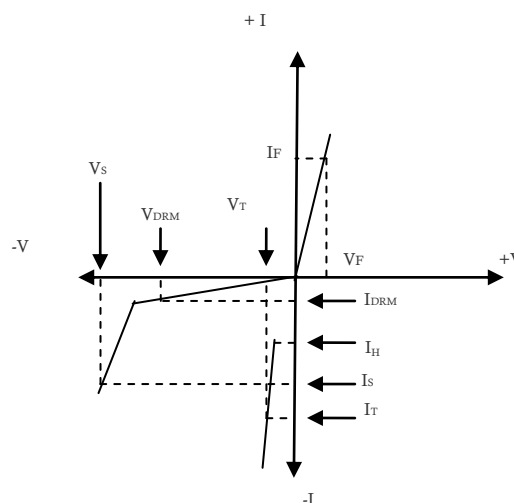
Mark



B11ND1: Part Number
1308: August, 2013

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	8/20μs
Voltage Waveform	1.2/50μs
I _{pp}	800A

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

-Bencentonly makes the test for 8/20μs@800A

Bencentwill not takeany obligation for these parameters, so before applyingour parts, please make sure to verify theparameters listed in the above table.

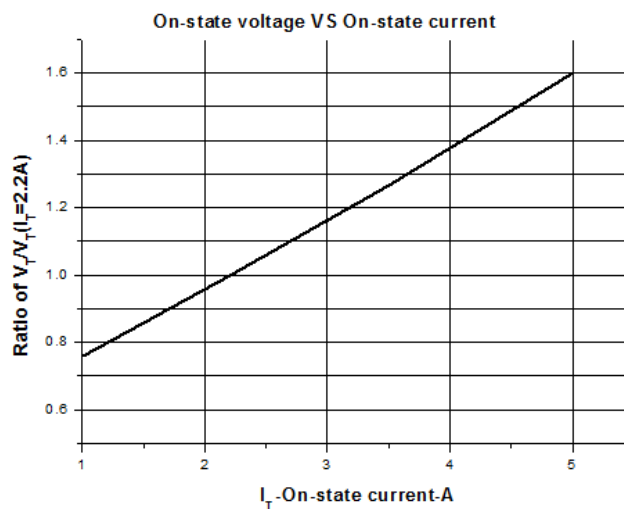
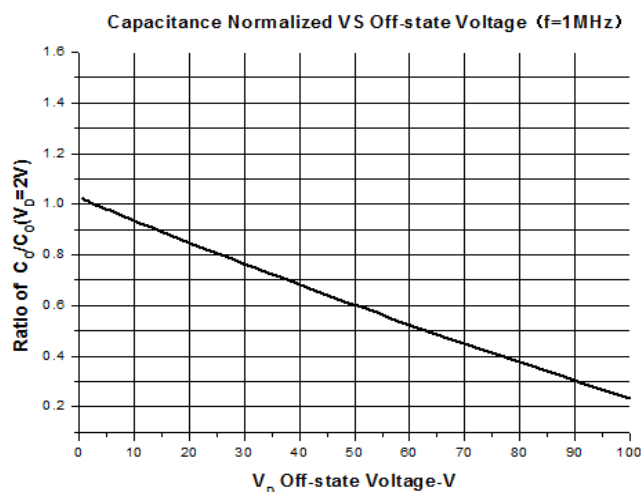
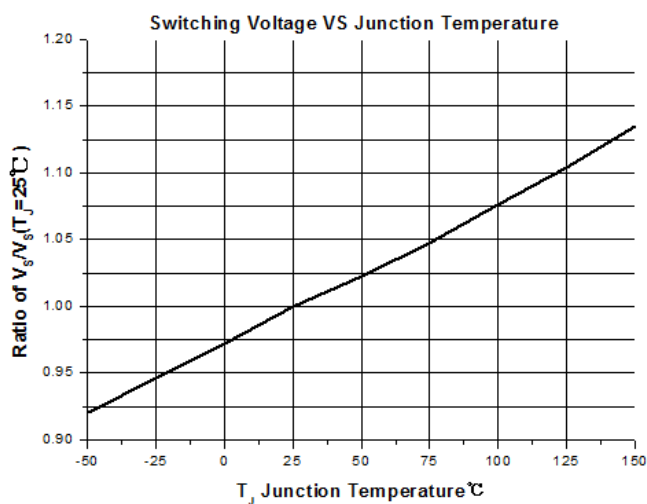
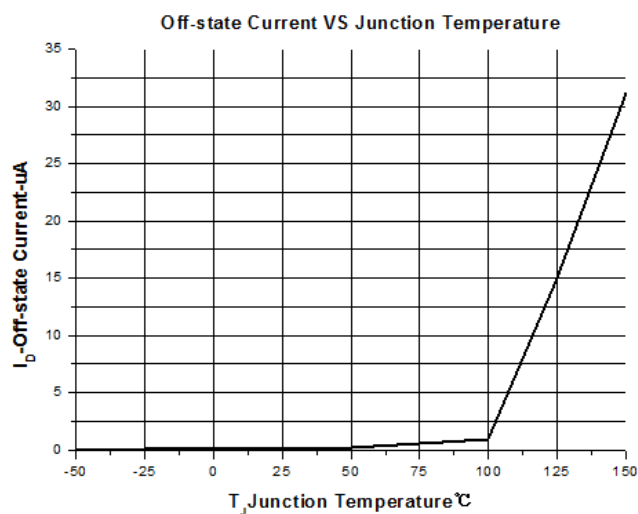
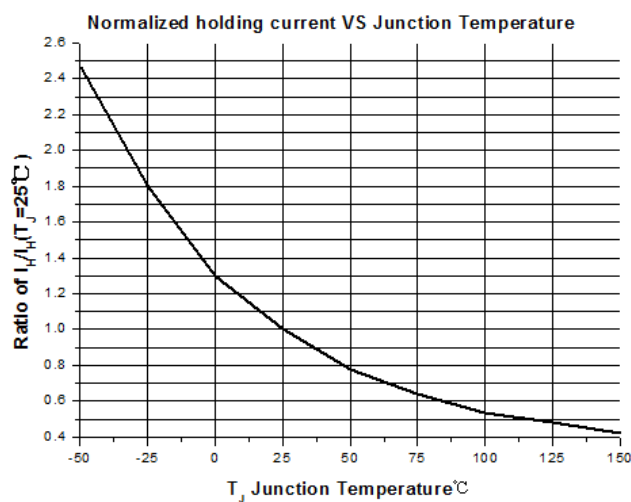
Thermal Considerations

symbol	Parameter	Value	Unit
T _J	Operating Junction Temperature Range	-40 to +150	℃
T _S	Storage Temperature Range	-60 to +150	℃

Physical Characteristics

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

Typical Characteristics



Thyristor Surge Suppressor

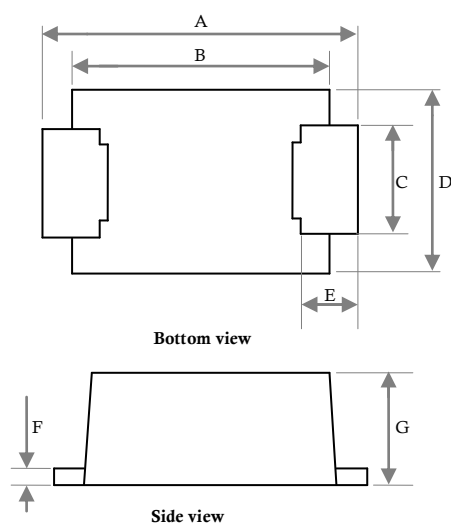
Version: A1 2017-12-11

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-1000H
High Temperature Life Test	Temperature: 150°C Time: 168H-1000H
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-1000H
Pressure Cooker Test	Temperature: 121°C , 2atm. Humidity: 100% Test time: 24H to 168H
Resistance of Soldering Heat	Temperature: $260 \pm 5^{\circ}\text{C}$ Time of dip soldering: 10s, 3times
HAST (highly accelerated stress test)	Temperature: $130 \pm 2^{\circ}\text{C}$ Humidity: 85% Bias= $80\%V_{\text{DRM}}$ Time: 96H

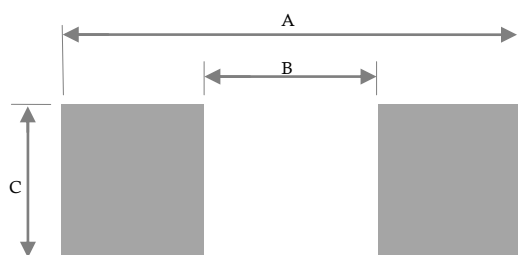
Note: The above testing items can be specified by customers by contacting Bencent service

Product Dimensions



REF	mm	inch
A	5.4 ± 0.3	0.213 ± 0.012
B	4.4 ± 0.2	0.173 ± 0.008
C	2.0 ± 0.1	0.079 ± 0.004
D	3.3 ± 0.3	0.130 ± 0.012
E	0.8 ± 0.3	0.032 ± 0.012
F	0.25 ± 0.05	0.010 ± 0.002
G	2 ± 0.3	0.079 ± 0.012

Recommended Soldering Pad



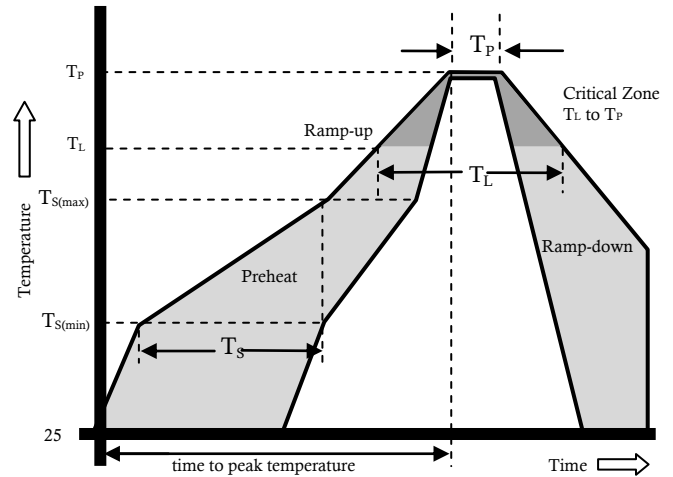
REF	mm	inch
A	6.4	0.252
B	3.4	0.134
C	2.75	0.108

Thyristor Surge Suppressor

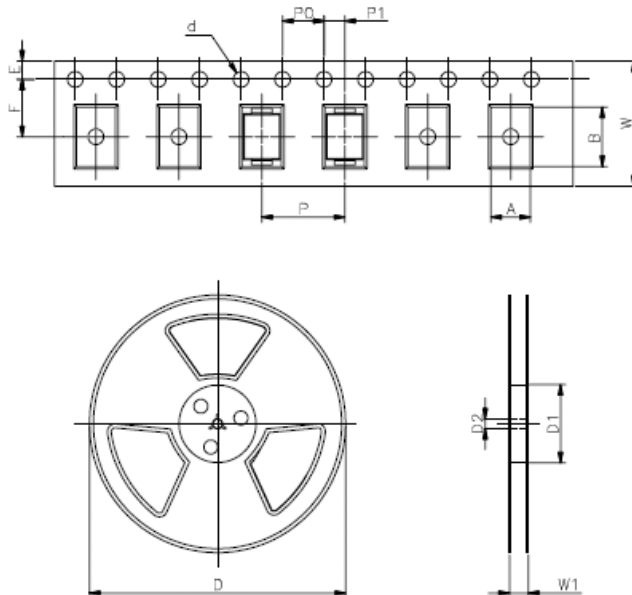
Version: A1 2017-12-11

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.
Ts(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 – 15secs.
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	48,000	330	360	360	385