

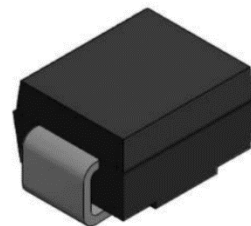
Features

- 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: 100mg

- Non degenerative
- Bi-directional
-

Exterior



DO214AA (SMB)

Application Information

- POS

Package (top view)



Agency Approvals

Icon	Description
RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003
UL	Compliance with UL497B, Certificated E232249

Schematic Symbol



Part Number and Electrical Parameter

Part Number	IDRM@VDRM		Vs ^① @ Is		VT@ IT		IH	Co ^②
	μA	V	V	mA	V	A	mA	pF
	MAX		MAX		MAX		MIN	MAX
BS3100N-C	5	275	350	800	4	2.2	150	60

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.

Thyristor Surge Suppressor

Part Numbering System

Mark

BS 3100 N -C
(1) (2) (3) (4)



- (1) Bencent Semiconductor Surge Arrester
(2) Off-state Voltage, e.g.: 3100=310×10⁰=310V
(3) Package: DO214AA(SMB)
(4) Rating Surge Voltage: 6KV (10/700μs), abbreviatory

B31NB: Part Number
1904: April, 2019

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	5/320μs*	10/1000μs
Voltage Waveform	1.2/50μs	10/700μs*	10/1000μs
I _{pp}	400A	150A	100A

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

-Bencent only makes the test for 5/320μs@100A* (10/700μs@4KV), but for other IPP value derived from experience is just for reference only. Bencent will not take any obligation for these parameters, so before applying our parts, please make sure to verify the parameters listed in the above table.

Thermal Considerations

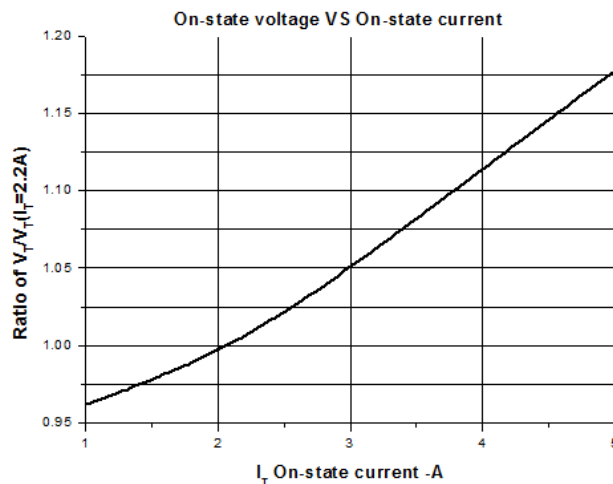
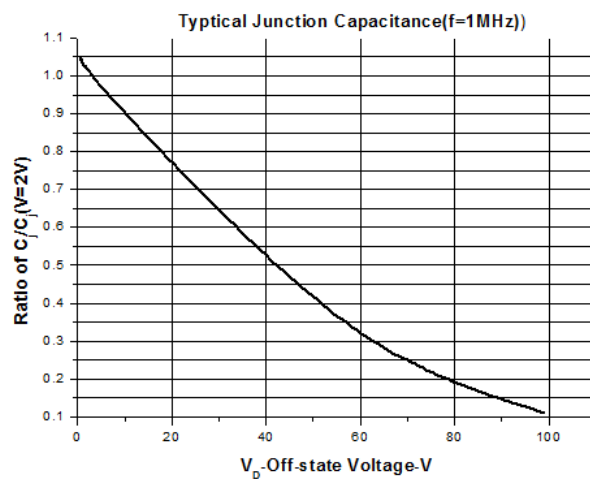
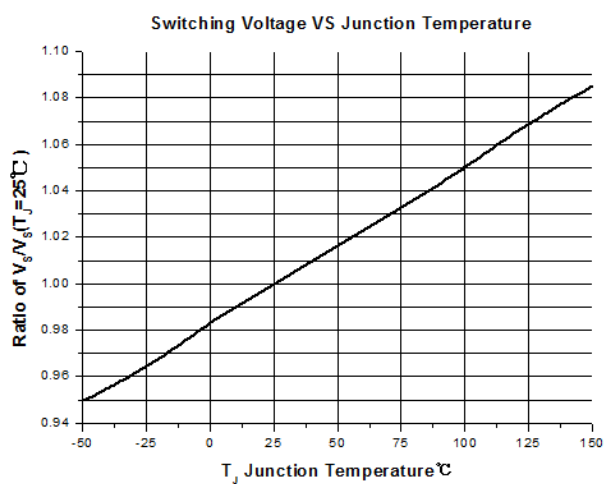
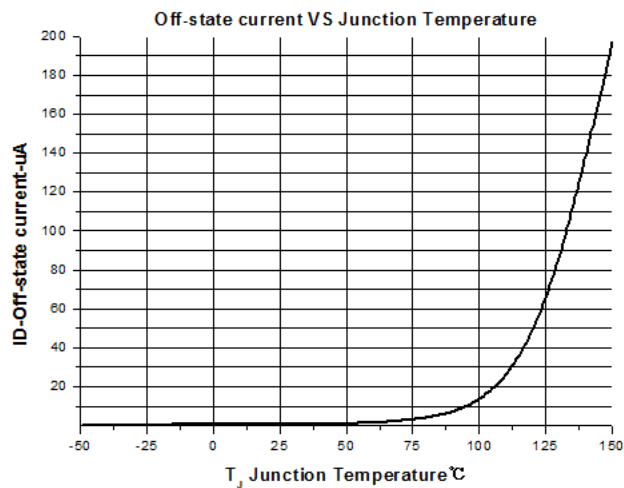
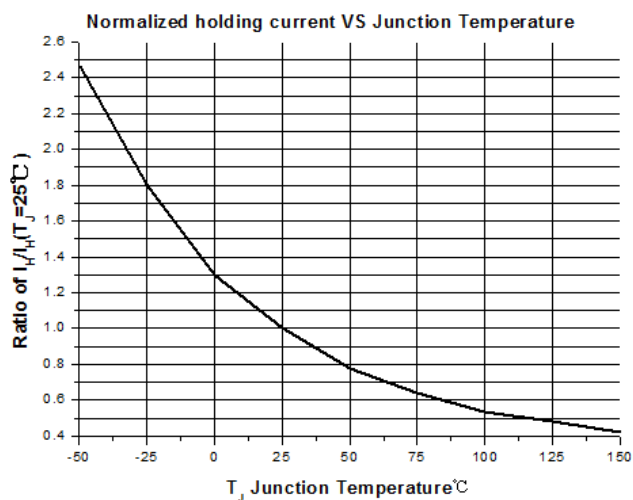
Symbol	Parameter	Value	Unit
T _J	Operating Junction Temperature Range	-40 to +150	℃
T _S	Storage Temperature Range	-60 to +150	℃

Physical Characteristics

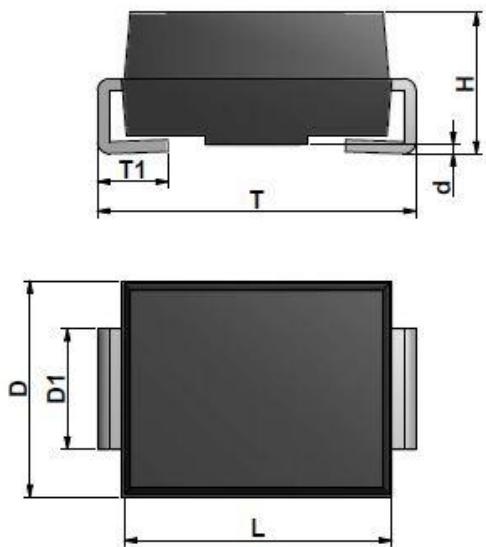
Lead Material	Copper Alloy
Body Material	UL recognized epoxy meeting flammability classification 94V-0
Terminal Finish	100% Matte-Tin Plated

Thyristor Surge Suppressor

Typical Characteristics

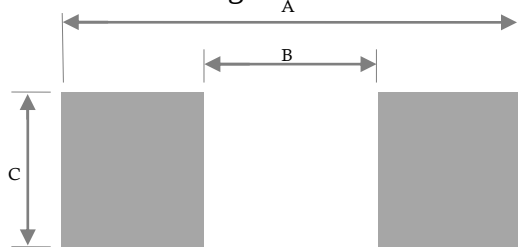


Product Dimensions



REF.	mm	inch
D	3.6 ± 0.3	0.142 ± 0.012
D1	2 ± 0.15	0.079 ± 0.006
L	4.6 ± 0.3	0.181 ± 0.012
T	5.4 ± 0.3	0.213 ± 0.012
T1	1.1 ± 0.3	0.043 ± 0.012
d	0~0.4	0~0.016
H	2.10~2.60	0.083~0.102

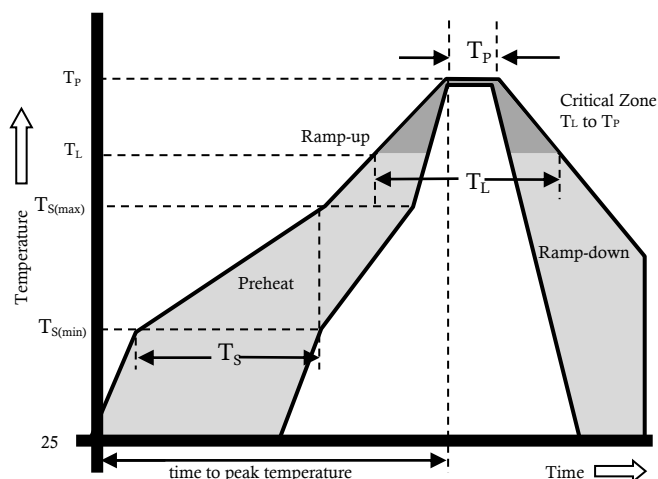
Recommended Soldering Pad



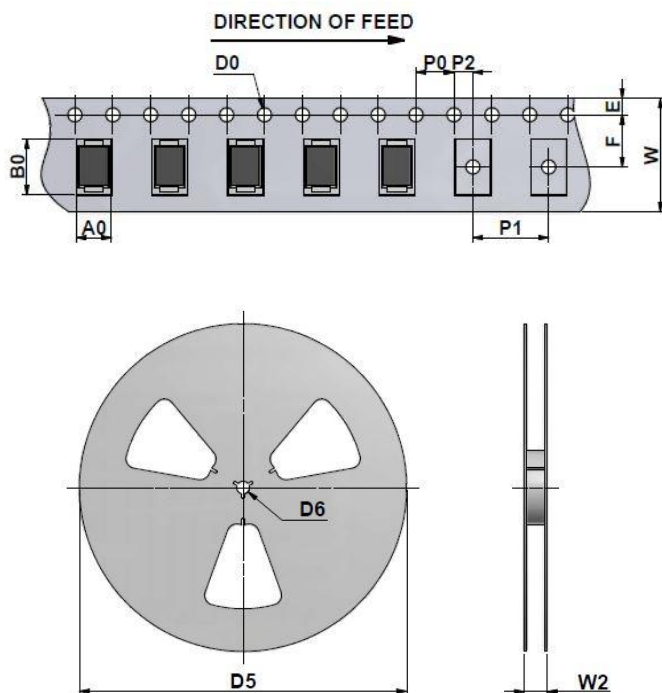
REF	mm	inch
A	5.45	0.215
B	2.45	0.096
C	2.15	0.085

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
W	12±1	0.472±0.039
E	1.75±0.3	0.069±0.012
F	5.5±0.3	0.217±0.012
D0	1.55±0.15	0.061±0.006
D1	1.5±0.2	0.059±0.008
P0	4.0±0.2	0.157±0.008
P1	8.0±0.2	0.315±0.008
P2	2.0±0.2	0.079±0.008
A0	3.6±0.3	0.142±0.012
B0	5.7±0.3	0.224±0.012
D5	Ø330	Ø13
D6	Ø13.5±1.0	Ø0.531±0.039
W2	18±2.0	0.709±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