

SURGiNG

紹 鑫 實 業



Transient Voltage Suppressor

瞬态抑制二极管

BV-SM8SXXCA Series

Transient Voltage Suppressor

BV-SM8SXXCA Series

Features

- Available in uni-directional polarity only.
- Low leakage current.
- Low forward voltage drop
- High surge capability.
- Meets ISO7637-2 surge specification (varied by test condition).
- AEC-Q101 qualified
- Moisture sensitivity level: Level 1

Exterior



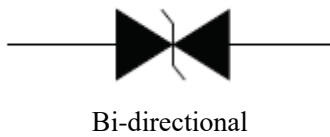
Application Information

- Automotive DC Port

Package (Top View)



Schematic Symbol



Agency Approvals

Icon	Description
RoHS	Compliance with 2011/65/EU

Part Numbering and Electrical Parameter

Part Number	VR	VBR	VBR	It	Vc@Ipp ^①		IR@VR	
	(V)	min.(V)	max.(V)		(mA)	(V)	(A)	max (uA) @25°C
BV-SM8S14CA	14	15.6	17.2	5	23.2	284	10	150
BV-SM8S15CA	15	16.7	18.5	5	24.4	270	10	150
BV-SM8S16CA	16	17.8	19.7	5	26	254	10	150
BV-SM8S17CA	17	18.9	20.9	5	27.6	239	10	150
BV-SM8S18CA	18	20.0	22.1	5	29.2	226	10	150
BV-SM8S20CA	20	22.2	24.5	5	32.4	204	10	150
BV-SM8S22CA	22	24.4	26.9	5	35.5	186	10	150

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Part Number	VR	VBR	VBR	It	Vc@Ipp ^①		IR@VR	
	(V)	min.(V)	max.(V)	(mA)	(V)	(A)	max (uA) @25°C	max (uA) @150°C
BV-SM8S24CA	24	26.7	29.5	5	38.9	170	10	150
BV-SM8S26CA	26	28.9	31.9	5	42.1	157	10	150
BV-SM8S28CA	28	31.1	34.4	5	45.4	145	10	150
BV-SM8S30CA	30	33.3	36.8	5	48.4	136	10	150
BV-SM8S33CA	33	36.7	40.6	5	53.3	124	10	150
BV-SM8S36CA	36	40.0	44.2	5	58.1	114	10	150
BV-SM8S40CA	40	44.4	49.1	5	64.5	102	10	150
BV-SM8S43CA	43	47.8	52.8	5	69.4	95.1	10	150

Note: Absolute maximum ratings measured at T= 25°C RH = 45%-75% (unless otherwise noted)

①Surge Waveform: 10/1000MS

Part Number System

BV—SM8S XX C A
(1) (2) (3) (4) (5)

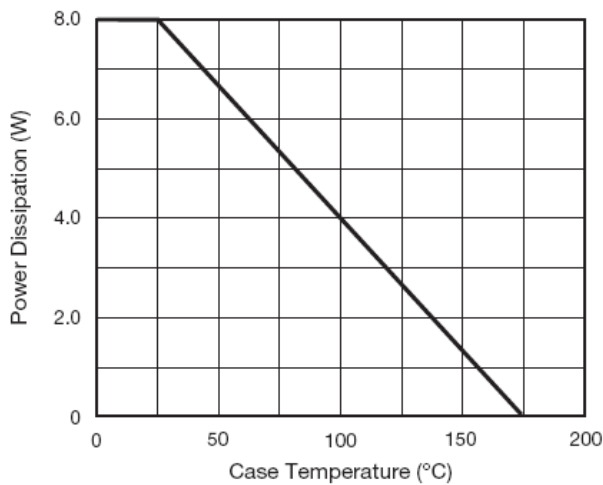
- (1) Transient Voltage Suppressor
- (2) Series Code: Means 6600 Watts series
- (3) VR=XXV
- (4) Bi-directional polarity
- (4) Suffix 'A' denotes 5% tolerance devices

Mark

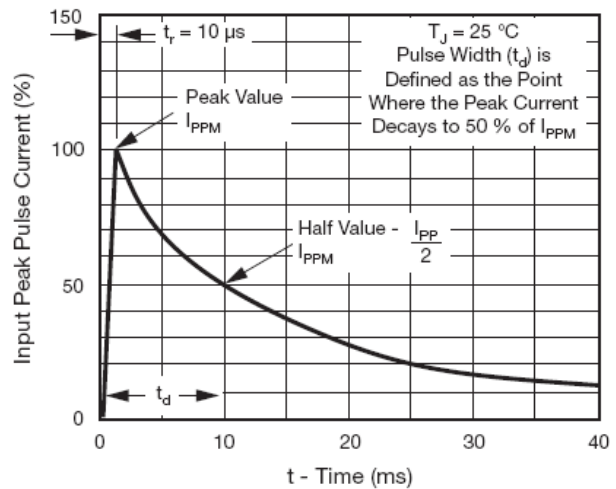


SM8SXXCA:Part Number

Typical Characteristics



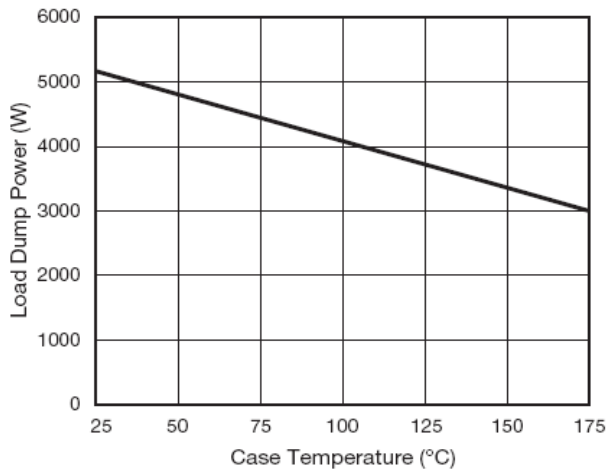
Power Derating Curve



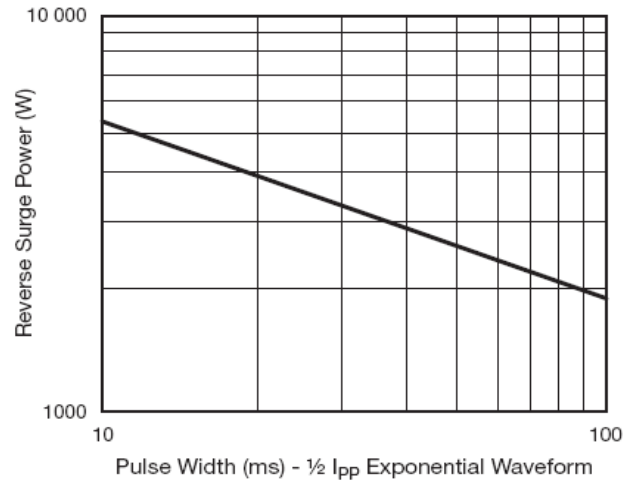
Pulse Waveform

Transient Voltage Suppressor

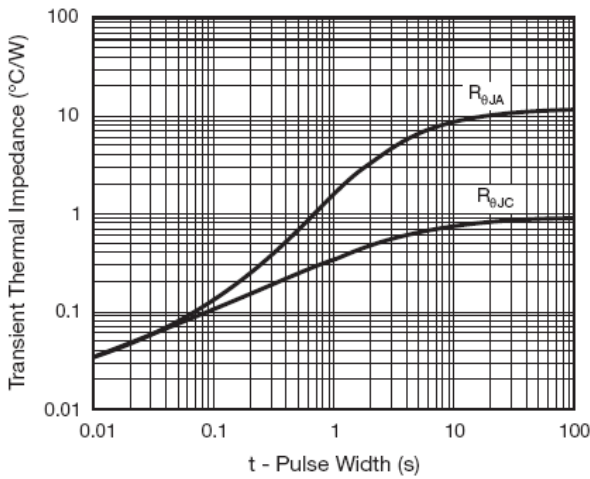
BV-SM8SXXCA Series



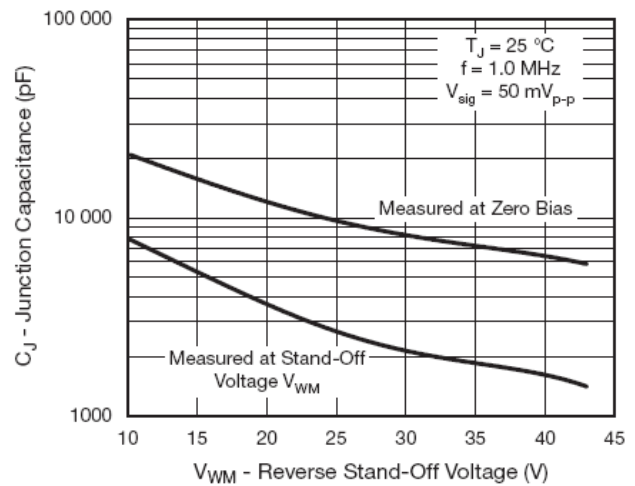
Load Dump Power Characteristics (10ms Exponential Waveform)



Reverse Power Capability



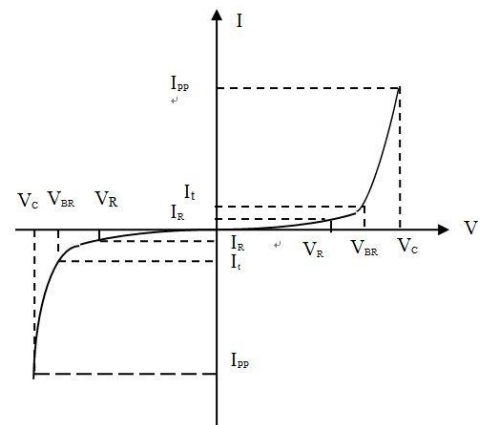
Typical Transient Thermal Impedance



Typical Junction Capacitance

V-I Curve

Parameters	Definition
V _F	Forward Voltage drop for UNI-directional
V _C	Clamping Voltage
I _{pp}	Surge Waveform 10/1000μs
V _R	Stand-off Voltage
V _{BR}	Breakdown Voltage
I _R	Reverse Leakage Current
I _t	Test Current
P _{pp}	Peak Pulse Power Dissipation



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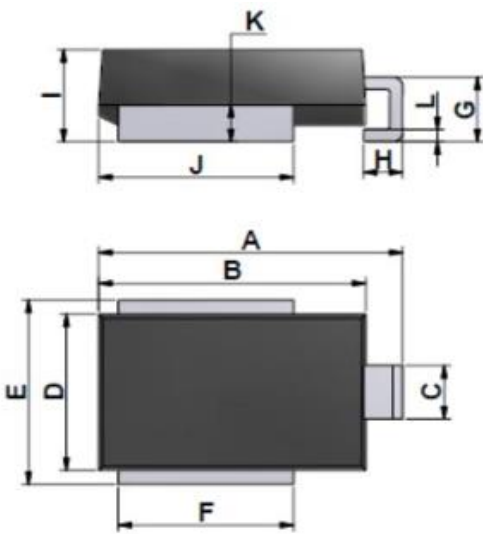
Thermal Considerations

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

Physical Characteristics

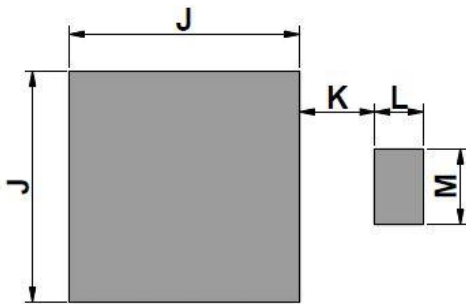
Lead Material	Copper Alloy
Body Material	UL recognized epoxy meeting flammability classification 94V-0
Terminal Finish	100% Matte-Tin Plated

Product Dimensions



Dimension	Millimeters	Inches
A	15.5 ± 0.5	0.610 ± 0.020
B	13.5 ± 0.4	0.531 ± 0.016
C	2.7 ± 0.4	0.106 ± 0.016
D	8.5 ± 0.4	0.335 ± 0.016
E	10 ± 0.5	0.394 ± 0.020
F	9 ± 0.5	0.354 ± 0.020
G	3 ± 0.7	0.118 ± 0.028
H	2 ± 0.5	0.079 ± 0.020
I	4.9 ± 0.5	0.193 ± 0.020
J	10 ± 0.5	0.394 ± 0.020
K	2 ± 0.2	0.079 ± 0.008
L	0.6 ± 0.2	0.024 ± 0.008

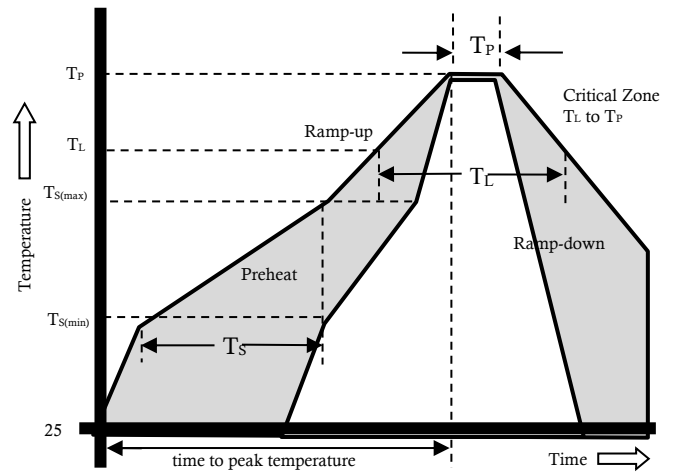
Recommended Soldering Pad



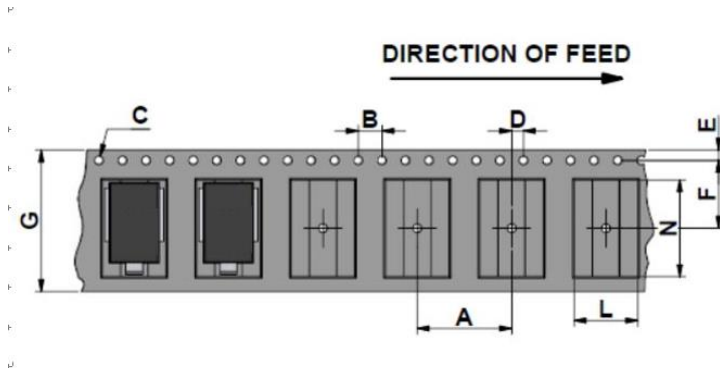
Dimension	Millimeters	Inches
J	10.4	0.409
K	2.9	0.114
L	2.7	0.106
M	3.4	0.134

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 (Liquidus) T _L to peak		3°C/second max
T _{S(max)} to T _L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T _L) (Liquidus)	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/s max
Time 25°C to peak Temperature (T _P)		8 min max.
Do not exceed		260°C



Package Reel Information



REF	mm	inch
A	16±0.3	0.630±0.012
B	4±0.2	0.157±0.008
C	∅1.5±0.2	∅0.059±0.008
D	2±0.2	0.079±0.008
E	1.75±0.2	0.069±0.008
F	11.5±0.3	0.453±0.012
G	24±0.4	0.945±0.016
L	10.77±0.5	0.424±0.020
N	16.33±0.5	0.643±0.020

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)	CARTON SIZE(mm)		
				L	W	H
TAPING	750	6,000	330	360	360	385