SMBJxxCA
Transient Voltage Suppressor
5V to 220V
1-Line Surge Protection

PROTECTION PRODUCTS

Description

SMBJxxCA are designed to protect sensitive electronics from damage or latch-up due to EOS, lightning, CDE, and ESD. They feature large cross-sectional area junctions for conducting high transient currents. These devices offer desirable characteristics for board level protection including fast response time, low operating and clamping voltage, and no device degradation.

SMBJxxCA series may be used to protect 5V to 220V systems. They feature high surge current capability and high peak power rating, making them ideal for use in harsh transient environments.

Features

- Protects one data or power line
- Bidirectional
- High peak pulse current capability
- Operating voltage options: 5V to 220V

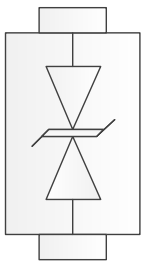
Mechanical Characteristics

- DO-214AA(SMB) package
- Case: Molded plastic
- Case material: Molding compound, UL Flammability classification 94V-0, (No Br. Sb. Cl.)
- RoHS/WEEE Compliant with applied RoHS exemption 7(a)
- Halogen-free
- Marking: Marking code + Date Code
- Packaging: Tape and Reel
- Weight: 0.003 ounce, 0.093 gram

Applications

- Industrial Equipment
- Telecom/Datacom

Schematic & Pin Configuration



Bidirectional
SMBJxxCA

Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Power dissipation at T_J = 25 °C, tp = 1ms	P_{PK}	600	W
Typical Thermal Resistance (1)	$R_{\theta JA}$ $R_{\theta JL}$ $R_{\theta JC}$	90 21 25	°C/W
Operating Temperature	T_J	-55 to +175	°C
Storage Temperature	T_{STG}	-55 to +175	°C

Electrical Characteristics (T=25°C unless otherwise specified)

Part number	Reverse Working Voltage - V_{RWM} (V)	Breakdown Voltage - V_{BR} (V) at I_T (2)		Maximum Reverse Voltage - V_{RSM} at I_{RSM} (Clamping Voltage)	Maximum Reverse Surge Current - I_{RSM} (A)	Maximum Reverse Leakage - I_R (µA) at V_{RWM}
		Min.	Max.			
SMBJ5.0CA	5.0	6.4	7.1	9.2	65.2	1600
SMBJ6.0CA	6.0	6.7	7.4	10.3	58.3	1600
SMBJ6.5CA	6.5	7.2	8.0	11.2	53.6	1000
SMBJ7.0CA	7.0	7.8	8.6	12.0	50.0	400
SMBJ7.5CA	7.5	8.3	9.2	12.9	46.5	200
SMBJ8.0CA	8.0	8.9	9.8	13.6	44.1	100
SMBJ8.5CA	8.5	9.4	10.4	14.4	41.7	40.0
SMBJ9.0CA	9.0	10.0	11.1	15.4	39.0	20.0
SMBJ10CA	10.0	11.1	12.3	17.0	35.3	10.0
SMBJ11CA	11.0	12.2	13.5	18.2	33.0	1.0
SMBJ12CA	12.0	13.3	14.7	19.9	30.2	1.0
SMBJ13CA	13.0	14.4	15.9	21.5	27.9	1.0
SMBJ14CA	14.0	15.6	17.2	23.2	25.8	1.0
SMBJ15CA	15.0	16.7	18.5	24.4	24.0	1.0
SMBJ16CA	16.0	17.8	19.7	26.0	23.1	1.0
SMBJ17CA	17.0	18.9	20.9	27.6	21.7	1.0
SMBJ18CA	18.0	20	22.1	29.2	20.5	1.0
SMBJ20CA	20.0	22.2	24.5	32.4	18.5	1.0
SMBJ22CA	22.0	22.4	27.0	35.5	16.9	1.0
SMBJ24CA	24.0	26.7	29.5	38.9	15.4	1.0
SMBJ26CA	26.0	28.9	31.9	42.1	14.2	1.0

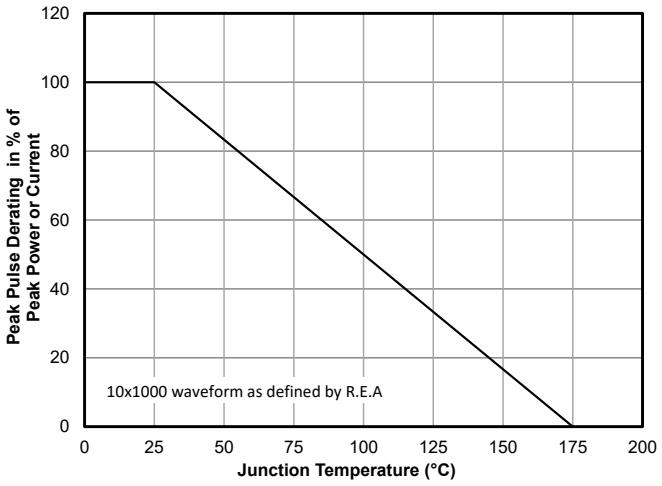
Electrical Characteristics (T=25°C unless otherwise specified)

Part number	Reverse Working Voltage - V_{RWM} (V)	Breakdwon Voltage - V_{BR} (V) at I_T [2]		Maximum Reverse Voltage - V_{RSM} at I_{RSM} (Clamping Voltage)	Maximum Reverse Surge Current - I_{RSM} (A)	Maximum Reverse Leakage - I_R (µA) at V_{RWM}
		Min.	Max.			
SMBJ28CA	28.0	31.1	34.4	45.4	13.2	1.0
SMBJ30CA	30.0	33.3	36.8	48.4	12.4	1.0
SMBJ33CA	33.0	36.7	40.6	53.3	11.3	1.0
SMBJ36CA	36.0	40.0	44.2	58.1	10.3	1.0
SMBJ40CA	40.0	44.4	49.1	64.5	9.3	1.0
SMBJ43CA	43.0	47.8	52.8	69.4	8.6	1.0
SMBJ45CA	45.0	50.0	55.3	72.7	8.3	1.0
SMBJ48CA	48.0	53.3	58.9	77.4	7.7	1.0
SMBJ51CA	51.0	56.7	62.7	82.4	7.3	1.0
SMBJ54CA	54.0	60.0	66.3	87.1	6.9	1.0
SMBJ58CA	58.0	64.4	71.2	93.6	6.4	1.0
SMBJ60CA	60.0	66.7	73.7	96.8	6.2	1.0
SMBJ64CA	64.0	71.1	78.6	103	5.8	1.0
SMBJ70CA	70.0	77.8	86.0	113	5.3	1.0
SMBJ75CA	75.0	83.3	92.1	121	4.9	1.0
SMBJ78CA	78.0	86.7	95.8	126	4.7	1.0
SMBJ85CA	85.0	94.4	104	137	4.4	1.0
SMBJ90CA	90.0	100	111	146	4.1	1.0
SMBJ100CA	100.0	111	123	162	3.7	1.0
SMBJ110CA	110.0	122	135	177	3.4	1.0
SMBJ120CA	120.0	133	147	193	3.1	1.0
SMBJ130CA	130.0	144	159	209	2.9	1.0
SMBJ150CA	150.0	167	185	243	2.5	1.0
SMBJ160CA	160.0	178	197	259	2.3	1.0
SMBJ170CA	170.0	189	209	275	2.2	1.0
SMBJ188CA	188.0	209	231	328	1.83	1.0
SMBJ200CA	200.0	224	247	324	1.9	1.0
SMBJ220CA	220.0	246	272	356	1.7	1.0

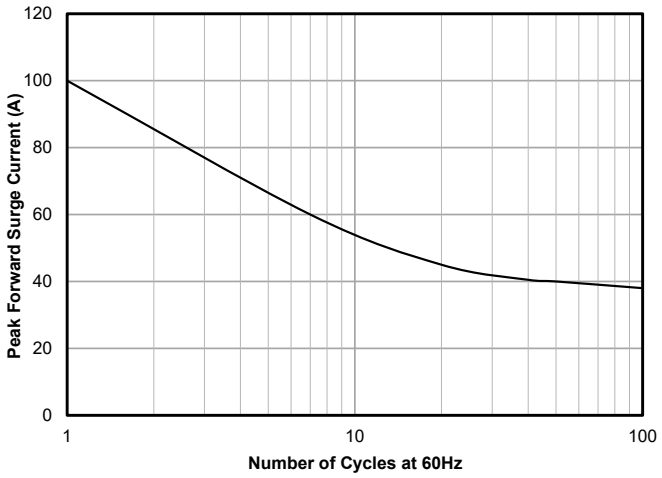
Notes:
1. Thermal resisitance from junction to ambient, lead and case.
2. I_T = 10mA for devices with $V_{RWM} \leq 7V$
I_T = 1mA for devices with $V_{RWM} \geq 7.5V$

Typical Characteristics

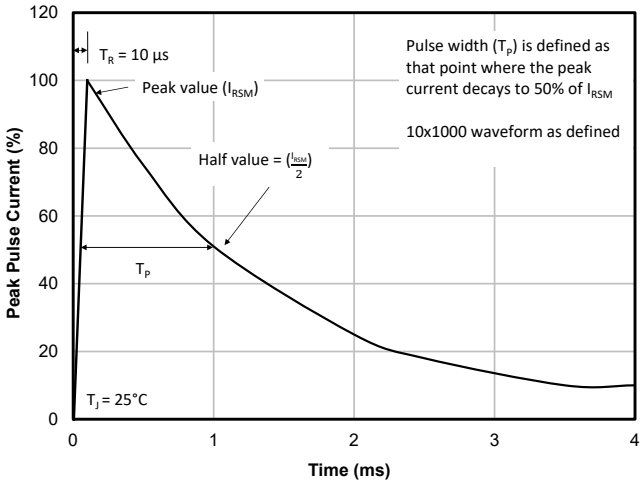
Pulse Derating Curve



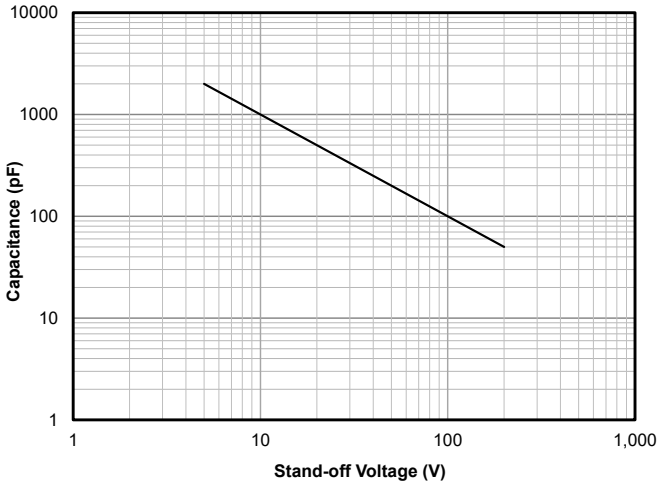
Maximum Non-Repetitive Surge Current



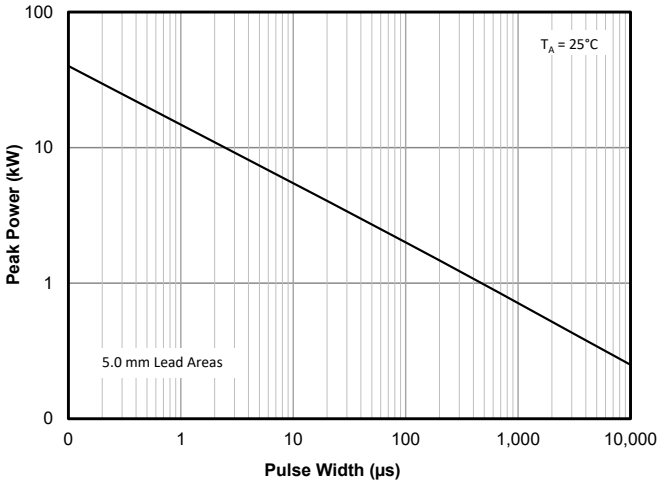
Pulse Waveform



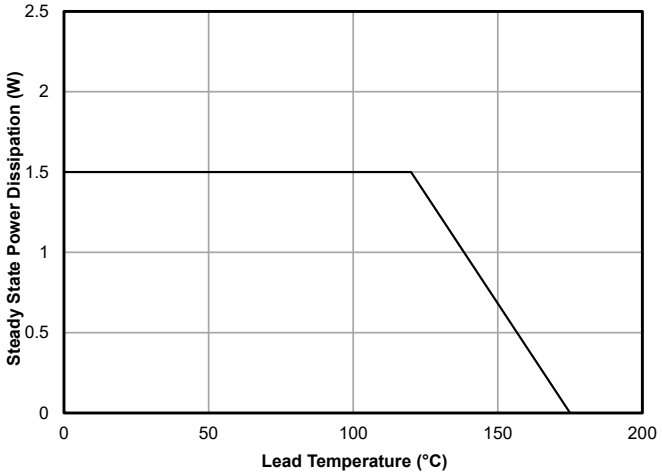
Typical Junction Capacitance



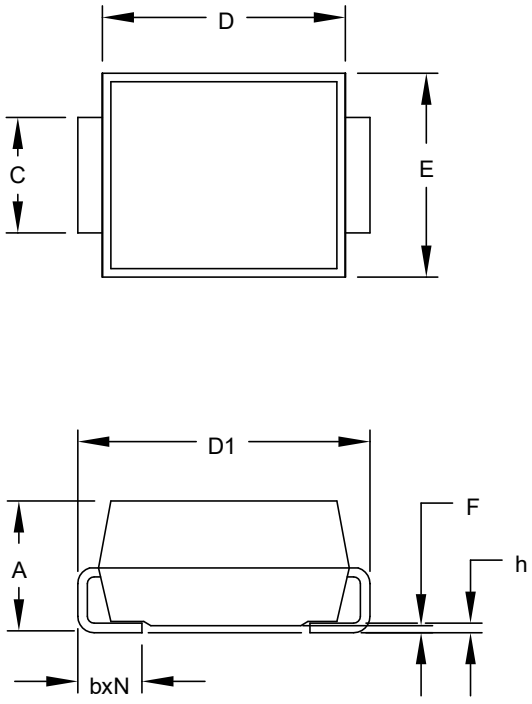
Pulse Rating Curve



Steady State Power Derating Curve



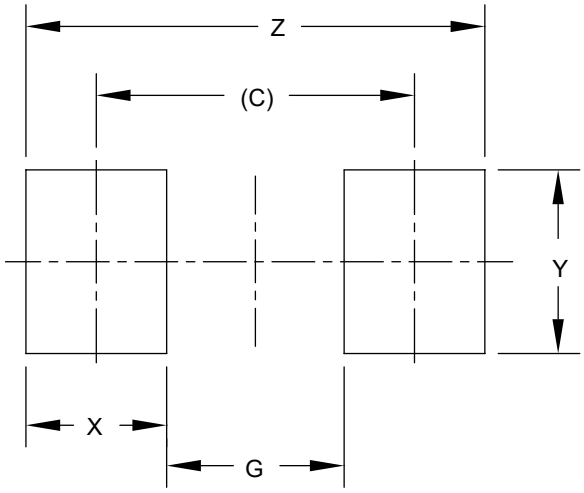
Outline Drawing - SMB



DIMENSIONS		
DIM	MILLIMETERS	
	MIN	MAX
A	2.01	2.50
b	0.76	1.52
C	1.96	2.21
D	4.06	4.57
D1	5.21	5.59
E	3.30	3.94
F	0.05	0.20
h	0.15	0.31
N	2	

NOTES: CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES)

Land Pattern - SMB



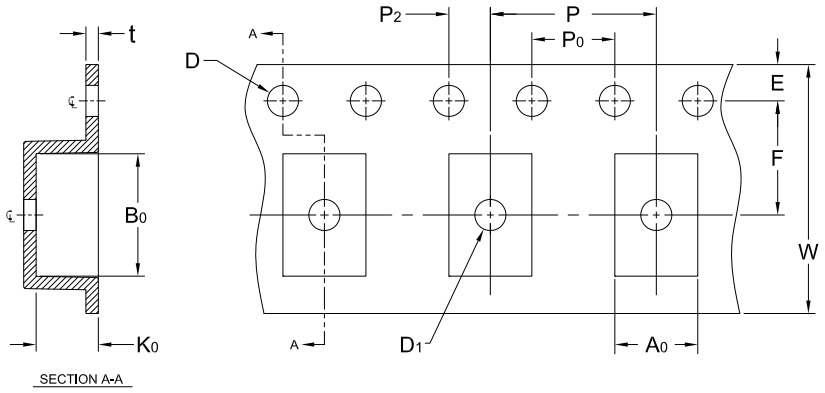
DIMENSIONS	
DIM	MILLIMETERS
C	(5.20)
G	2.90
X	2.30
Y	3.00
Z	7.50

NOTES: CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES)

Marking Code

Notes: Y = Year WW= Week X= Wafer

Tape and Reel Specification



NOTE: ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.

CARRIER TAPE SPECIFICATION												
PACKAGE / DIM	A_0	B_0	K_0	D	D_1 (MIN)	E	F	P	P_0	P_2	t (MAX)	W
DO-214AA (SMB)	3.75±0.1	5.65±0.1	2.55±0.1	1.55±0.05	1.5+0.25/-0	1.75±0.10	5.5±0.05	8.0±0.10	4.0±0.10	2.0±0.05	0.4	12.0±0.15

Ordering Information

Part Number	Marking
SMBJ5.0CA	AE
SMBJ6.0CA	AG
SMBJ6.5CA	AK
SMBJ7.0CA	AM
SMBJ7.5CA	AP
SMBJ8.0CA	AR
SMBJ8.5CA	AT
SMBJ9.0CA	AV
SMBJ10CA	AX
SMBJ11CA	AZ
SMBJ12CA	BE
SMBJ13CA	BG
SMBJ14CA	BK

Part Number	Marking
SMBJ15CA	BM
SMBJ16CA	BP
SMBJ17CA	BR
SMBJ18CA	BT
SMBJ20CA	BV
SMBJ22CA	BX
SMBJ24CA	BZ
SMBJ26CA	CE
SMBJ28CA	CG
SMBJ30CA	CK
SMBJ33CA	CM
SMBJ36CA	CP
SMBJ40CA	CR

Part Number	Marking
SMBJ40CA	CR
SMBJ43CA	CT
SMBJ45CA	CV
SMBJ48CA	CX
SMBJ51CA	CZ
SMBJ54CA	DE
SMBJ58CA	DG
SMBJ60CA	DK
SMBJ64CA	DM
SMBJ70CA	DP
SMBJ75CA	DR
SMBJ78CA	DT

Part Number	Marking
SMBJ85CA	DV
SMBJ90CA	DX
SMBJ100CA	DZ
SMBJ110CA	EE
SMBJ120CA	EG
SMBJ130CA	EK
SMBJ150CA	EM
SMBJ160CA	EP
SMBJ170CA	ER
SMBJ188CA	ET
SMBJ200CA	EV
SMBJ220CA	EX

Part Number	Qty per Reel	Reel Size
SMBJxxCA	3,000	13 Inch

Important Notice

Information relating to this product and the application or design described herein is believed to be reliable, however such information is provided as a guide only and Semtech assumes no liability for any errors in this document, or for the application or design described herein. Semtech reserves the right to make changes to the product or this document at any time without notice. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. Semtech warrants performance of its products to the specifications applicable at the time of sale, and all sales are made in accordance with Semtech's standard terms and conditions of sale.

SEMTECH PRODUCTS ARE NOT DESIGNED, INTENDED, AUTHORIZED OR WARRANTED TO BE SUITABLE FOR USE IN LIFE-SUPPORT APPLICATIONS, DEVICES OR SYSTEMS, OR IN NUCLEAR APPLICATIONS IN WHICH THE FAILURE COULD BE REASONABLY EXPECTED TO RESULT IN PERSONAL INJURY, LOSS OF LIFE OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. INCLUSION OF SEMTECH PRODUCTS IN SUCH APPLICATIONS IS UNDERSTOOD TO BE UNDERTAKEN SOLELY AT THE CUSTOMER'S OWN RISK. Should a customer purchase or use Semtech products for any such unauthorized application, the customer shall indemnify and hold Semtech and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs damages and attorney fees which could arise.

Contact Information

Semtech Corporation
200 Flynn Road, Camarillo, CA 93012
Phone: (805) 498-2111, Fax: (805) 498-3804
www.semtech.com

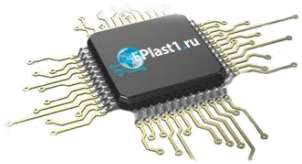
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)
Факс: 8 (812) 320-02-42
Электронная почта: org@eplast1.ru
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.