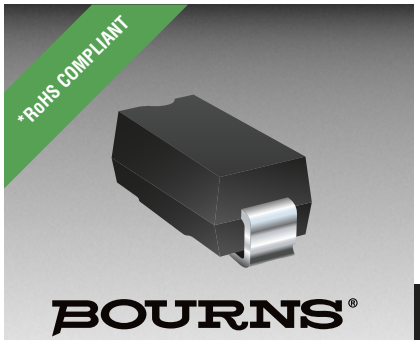

Features

- Surface Mount SMB package
- Standoff Voltage: 12 to 58 volts
- Power Dissipation: 600 watts
- RoHS compliant*
- AEC-Q101 compliant**

Applications

- Protection of power buses
- Protection of I/O interfaces
- Overvoltage transient protection
- Telecom, computer, industrial and consumer electronics applications

SMBJ-Q Transient Voltage Suppressor Diode Series

General Information

Bourns offers Transient Voltage Suppressor Diodes for surge and ESD protection applications, in compact chip package DO-214AA (SMB) size format. The Transient Voltage Suppressor series offers a choice of Working Peak Reverse Voltage from 12 V up to 58 V. Typical fast response times are less than 1.0 picosecond from 0 V to Breakdown Voltage.

Bourns® Chip Diodes conform to JEDEC standards, are easy to handle with standard pick and place equipment and the flat configuration minimizes roll away.

Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Minimum Peak Pulse Power Dissipation (T_P = 1 ms) (Note 1,2)	P_{PK}	600	Watts
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I_{FSM}	100	Amps
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

1. Non-repetitive current pulse, per Pulse Waveform graph and derated above T_A = 25 °C per Pulse Derating Curve.
2. Mounted on 5.0 mm^2 (0.03 mm thick) copper pads to each terminal.
3. 8.3 ms Single Half-Sine Wave duty cycle = 4 pulses maximum per minute (unidirectional units only).

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www.bourns.com

WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.
**"Q" part number suffix indicates AEC-Q101 compliance.

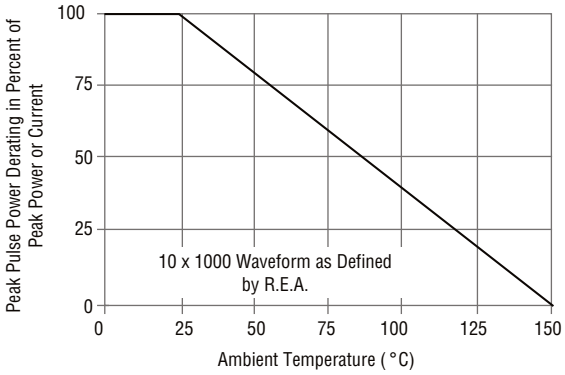
Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Unidirectional Device		Bidirectional Device		Breakdown Voltage V_{BR} (Volts)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{RWM}	Maximum Reverse Voltage @ I_{RSM}	Maximum Reverse Surge Current
Part No.	Marking	Part No.	Marking	Min.	Max.	@ I_T (mA)	V_{RWM} (V)	I_R (μA)	V_{RSM} (V)	I_{RSM} (A)
SMBJ12A-Q	LEQ	SMBJ12CA-Q	BEQ	13.3	14.7	1.0	12	1.0	19.9	30.2
SMBJ13A-Q	LGQ	SMBJ13CA-Q	BGQ	14.4	15.9	1.0	13	1.0	21.5	28.0
SMBJ14A-Q	LKQ	SMBJ14CA-Q	BKQ	15.6	17.2	1.0	14	1.0	23.2	25.9
SMBJ15A-Q	LMQ	SMBJ15CA-Q	BMQ	16.7	18.5	1.0	15	1.0	24.4	24.6
SMBJ16A-Q	LPQ	SMBJ16CA-Q	BPQ	17.8	19.7	1.0	16	1.0	26.0	23.1
SMBJ17A-Q	LRQ	SMBJ17CA-Q	BRQ	18.9	20.9	1.0	17	1.0	27.6	21.8
SMBJ18A-Q	LTQ	SMBJ18CA-Q	BTQ	20.0	22.1	1.0	18	1.0	29.2	20.6
SMBJ20A-Q	LVQ	SMBJ20CA-Q	BVQ	22.2	24.5	1.0	20	1.0	32.4	18.6
SMBJ22A-Q	LXQ	SMBJ22CA-Q	BXQ	24.4	26.9	1.0	22	1.0	35.5	16.9
SMBJ24A-Q	LZQ	SMBJ24CA-Q	BZQ	26.7	29.5	1.0	24	1.0	38.9	15.5
SMBJ26A-Q	MEQ	SMBJ26CA-Q	CEQ	28.9	31.9	1.0	26	1.0	42.1	14.3
SMBJ28A-Q	MGQ	SMBJ28CA-Q	CGQ	31.1	34.4	1.0	28	1.0	45.4	13.3
SMBJ30A-Q	MKQ	SMBJ30CA-Q	CKQ	33.3	36.8	1.0	30	1.0	48.4	12.4
SMBJ33A-Q	MMQ	SMBJ33CA-Q	CMQ	36.7	40.6	1.0	33	1.0	53.3	11.3
SMBJ36A-Q	MPQ	SMBJ36CA-Q	CPQ	40.0	44.2	1.0	36	1.0	58.1	10.4
SMBJ40A-Q	MRQ	SMBJ40CA-Q	CRQ	44.4	49.1	1.0	40	1.0	64.5	9.3
SMBJ43A-Q	MTQ	SMBJ43CA-Q	CTQ	47.8	52.8	1.0	43	1.0	69.4	8.7
SMBJ45A-Q	MVQ	SMBJ45CA-Q	CVQ	50.0	55.3	1.0	45	1.0	72.7	8.3
SMBJ48A-Q	MXQ	SMBJ48CA-Q	CXQ	53.3	58.9	1.0	48	1.0	77.4	7.8
SMBJ51A-Q	MZQ	SMBJ51CA-Q	CZQ	56.7	62.7	1.0	51	1.0	82.4	7.3
SMBJ54A-Q	NEQ	SMBJ54CA-Q	DEQ	60.0	66.3	1.0	54	1.0	87.1	6.9
SMBJ58A-Q	NGQ	SMBJ58CA-Q	DGQ	64.4	71.2	1.0	58	1.0	93.6	6.5

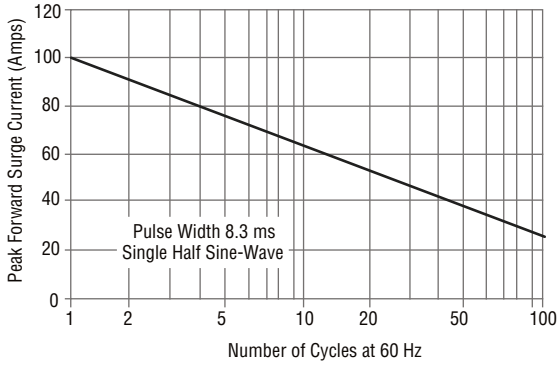
Notes: 1. Suffix 'A' denotes a 5 % tolerance unidirectional device.
2. Suffix 'CA' denotes a 5 % tolerance bidirectional device.

Performance Graphs

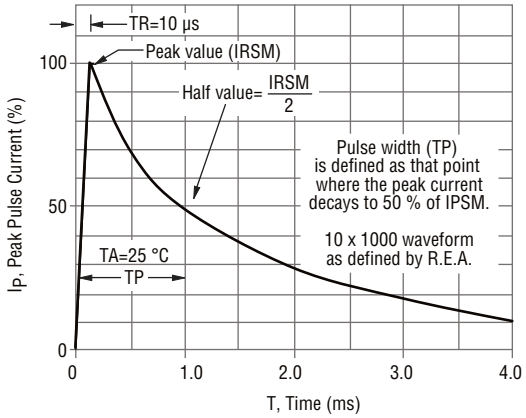
Peak Pulse Power Derating Curve



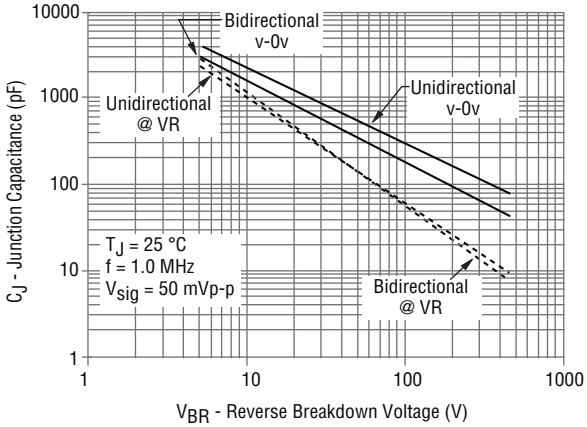
Maximum Non-Repetitive Surge Current



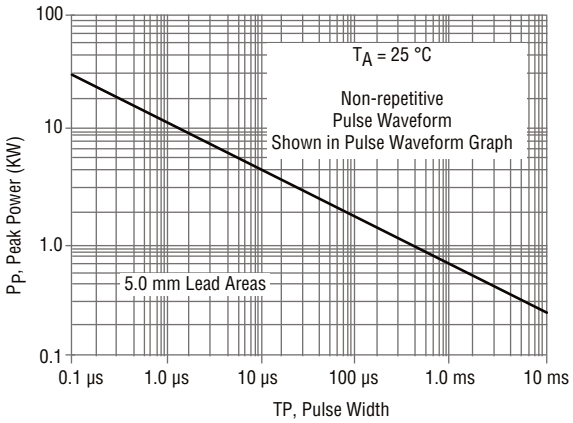
Pulse Waveform



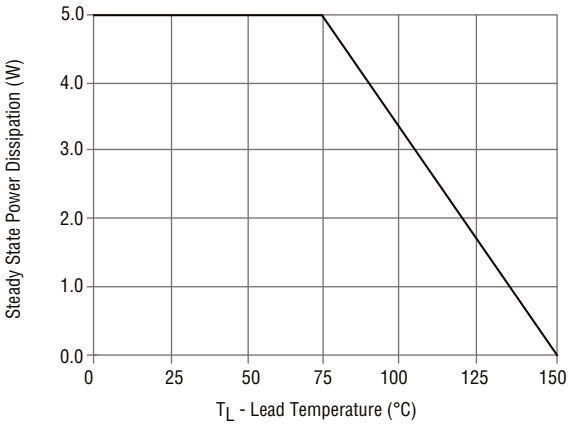
Typical Junction Capacitance



Pulse Rating Curve



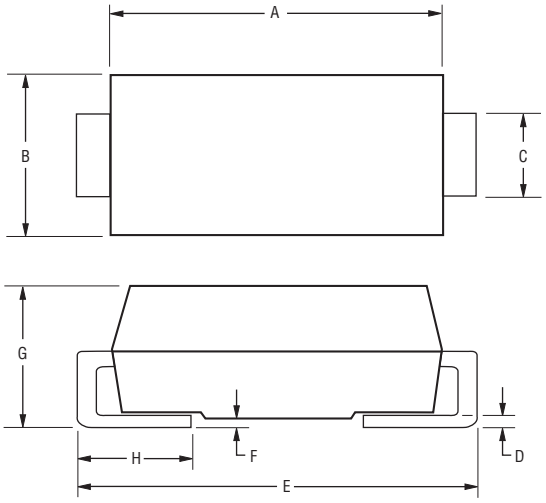
Steady State Power Derating Curve



SMBJ-Q Transient Voltage Suppressor Diode Series

BOURNS®

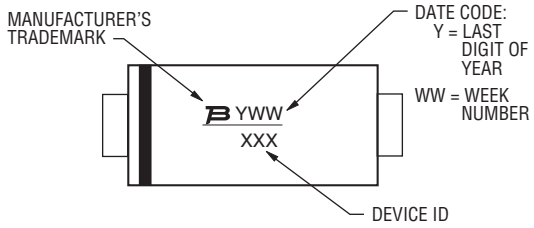
Product Dimensions



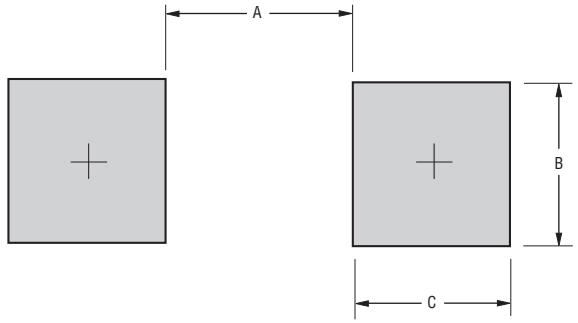
Dimension	SMB (DO-214AA)
A	4.06 - 4.57 (0.160 - 0.180)
B	3.30 - 3.94 (0.130 - 0.155)
C	1.95 - 2.20 (0.077 - 0.087)
D	0.15 - 0.31 (0.006 - 0.112)
E	5.21 - 5.59 (0.205 - 0.220)
F	0.203 (0.008) MAX.
G	2.13 - 2.44 (0.080 - 0.103)
H	0.76 - 1.52 (0.030 - 0.060)

DIMENSIONS: MM / (INCHES)

Typical Part Marking



Recommended Footprint



Dimension	SMB (DO-214AA)
A (Max.)	2.69 (0.106)
B (Min.)	2.10 (0.083)
C (Min.)	1.27 (0.050)

DIMENSIONS: MM / (INCHES)

Physical Specifications

Case .....Molded plastic per UL Class 94V-0
Polarity..... Cathode band indicates unidirectional device
No cathode band indicates bidirectional device

How to Order

SMBJ 12 CA - Q

Package
SMBJ = SMB/DO-214AA

Working Peak Reverse Voltage
12 = 12 V_{RWM} (Volts)

Suffix
A = 5 % Tolerance Unidirectional Device
CA = 5 % Tolerance Bidirectional Device

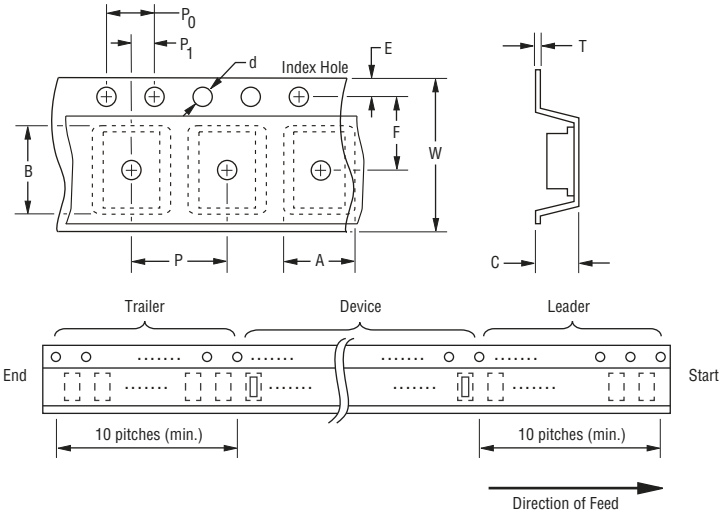
AEC-Q101 Suffix
Q = AEC-Q101 Compliant, 13-inch Reel
QH = AEC-Q101 Compliant, 7-inch Reel

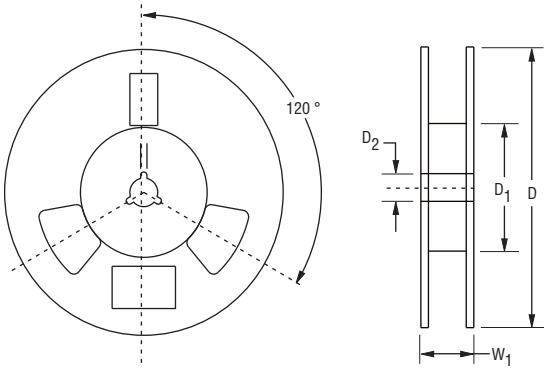
Environmental Specifications

Moisture Sensitivity Level 1
ESD Classification (HBM)..... 3B

Packaging Information

The product will be dispensed in tape and reel format (see diagram below).





DIMENSIONS: MM / (INCHES)

Devices are packed in accordance with EIA 481 standard specifications shown here.

Item	Symbol	SMB (DO-214AA)	
		7-Inch Reel	13-Inch Reel
Carrier Width	A	3.67 ± 0.20 (0.144 ± 0.008)	
Carrier Length	B	5.60 ± 0.20 (0.220 ± 0.008)	
Carrier Depth	C	2.57 ± 0.20 (0.101 ± 0.008)	
Sprocket Hole	d	1.50 ± 0.10 (0.059 ± 0.004)	
Reel Outside Diameter	D	178 (7.008)	330 (12.992)
Reel Inner Diameter	D_1	50.0 (1.969) MIN.	
Feed Hole Diameter	D_2	13.0 ± 0.20 (0.512 ± 0.008)	
Sprocket Hole Position	E	1.75 ± 0.10 (0.069 ± 0.004)	
Punch Hole Position	F	5.50 ± 0.05 (0.217 ± 0.002)	
Punch Hole Pitch	P	8.00 ± 0.10 (0.315 ± 0.004)	
Sprocket Hole Pitch	P_0	4.00 ± 0.10 (0.157 ± 0.004)	
Embossment Center	P_1	2.00 ± 0.05 (0.079 ± 0.002)	
Overall Tape Thickness	T	0.30 ± 0.10 (0.012 ± 0.004)	
Tape Width	W	12.00 ± 0.30 (0.472 ± 0.012)	
Reel Width	W_1	18.4 (0.724) MAX.	
Quantity per Reel	--	500	3,000

REV. 11/18

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PDF: http://www.bourns.com/docs/Legal/disclaimer.pdf

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- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
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- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
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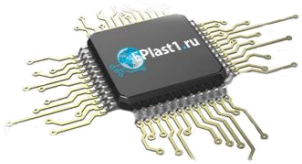
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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