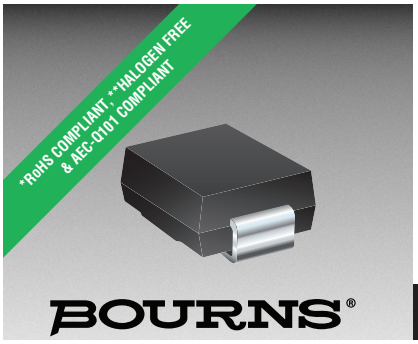
Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Features

- RoHS compliant* and halogen free**
- Surface mount SMC package
- Standoff voltage: 12 to 43 volts
- Peak Pulse Power: 5000 watts
- AEC-Q101 compliant***

Applications

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

5.0SMDJ-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-214AB (SMC) size format. The Transient Voltage Suppressor series offers a choice of Working Peak Reverse Voltage from 12 V up to 43 V and Breakdown Voltage up to 52.8 V. Typical fast response times are less than 1.0 ps 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}	5000	Watts
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Note 3,4)	I_{FSM}	300	Amps
Steady State Power Dissipation @ TL = 50 °C	$P_{M(AV)}$	6.5	Watts
Maximum Instantaneous Forward Voltage @ I_{PP} = 100 A (For Unidirectional Units Only)	V_F	5	Volts
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. Thermal Resistance Junction to Lead.
3. 8.3 ms Single Sine Wave duty cycle = 4 pulses maximum per minute (unidirectional units only).
4. Mounted on 8.0 mm x 8.0 mm copper pad area to each terminal.

BOURNS®

Asia-Pacific:
Tel: +886-2 2562-4117
Email: asiacus@bourns.com

Europe:
Tel: +36 88 520 390
Email: eurocus@bourns.com

The Americas:
Tel: +1-951 781-5500
Email: americus@bourns.com

www.bourns.com

How to Order

5.0SMDJ 12 CA - Q

Package
5.0SMDJ = SMC/DO-214AB

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

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

AEC-Q101 Compliant Suffix
Q = AEC-Q101 Compliant, 3000 pcs. per 13-inch Reel
QH = AEC-Q101 Compliant, 500 pcs. per 7-inch Reel

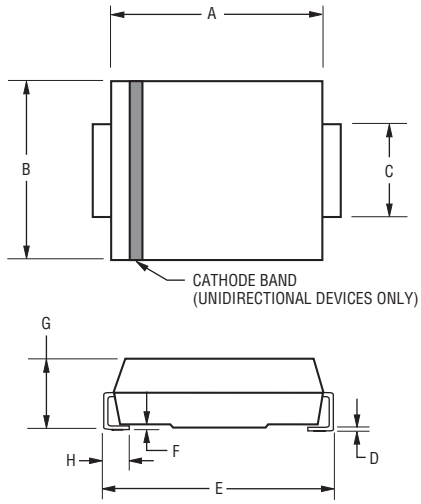
* RoHS Directive 2015/863, Mar 31, 2015 and Annex.
** Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.
*** Q suffix for automotive and other applications requiring appropriate AEC-Q101 compliance for electronic limiters.

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

Unidirectional Device		Bidirectional Device		Breakdown Voltage V_{BR} (Volts)			Reverse Standoff Voltage	Maximum Reverse Leakage @ V_{RWM}	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current
Part Number	Part Marking	Part Number	Part Marking	Min.	Max.	@ I_T (mA)	V_{RWM} (V)	I_R (μA)	V_C (V)	I_{PP} (A)
5.0SMDJ12A-Q	5PEPQ	5.0SMDJ12CA-Q	5BEPQ	13.3	14.7	1	12	2	19.9	252.0
5.0SMDJ13A-Q	5PEQQ	5.0SMDJ13CA-Q	5BEQQ	14.4	15.9	1	13	2	21.5	233.0
5.0SMDJ14A-Q	5PERQ	5.0SMDJ14CA-Q	5BERQ	15.6	17.2	1	14	2	23.2	216.0
5.0SMDJ15A-Q	5PESQ	5.0SMDJ15CA-Q	5BESQ	16.7	18.5	1	15	2	24.4	205.0
5.0SMDJ16A-Q	5PETQ	5.0SMDJ16CA-Q	5BETQ	17.8	19.7	1	16	2	26.0	193.0
5.0SMDJ17A-Q	5PEUQ	5.0SMDJ17CA-Q	5BEUQ	18.9	20.9	1	17	2	27.6	181.0
5.0SMDJ18A-Q	5PEVQ	5.0SMDJ18CA-Q	5BEVQ	20.0	22.1	1	18	2	29.2	172.0
5.0SMDJ20A-Q	5PEWQ	5.0SMDJ20CA-Q	5BEWQ	22.2	24.5	1	20	2	32.4	155.0
5.0SMDJ22A-Q	5PEXQ	5.0SMDJ22CA-Q	5BEXQ	24.4	26.9	1	22	2	35.5	141.0
5.0SMDJ24A-Q	5PEZQ	5.0SMDJ24CA-Q	5BEZQ	26.7	29.5	1	24	2	38.9	129.0
5.0SMDJ26A-Q	5PFEQ	5.0SMDJ26CA-Q	5BFEQ	28.9	31.9	1	26	2	42.1	119.0
5.0SMDJ28A-Q	5PFGQ	5.0SMDJ28CA-Q	5BFGQ	31.1	34.4	1	28	2	45.4	110.0
5.0SMDJ30A-Q	5PFKQ	5.0SMDJ30CA-Q	5BFKQ	33.3	36.8	1	30	2	48.4	103.0
5.0SMDJ33A-Q	5PFMQ	5.0SMDJ33CA-Q	5BFMQ	36.7	40.6	1	33	2	53.3	93.9
5.0SMDJ36A-Q	5PFPQ	5.0SMDJ36CA-Q	5BFPQ	40.0	44.2	1	36	2	58.1	86.1
5.0SMDJ40A-Q	5PFRQ	5.0SMDJ40CA-Q	5BFRQ	44.4	49.1	1	40	2	64.5	77.6
5.0SMDJ43A-Q	5PFTQ	5.0SMDJ43CA-Q	5BFTQ	47.8	52.8	1	43	2	69.4	72.1

Notes:
1. 'Q' suffix denotes AEC-Q101 compliance.

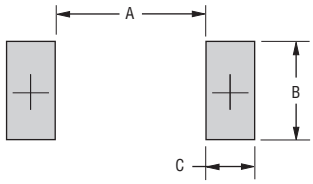
Product Dimensions



Dimension	SMC (DO-214AB)
A	6.60 - 7.11 (0.260 - 0.280)
B	5.59 - 6.22 (0.220 - 0.245)
C	2.90 - 3.20 (0.114 - 0.126)
D	0.15 - 0.31 (0.006 - 0.112)
E	7.75 - 8.13 (0.305 - 0.320)
F	0.05 - 0.20 (0.002 - 0.008)
G	2.01 - 2.62 (0.080 - 0.103)
H	0.76 - 1.52 (0.030 - 0.060)

DIMENSIONS: MM / (INCHES)

Recommended Footprint



Dimension	SMC (DO-214AB)
A (Max.)	4.69 (0.185)
B (Min.)	3.07 (0.121)
C (Min.)	1.53 (0.060)

DIMENSIONS: MM / (INCHES)

Physical Specifications

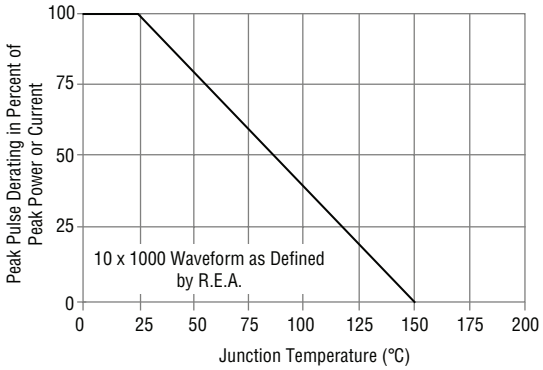
Encapsulation.....Molded plastic per UL Class 94V-0
Polarity..... Cathode band indicates unidirectional device
No cathode band indicates bidirectional device

Environmental Specifications

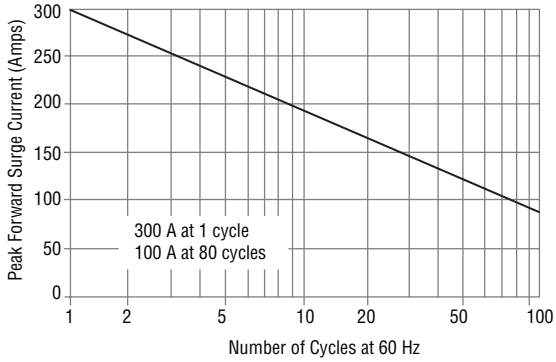
Moisture Sensitivity Level.....1
ESD Classification (HBM)..... 3B

Rating & Characteristic Curves

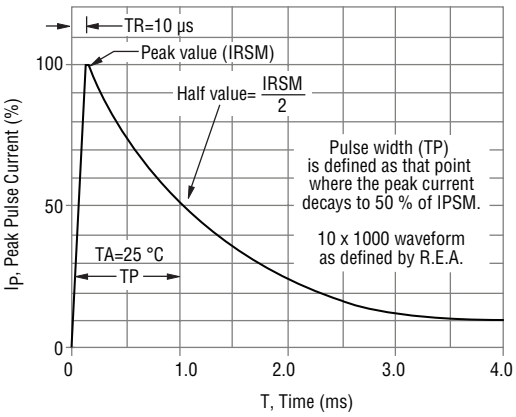
Pulse Derating Curve



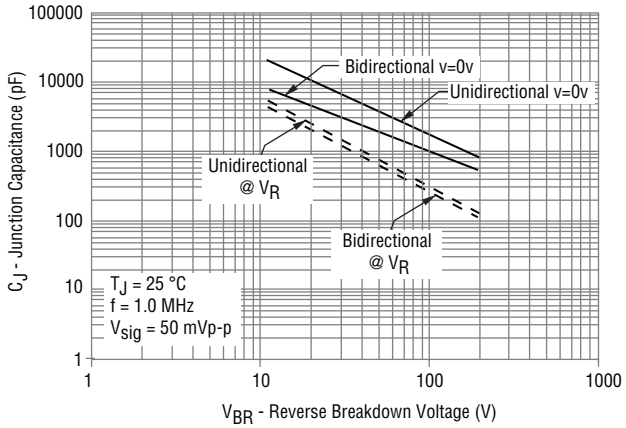
Maximum Non-Repetitive Surge Current



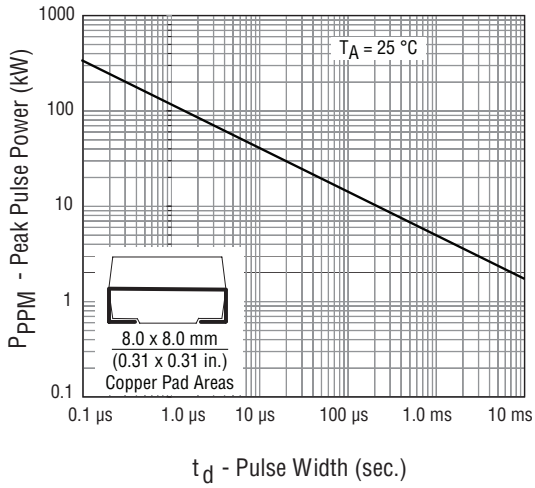
Pulse Waveform



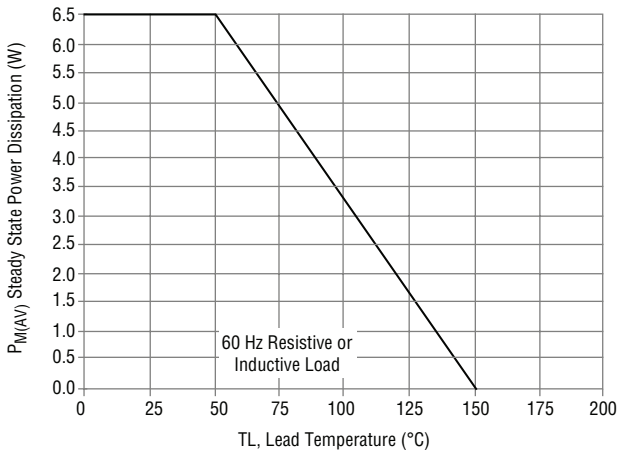
Typical Junction Capacitance



Pulse Rating Curve

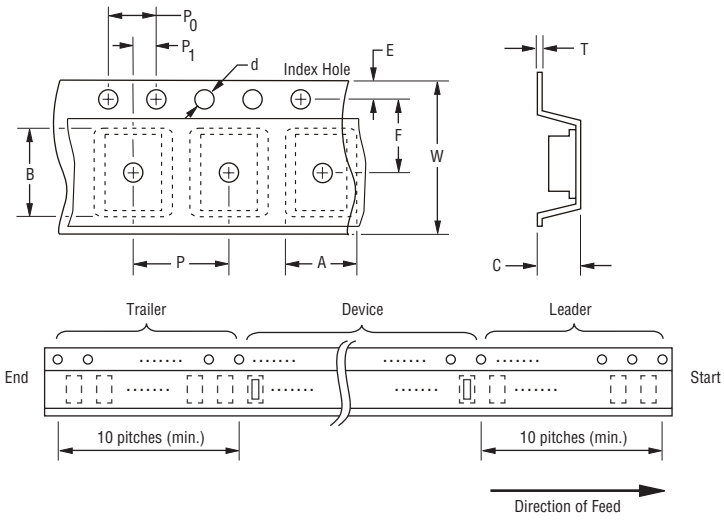


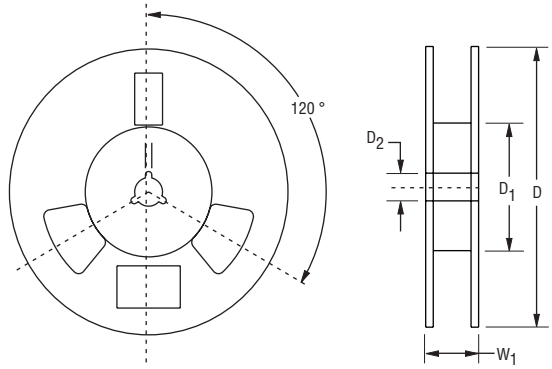
Steady State Power Derating Curve



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 standard EIA-481-D and specifications shown here.

Item	Symbol	SMC (DO-214AB)	
		7-Inch Reel	13-Inch Reel
Carrier Width	A	6.0 ± 0.20 (0.236 ± 0.079)	
Carrier Length	B	8.3 ± 0.20 (0.327 ± 0.008)	
Carrier Depth	C	2.5 ± 0.20 (0.098 ± 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 +0.50/-0.20 (0.512 +0.020/-0.008)	
Sprocket Hole Position	E	1.75 ± 0.10 (0.069 ± 0.004)	
Punch Hole Position	F	7.50 ± 0.10 (0.295 ± 0.004)	
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 ± 0.10 (0.079 ± 0.004)	
Overall Tape Thickness	T	0.30± 0.10 (0.012 ± 0.004)	
Tape Width	W	16.00 ± 0.30 (0.630 ± 0.012)	
Reel Width	W_1	22.4 (0.882) MAX.	
Quantity per Reel	--	500	3,000

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