Features

- Surface Mount SMC package
- Breakdown Voltage: 15 to 68 volts
- Power Dissipation: 1500 watts
- RoHS compliant* and halogen free**
- AEC-Q101 compliant***

Applications

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

1.5SMC-Q Transient Voltage Suppressor Diode Series

General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components.

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 Breakdown Voltages from 15 V up to 68 V. Typical fast response times are less than 1.0 picosecond for unidirectional devices and less than 5.0 picoseconds for bidirectional devices from 0 V to Minimum Breakdown Voltage.

Bourns® Chip Diodes conform to JEDEC standards, are easy to handle with standard pick and place equipment and their 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}	1500	Watts
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I_{FSM}	200	Amps
Maximum Instantaneous Forward Voltage @ I_{PP} = 100 A (For Unidirectional Units Only)	V_F	3.5	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 Half-Sine Wave duty cycle = 4 pulses maximum per minute (unidirectional units only).

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How to Order

1.5SMC 15 CA - Q

Series
1.5SMC = SMC/DO-214AB

Breakdown Voltage
15 to 68 = 15 to 68 V_{BR}

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

AEC-Q101 Suffix
Q = AEC-Q101 Compliant, 13-inch reel (3000 pcs.)

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

* 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 applications requiring appropriate AEC-Q101 compliance for electronic limiters.

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Users should verify actual device performance in their specific applications.
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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)
1.5SMC15A-Q	15AQ	1.5SMC15CA-Q	15CQ	14.3	15.8	1	12.8	1	21.2	71.7
1.5SMC16A-Q	16AQ	1.5SMC16CA-Q	16CQ	15.2	16.8	1	13.6	1	22.5	67.6
1.5SMC18A-Q	18AQ	1.5SMC18CA-Q	18CQ	17.1	18.9	1	15.3	1	25.2	60.3
1.5SMC20A-Q	20AQ	1.5SMC20CA-Q	20CQ	19	21	1	17.1	1	27.7	54.9
1.5SMC22A-Q	22AQ	1.5SMC22CA-Q	22CQ	20.9	23.1	1	18.8	1	30.6	49.7
1.5SMC24A-Q	24AQ	1.5SMC24CA-Q	24CQ	22.8	25.2	1	20.5	1	33.2	45.8
1.5SMC27A-Q	27AQ	1.5SMC27CA-Q	27CQ	25.7	28.4	1	23.1	1	37.5	40.5
1.5SMC30A-Q	30AQ	1.5SMC30CA-Q	30CQ	28.5	31.5	1	25.6	1	41.4	36.7
1.5SMC33A-Q	33AQ	1.5SMC33CA-Q	33CQ	31.4	34.7	1	28.2	1	45.7	33.3
1.5SMC36A-Q	36AQ	1.5SMC36CA-Q	36CQ	34.2	37.8	1	30.8	1	49.9	30.5
1.5SMC39A-Q	39AQ	1.5SMC39CA-Q	39CQ	37.1	41	1	33.3	1	53.9	28.2
1.5SMC43A-Q	43AQ	1.5SMC43CA-Q	43CQ	40.9	45.2	1	36.8	1	59.3	25.6
1.5SMC47A-Q	47AQ	1.5SMC47CA-Q	47CQ	44.7	49.4	1	40.2	1	64.8	23.5
1.5SMC51A-Q	51AQ	1.5SMC51CA-Q	51CQ	48.5	53.6	1	43.6	1	70.1	21.7
1.5SMC56A-Q	56AQ	1.5SMC56CA-Q	56CQ	53.2	58.8	1	47.8	1	77	19.7
1.5SMC62A-Q	62AQ	1.5SMC62CA-Q	62CQ	58.9	65.1	1	53	1	85	17.9
1.5SMC68A-Q	68AQ	1.5SMC68CA-Q	68CQ	64.6	71.4	1	58.1	1	92	16.5

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

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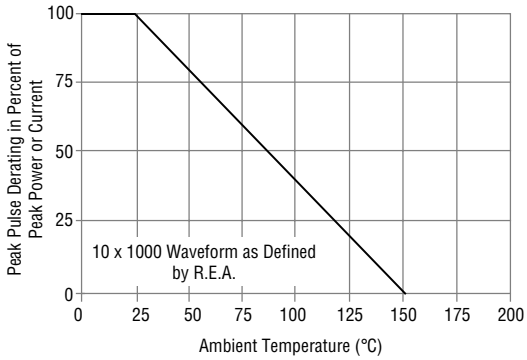
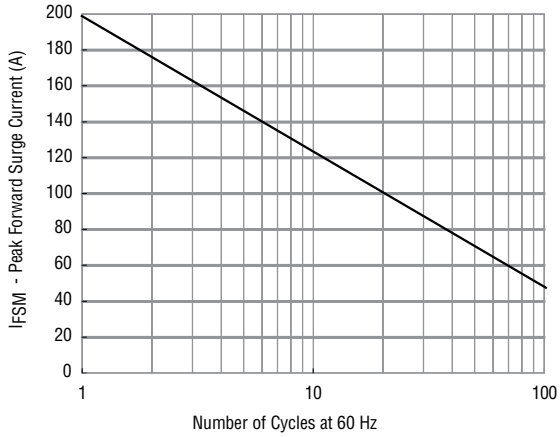
Rating & Characteristic Curves

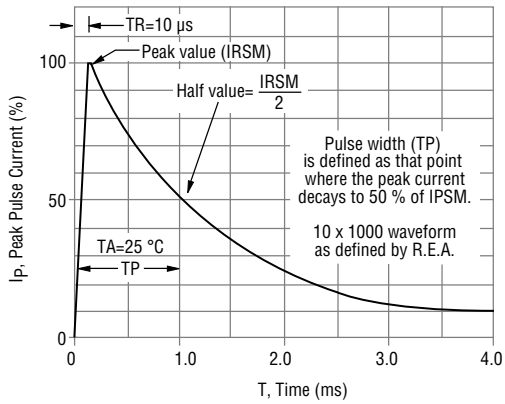
Pulse Derating Curve



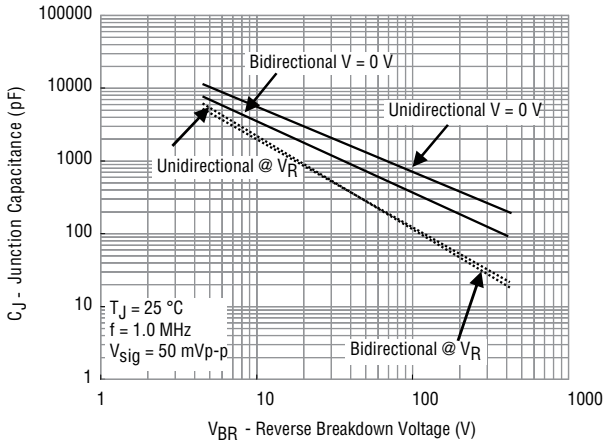
Maximum Non-Repetitive Surge Current



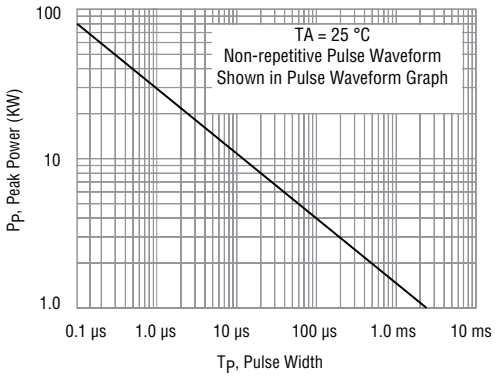
Pulse Waveform



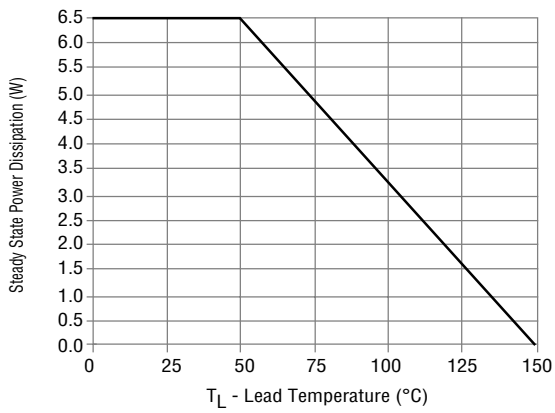
Typical Junction Capacitance



Pulse Rating Curve



Steady State Power Derating Curve



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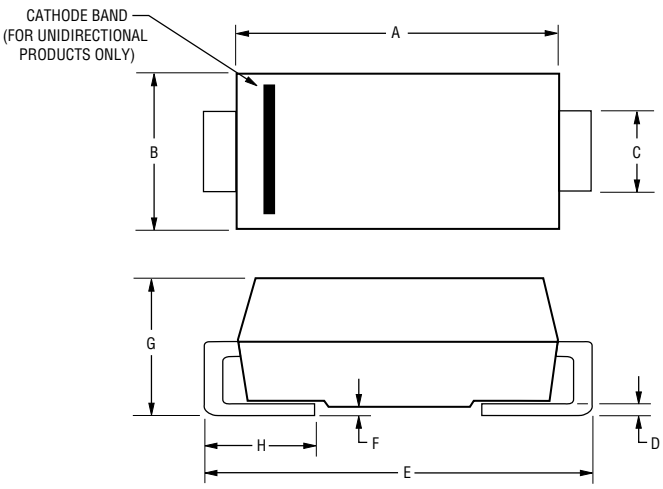
1.5SMC-Q Transient Voltage Suppressor Diode Series

BOURNS®

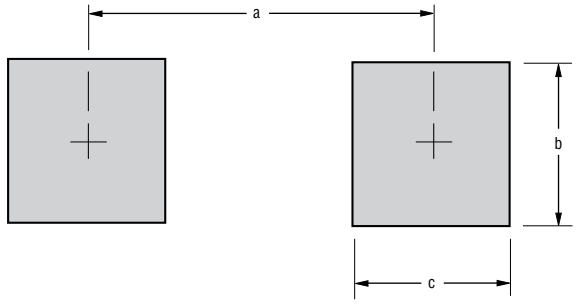
Product Dimensions



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 (0.115 - 0.125)
D	0.15 - 0.31 (0.006 - 0.012)
E	7.75 - 8.13 (0.305 - 0.320)
F	0.203 (0.008) MAX.
G	2.00 - 2.62 (0.079 - 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.)	1.52 (0.060)

DIMENSIONS: MM (INCHES)

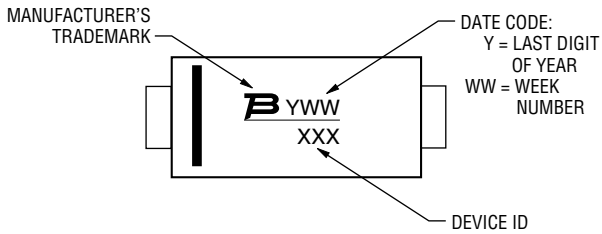
Physical Specifications

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

Environmental Specifications

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

Typical Part Marking



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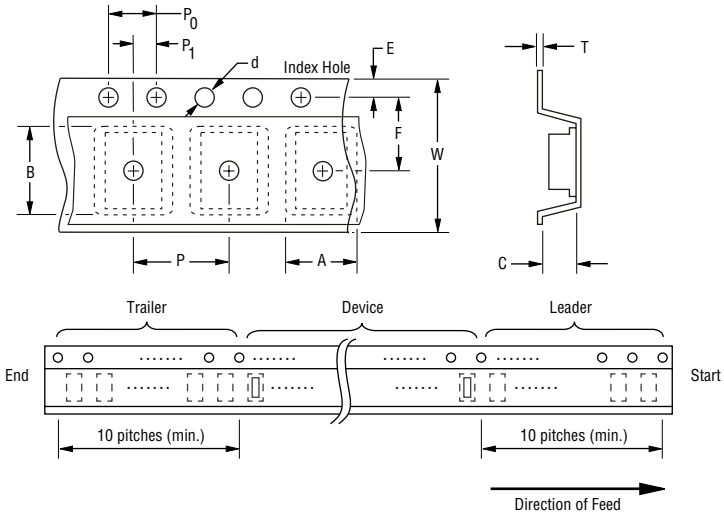
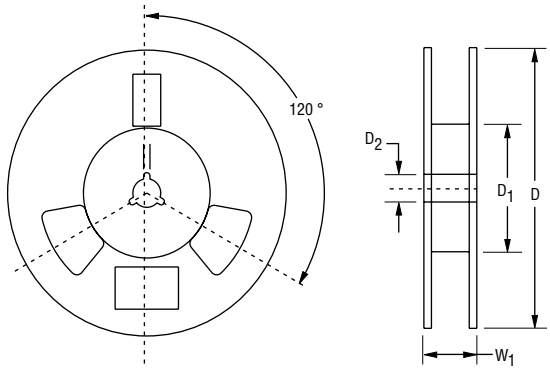
Packaging Information

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





DIMENSIONS: MM / (INCHES)

Devices are packed in accordance with EIA standard RS-481-A and specifications shown here.

Item	Symbol	SMC (DO-214AB) 13-Inch Reel
Carrier Width	A	6.0 ± 2.0 (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	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	--	3000

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LifeElectronics
Живое партнерство

ООО «ЛайфЭлектроникс» **“LifeElectronics” LLC**

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

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С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

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- *Специальные условия для постоянных клиентов.*
- *Подбор аналогов.*
- *Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.*

- *Приемлемые сроки поставки, возможна ускоренная поставка.*
- *Доставку товара в любую точку России и стран СНГ.*
- *Комплексную поставку.*
- *Работу по проектам и поставку образцов.*
- *Формирование склада под заказчика.*

- *Сертификаты соответствия на поставляемую продукцию (по желанию клиента).*
- *Тестирование поставляемой продукции.*
- *Поставку компонентов, требующих военную и космическую приемку.*
- *Входной контроль качества.*
- *Наличие сертификата ISO.*

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- *Регистрацию проекта у производителя компонентов.*
- *Техническую поддержку проекта.*
- *Защиту от снятия компонента с производства.*
- *Оценку стоимости проекта по компонентам.*
- *Изготовление тестовой платы монтаж и пусконаладочные работы.*

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