



## SSCTXXX4XDB Series

1000W Unidirectional and Bidirectional Transient Voltage Suppressors

### ● Description

Transient voltage suppression diodes, also known as TVS diodes, are protective electronic parts that protect electrical equipment from voltage spikes introduced by wires.

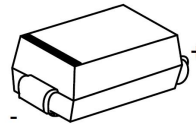
### ● Features

- ✧ 1000W peak pulse power ( $t_p = 10/1000\mu s$ )
- ✧ SMB/DO-214AA Package
- ✧ Working voltage: 5.0-440V
- ✧ For surface mounted applications
- ✧ Excellent clamping capability
- ✧ Typical IR less than 1uA above 10V
- ✧ Fast response time: typically less than 1.0ps from 0V to VBR min.

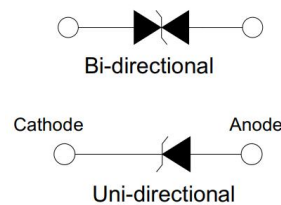
### ● Mechanical Characteristics

- ✧ Case Material: Molded Plastic.
- ✧ UL Flammability Classification Rating 94V-0
- ✧ Device meets MSL 3 requirements
- ✧ Terminal: Solder plated, solderable per MIL-STD-750, Method 2026
- ✧ Polarity: Color band denotes cathode except bi-directional models

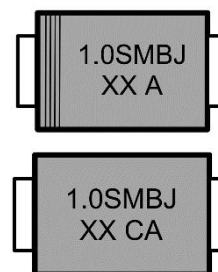
### ● PIN configuration



**SMB/DO-214AA**



**Circuit Diagram**



XX = Voltage  
CA = Bi-directional product  
A = Uni-directional product

**Marking (Top View)**

### ● Applications

- ✧ Computer System
- ✧ Domestic Appliance
- ✧ Video Input



● **Absolute maximum rating @T<sub>A</sub> = 25°C**

| Parameter                                               | Symbol              | Value     | Units |
|---------------------------------------------------------|---------------------|-----------|-------|
| Peak Power Dissipation on 10/1000μs waveform            | P <sub>PP</sub>     | 1000      | W     |
| Steady state power dissipation at T <sub>L</sub> = 75°C | P <sub>M (AV)</sub> | 5.0       | W     |
| Operating Temperature Range                             | T <sub>J</sub>      | -55 ~ 150 | °C    |
| Storage Temperature Range                               | T <sub>STG</sub>    | -55 ~ 150 | °C    |

● **Electrical Characteristics @T<sub>A</sub>=25°C**

| Part Number |             | Marking Code |              | V <sub>RWM</sub> | V <sub>BR</sub> @ I <sub>T</sub> (V) |       | I <sub>T</sub> | I <sub>R</sub> @ V <sub>RWM</sub> | V <sub>C</sub> (Max) | I <sub>PP</sub> (Max) |
|-------------|-------------|--------------|--------------|------------------|--------------------------------------|-------|----------------|-----------------------------------|----------------------|-----------------------|
| Uni-polar   | Bi-polar    | Uni          | Bi           | (V)              | Min                                  | Max   | (mA)           | (μA)                              | (V)                  | (A)                   |
| SSCT5V041DB | SSCT5V042DB | 1.0SMBJ5.0A  | 1.0SMBJ5.0CA | 5.0              | 6.40                                 | 7.00  | 10             | 800                               | 9.2                  | 108.70                |
| SSCT6V041DB | SSCT6V042DB | 1.0SMBJ6.0A  | 1.0SMBJ6.0CA | 6.0              | 6.67                                 | 7.37  | 10             | 800                               | 10.3                 | 97.09                 |
| SSCT6V541DB | SSCT6V542DB | 1.0SMBJ6.5A  | 1.0SMBJ6.5CA | 6.5              | 7.22                                 | 7.98  | 10             | 500                               | 11.2                 | 89.29                 |
| SSCT7V041DB | SSCT7V042DB | 1.0SMBJ7.0A  | 1.0SMBJ7.0CA | 7.0              | 7.78                                 | 8.60  | 10             | 200                               | 12.0                 | 83.34                 |
| SSCT7V541DB | SSCT7V542DB | 1.0SMBJ7.5A  | 1.0SMBJ7.5CA | 7.5              | 8.33                                 | 9.21  | 1              | 100                               | 12.9                 | 77.52                 |
| SSCT8V041DB | SSCT8V042DB | 1.0SMBJ8.0A  | 1.0SMBJ8.0CA | 8.0              | 8.89                                 | 9.83  | 1              | 50                                | 13.6                 | 73.53                 |
| SSCT8V541DB | SSCT8V542DB | 1.0SMBJ8.5A  | 1.0SMBJ8.5CA | 8.5              | 9.44                                 | 10.40 | 1              | 20                                | 14.4                 | 69.45                 |
| SSCT9V041DB | SSCT9V042DB | 1.0SMBJ9.0A  | 1.0SMBJ9.0CA | 9.0              | 10.00                                | 11.10 | 1              | 10                                | 15.4                 | 64.94                 |
| SSCT10V41DB | SSCT10V42DB | 1.0SMBJ10A   | 1.0SMBJ10CA  | 10               | 11.10                                | 12.30 | 1              | 1                                 | 17.0                 | 58.83                 |
| SSCT11V41DB | SSCT11V42DB | 1.0SMBJ11A   | 1.0SMBJ11CA  | 11               | 12.20                                | 13.50 | 1              | 1                                 | 18.2                 | 54.95                 |
| SSCT12V41DB | SSCT12V42DB | 1.0SMBJ12A   | 1.0SMBJ12CA  | 12               | 13.30                                | 14.70 | 1              | 1                                 | 19.9                 | 50.26                 |
| SSCT13V41DB | SSCT13V42DB | 1.0SMBJ13A   | 1.0SMBJ13CA  | 13               | 14.40                                | 15.90 | 1              | 1                                 | 21.5                 | 46.52                 |
| SSCT14V41DB | SSCT14V42DB | 1.0SMBJ14A   | 1.0SMBJ14CA  | 14               | 15.60                                | 17.20 | 1              | 1                                 | 23.2                 | 43.11                 |
| SSCT15V41DB | SSCT15V42DB | 1.0SMBJ15A   | 1.0SMBJ15CA  | 15               | 16.70                                | 18.50 | 1              | 1                                 | 24.4                 | 40.99                 |
| SSCT16V41DB | SSCT16V42DB | 1.0SMBJ16A   | 1.0SMBJ16CA  | 16               | 17.80                                | 19.70 | 1              | 1                                 | 26.0                 | 38.47                 |
| SSCT17V41DB | SSCT17V42DB | 1.0SMBJ17A   | 1.0SMBJ17CA  | 17               | 18.90                                | 20.90 | 1              | 1                                 | 27.6                 | 36.24                 |
| SSCT18V41DB | SSCT18V42DB | 1.0SMBJ18A   | 1.0SMBJ18CA  | 18               | 20.00                                | 22.10 | 1              | 1                                 | 29.2                 | 34.25                 |
| SSCT20V41DB | SSCT20V42DB | 1.0SMBJ20A   | 1.0SMBJ20CA  | 20               | 22.20                                | 24.50 | 1              | 1                                 | 32.4                 | 30.87                 |
| SSCT22V41DB | SSCT22V42DB | 1.0SMBJ22A   | 1.0SMBJ22CA  | 22               | 24.40                                | 26.90 | 1              | 1                                 | 35.5                 | 28.17                 |
| SSCT24V41DB | SSCT24V42DB | 1.0SMBJ24A   | 1.0SMBJ24CA  | 24               | 26.70                                | 29.50 | 1              | 1                                 | 38.9                 | 25.71                 |
| SSCT26V41DB | SSCT26V42DB | 1.0SMBJ26A   | 1.0SMBJ26CA  | 26               | 28.90                                | 31.90 | 1              | 1                                 | 42.1                 | 23.76                 |
| SSCT28V41DB | SSCT28V42DB | 1.0SMBJ28A   | 1.0SMBJ28CA  | 28               | 31.10                                | 34.40 | 1              | 1                                 | 45.4                 | 22.03                 |
| SSCT30V41DB | SSCT30V42DB | 1.0SMBJ30A   | 1.0SMBJ30CA  | 30               | 33.30                                | 36.80 | 1              | 1                                 | 48.4                 | 20.67                 |
| SSCT33V41DB | SSCT33V42DB | 1.0SMBJ33A   | 1.0SMBJ33CA  | 33               | 36.70                                | 40.60 | 1              | 1                                 | 53.3                 | 18.77                 |
| SSCT36V41DB | SSCT36V42DB | 1.0SMBJ36A   | 1.0SMBJ36CA  | 36               | 40.00                                | 44.20 | 1              | 1                                 | 58.1                 | 17.22                 |
| SSCT40V41DB | SSCT40V42DB | 1.0SMBJ40A   | 1.0SMBJ40CA  | 40               | 44.40                                | 49.10 | 1              | 1                                 | 64.5                 | 15.75                 |
| SSCT43V41DB | SSCT43V42DB | 1.0SMBJ43A   | 1.0SMBJ43CA  | 43               | 47.80                                | 52.80 | 1              | 1                                 | 69.4                 | 14.41                 |
| SSCT45V41DB | SSCT45V42DB | 1.0SMBJ45A   | 1.0SMBJ45CA  | 45               | 50.00                                | 55.30 | 1              | 1                                 | 72.7                 | 13.76                 |

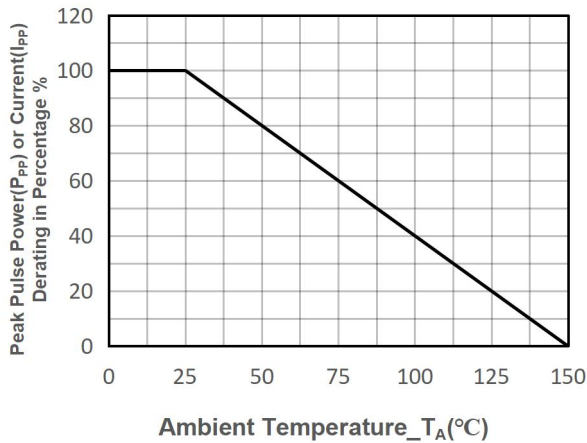


## SSCTXXX4XDB

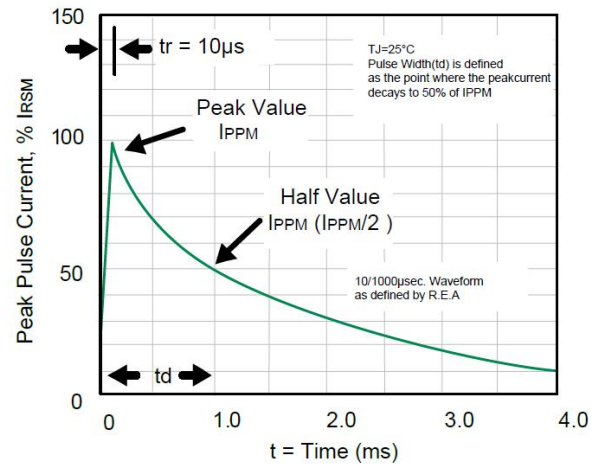
|             |             |             |              |     |       |       |   |   |      |       |
|-------------|-------------|-------------|--------------|-----|-------|-------|---|---|------|-------|
| SSCT48V41DB | SSCT48V42DB | 1.0SMBJ48A  | 1.0SMBJ48CA  | 48  | 53.30 | 58.90 | 1 | 1 | 77.4 | 12.92 |
| SSCT51V41DB | SSCT51V42DB | 1.0SMBJ51A  | 1.0SMBJ51CA  | 51  | 56.70 | 62.70 | 1 | 1 | 82.4 | 12.14 |
| SSCT54V41DB | SSCT54V42DB | 1.0SMBJ54A  | 1.0SMBJ54CA  | 54  | 60.00 | 66.30 | 1 | 1 | 87.1 | 11.40 |
| SSCT58V41DB | SSCT58V42DB | 1.0SMBJ58A  | 1.0SMBJ58CA  | 58  | 64.40 | 71.20 | 1 | 1 | 93.6 | 10.69 |
| SSCT60V41DB | SSCT60V42DB | 1.0SMBJ60A  | 1.0SMBJ60CA  | 60  | 66.70 | 73.70 | 1 | 1 | 96.8 | 10.34 |
| SSCT64V41DB | SSCT64V42DB | 1.0SMBJ64A  | 1.0SMBJ64CA  | 64  | 71.10 | 78.60 | 1 | 1 | 103  | 9.71  |
| SSCT70V41DB | SSCT70V42DB | 1.0SMBJ70A  | 1.0SMBJ70CA  | 70  | 77.80 | 86.00 | 1 | 1 | 113  | 8.85  |
| SSCT75V41DB | SSCT75V42DB | 1.0SMBJ75A  | 1.0SMBJ75CA  | 75  | 83.30 | 92.10 | 1 | 1 | 121  | 8.27  |
| SSCT78V41DB | SSCT78V42DB | 1.0SMBJ78A  | 1.0SMBJ78CA  | 78  | 86.70 | 95.80 | 1 | 1 | 126  | 7.94  |
| SSCT85V41DB | SSCT85V42DB | 1.0SMBJ85A  | 1.0SMBJ85CA  | 85  | 94.40 | 52.80 | 1 | 1 | 137  | 7.30  |
| SSCT90V41DB | SSCT90V42DB | 1.0SMBJ90A  | 1.0SMBJ90CA  | 90  | 100.0 | 111.0 | 1 | 1 | 146  | 6.85  |
| SSCT100S1DB | SSCT10042DB | 1.0SMBJ100A | 1.0SMBJ100CA | 100 | 111.0 | 123.0 | 1 | 1 | 162  | 6.18  |
| SSCT11041DB | SSCT11042DB | 1.0SMBJ110A | 1.0SMBJ110CA | 110 | 122.0 | 135.0 | 1 | 1 | 177  | 5.65  |
| SSCT12041DB | SSCT12042DB | 1.0SMBJ120A | 1.0SMBJ120CA | 120 | 133.0 | 147.0 | 1 | 1 | 193  | 5.19  |
| SSCT13041DB | SSCT13042DB | 1.0SMBJ130A | 1.0SMBJ130CA | 130 | 144.0 | 159.0 | 1 | 1 | 209  | 4.79  |
| SSCT15041DB | SSCT15042DB | 1.0SMBJ150A | 1.0SMBJ150CA | 150 | 167.0 | 185.0 | 1 | 1 | 243  | 4.12  |
| SSCT16041DB | SSCT16042DB | 1.0SMBJ160A | 1.0SMBJ160CA | 160 | 178.0 | 197.0 | 1 | 1 | 259  | 3.87  |
| SSCT17041DB | SSCT17042DB | 1.0SMBJ170A | 1.0SMBJ170CA | 170 | 189.0 | 209.0 | 1 | 1 | 275  | 3.64  |
| SSCT18041DB | SSCT18042DB | 1.0SMBJ180A | 1.0SMBJ180CA | 180 | 201.0 | 222.0 | 1 | 1 | 292  | 3.43  |
| SSCT19041DB | SSCT19042DB | 1.0SMBJ190A | 1.0SMBJ190CA | 190 | 209.0 | 233.0 | 1 | 1 | 308  | 3.25  |
| SSCT20041DB | SSCT20042DB | 1.0SMBJ200A | 1.0SMBJ200CA | 200 | 224.0 | 247.0 | 1 | 1 | 324  | 3.09  |
| SSCT21041DB | SSCT21042DB | 1.0SMBJ210A | 1.0SMBJ210CA | 210 | 237.0 | 263.0 | 1 | 1 | 340  | 2.95  |
| SSCT22041DB | SSCT22042DB | 1.0SMBJ220A | 1.0SMBJ220CA | 220 | 246.0 | 272.0 | 1 | 1 | 356  | 2.81  |
| SSCT25041DB | SSCT25042DB | 1.0SMBJ250A | 1.0SMBJ250CA | 250 | 279.0 | 309.0 | 1 | 1 | 405  | 2.47  |
| SSCT30041DB | SSCT30042DB | 1.0SMBJ300A | 1.0SMBJ300CA | 300 | 335.0 | 371.0 | 1 | 1 | 486  | 2.06  |
| SSCT35041DB | SSCT35042DB | 1.0SMBJ350A | 1.0SMBJ350CA | 350 | 391.0 | 432.0 | 1 | 1 | 567  | 1.77  |
| SSCT40041DB | SSCT40042DB | 1.0SMBJ400A | 1.0SMBJ400CA | 400 | 447.0 | 494.0 | 1 | 1 | 648  | 1.55  |
| SSCT44041DB | SSCT44042DB | 1.0SMBJ440A | 1.0SMBJ440CA | 440 | 492.0 | 543.0 | 1 | 1 | 713  | 1.41  |



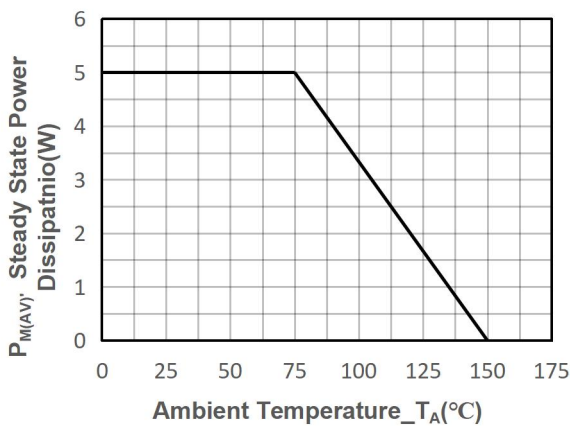
● **Typical Performance Characteristics ( $T_A = 25^\circ\text{C}$  unless otherwise Specified)**



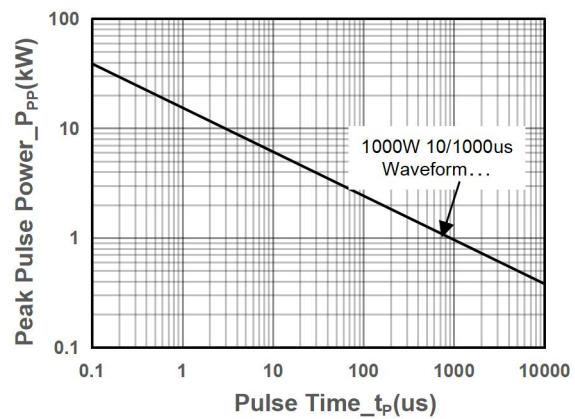
**Pulse Derating Curve**



**Pulse Waveform**



**Steady State Power Dissipation Derating Curve**



**Peak Pulse Power vs. Pulse Time**



## ● Package Information

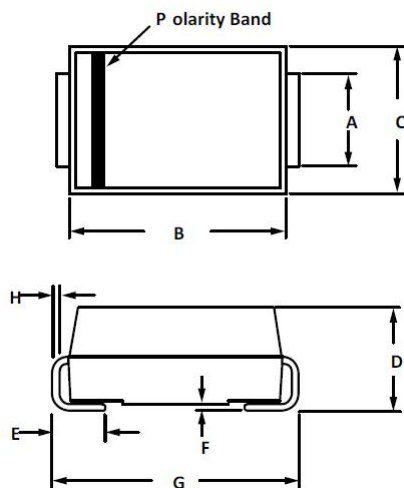
### Ordering Information

| Device      | Package      | Qty per Reel | Reel diameters(mm) |
|-------------|--------------|--------------|--------------------|
| SSCTXXX4XDB | SMB/DO-214AA | 3000         | 13inch             |

### Mechanical Data

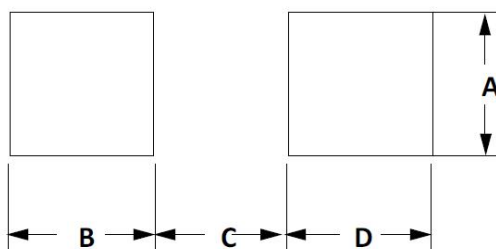
Case: SMB/DO-214AA

Case Material: Molded Plastic. UL Flammability



| DIM | Millimeters |      |
|-----|-------------|------|
|     | Min         | Max  |
| A   | 1.90        | 2.1  |
| B   | 4.22        | 4.70 |
| C   | 3.40        | 3.94 |
| D   | 1.95        | 2.60 |
| E   | 0.90        | 1.42 |
| F   | 0.00        | 0.23 |
| G   | 5.21        | 5.59 |
| H   | 0.15        | 0.25 |

### Recommended Pad outline (Unit: mm)



| DIM | Millimeters |      |
|-----|-------------|------|
|     | Min         | Max  |
| A   | 2.30        | -    |
| B   | 1.50        | -    |
| C   | -           | 2.80 |
| D   | 1.50        | -    |



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