

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                   |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| <b>SPECIFICATION SHEET NO.</b>          | S0326- SMBJ90CA00S0DX                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                   |
| <b>ORIGINAL MFG/PART NO.</b>            | MDD Diodes/SMBJ90CA                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                   |
| <b>NEXTGEN PART CODE</b>                | SMBJ90CA00S0DX                                                                                                                                                                                                                                                                                                                                                                                                                                  | Indicate This Code For <a href="#">RFQ</a> /Order |
| <b>DATE</b>                             | Mar. 26, 2025                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                   |
| <b>REVISION</b>                         | A3                                                                                                                                                                                                                                                                                                                                                                                                                                              | Updated With Most Recent Data                     |
| <b>DESCRIPTION AND MAIN PARAMETRICS</b> | <p>SMD Transient Voltage Suppressor (TVs) Diodes, SMBJ Series</p> <p>Case SMB/DO-214AA, 2 Pads,</p> <p>Bidirectional Type, Reverse Stand-off Voltage 90V,</p> <p>Peak Pulse Power: 600 Watts, Peak Pulse Current: 4.1A Max.</p> <p>Operating Junction Temp. Range -65°C ~+150°C</p> <p>Package in Tape/Reel, 3000pcs/Reel</p> <p>RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF)</p> |                                                   |
| <b>CUSTOMER</b>                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                   |
| <b>CUSTOMER PART NUMBER</b>             |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                   |
| <b>CROSS REF. PART NUMBER</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                   |
| <b>MEMO</b>                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                   |

### VENDOR APPROVE

Issued/Checked/Approved



Effective Date: Mar. 26, 2025

### CUSTOMER APPROVE

Date:

## MAIN FEATURE

- The Plastic Package Carries Underwriters Laboratory Flammability Classification

94V-0

- Low Profile Package
- Built-in Strain Relief
- High Temperature Soldering Guaranteed: 260°C/ 10 Seconds At Terminals
- Glass Passivated Chip Junction
- Low Inductance
- 5% VBR Voltage Tolerance
- Excellent Clamping Capability
- 600W Peak Pulse Power Capability At 10/1000µs Waveform
- Repetition Rate (Duty Cycle): 0.01%
- Fast Response Time
- Typical I<sub>R</sub> Less Than 1µA Above 10V
- Cross Competitors Parts and More.
- RoHS/RoHS III Compliant, RoHS Annex III Lead Exemption (Exempt per RoHS EU

2015/863)



*Image shown is a representation only.*

*Exact specifications should be obtained*

*from the product dimension.*



## APPLICATION

- I/O Interface
- AC/DC Power Supply
- Low Frequency Signal Transmission Line (RS232, RS485, etc.)

## ELECTRICAL CHARACTERISTICS

- See Page 5 ~Page 11 For Different Part Code
- All Parameters are Subject To NextGen Components' Final Confirmation

## HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code SMBJ90CA00S0DX For RFQ and Order.

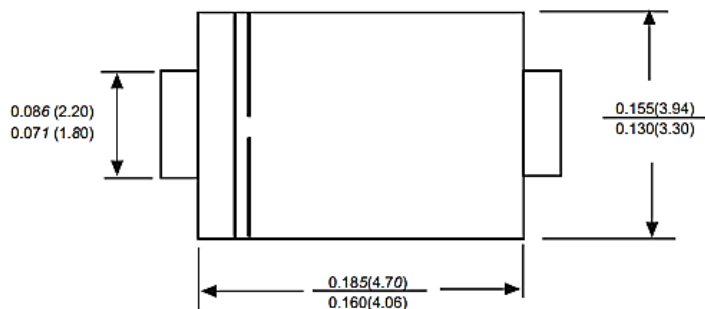
## PART CODE GUIDE

**RFQ**  
[Request For Quotation](#)

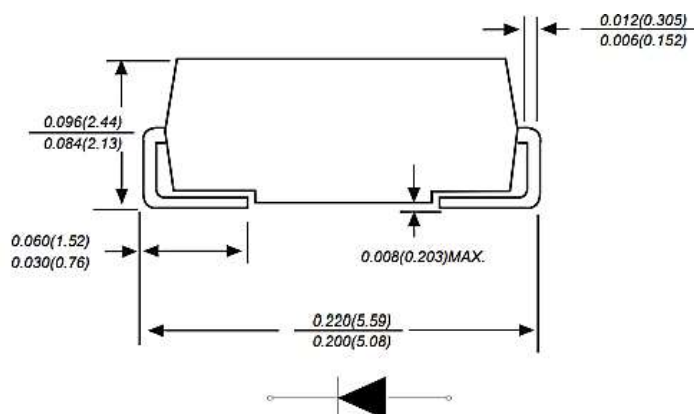
| CODE | NAME                           | KEY SPECIFICATION OPTION                                                   |
|------|--------------------------------|----------------------------------------------------------------------------|
| SMBJ | Product Series Code            | SMD Transient Voltage Suppressors (TVs) Diodes, Case SMB/DO-214AA, 2 Pads, |
| 90CA | Mode code                      | 90CA: Reverse Stand-Off Voltage 90V, Bidirectional Polarity Type           |
| 00S0 | Internal Control Code          | Letter or Digits (A~Z, a~z or 1~9)                                         |
| DX   | Marking Code                   | Marking “DX”                                                               |
| XX   | Special/Custom Parameters Code | Letter or Digits (A~Z, a~z or 1~9) for Special Parametric;<br>Blank: N/A   |

**DIMENSION**- Unit: Inch/mm, Case SMB/DO-214AA Outline

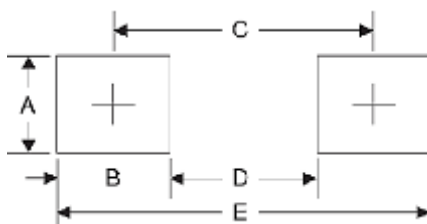
Top View



Side View



Recommend Pad Layout



| SYMBOL      | A    | B     | C     | D     | E     |
|-------------|------|-------|-------|-------|-------|
| Unit (Inch) | 0.11 | 0.094 | 0.181 | 0.086 | 0.276 |
| Unit (mm)   | 2.80 | 2.40  | 4.60  | 2.20  | 7.00  |

## MECHANICAL DATA

| CASE                                         | TERMINALS                                         | POLARITY                              | MOUNTING POSITION | MARKING                     | WEIGHT PER PIECE                  |
|----------------------------------------------|---------------------------------------------------|---------------------------------------|-------------------|-----------------------------|-----------------------------------|
| JEDEC<br>SMB/DO-214AA<br>Molded Plastic Body | Solderable per<br>MIL-STD-<br>750, Method<br>2026 | Polarity Symbol<br>Marking On<br>Body | Any               | See<br>Marking Code<br>List | 0.003<br>Ounce,<br>0.095<br>Grams |

## MAX. RATING & CHARACTERISTICS - Ratings At 25°C Ambient Temperature Unless Otherwise Specified.

| PARAMETER                                                                                                             | SYMBOLS                           | VALUE                 | UNITS |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------|-------|
| Peak Pulse Power Dissipation At 10/1000 $\mu$ s Waveform<br>(Note 1, Note 2, Fig. 1)                                  | PPPM                              | 600 Min.              | W     |
| Peak Pulse Current On 10/1000 $\mu$ s Waveform (Note 1, Fig. 3)                                                       | I <sub>PPM</sub>                  | See<br>Page 6~page 11 | A     |
| Steady State Power Dissipation At T <sub>A</sub> =50°C (Fig. 5)                                                       | P <sub>M(AV)</sub>                | 5.0                   | W     |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave<br>Superimposed On Rated Load (JEDEC Method) (Note 3, Fig. 6) | I <sub>FSM</sub>                  | 100                   | A     |
| Operating Junction And Storage Temperature Range.                                                                     | T <sub>J</sub> , T <sub>stg</sub> | -65 ~ +150            | °C    |
| Typical Thermal Resistance Junction To Lead                                                                           | R <sub>θJL</sub>                  | 20                    | °C/W  |
| Typical Thermal Resistance Junction To Ambient                                                                        | R <sub>θJA</sub>                  | 100                   | °C/W  |

### Note

1. Non-repetitive current pulse, per Fig 3 and derated above T<sub>A</sub>=25 °C per Fig 2
2. Mounted on 5.0\*5.0mm (0.03mm Thickness) copper pads to each terminal
3. 8.3ms single half sinewave or equivalent square wave, duty cycle=4 pulsed per minute Max.

**UNIDIRECTIONAL TYPE- ELECTRICAL CHARACTERISTICS - Ta = 25°C**

| Part Code      | Reverse Stand-off Voltage | Breakdown Voltage |      | Test Current | Reverse Leakage Max. | Max. Clamp Voltage | Peak Pulse Current | Marking Code |
|----------------|---------------------------|-------------------|------|--------------|----------------------|--------------------|--------------------|--------------|
|                |                           | VBR @ IT          |      |              |                      |                    |                    |              |
|                | VRWM                      | Min               | Max  | IT           | IR @ VRWM            | VC @ IPP           | IPP                |              |
|                | V                         | V                 | V    | mA           | µA                   | V                  | A                  |              |
| SMBJ050A00S0KE | 5                         | 6.4               | 7    | 10           | 800                  | 9.2                | 65.3               | KE           |
| SMBJ060A00S0KG | 6                         | 6.67              | 7.37 | 10           | 800                  | 10.3               | 58.3               | KG           |
| SMBJ065A00S0KK | 6.5                       | 7.22              | 7.98 | 10           | 500                  | 11.2               | 53.6               | KK           |
| SMBJ070A00S0KM | 7                         | 7.78              | 8.6  | 10           | 200                  | 12                 | 50                 | KM           |
| SMBJ075A00S0KP | 7.5                       | 8.33              | 9.21 | 1            | 100                  | 12.9               | 46.6               | KP           |
| SMBJ080A00S0KR | 8                         | 8.89              | 9.83 | 1            | 50                   | 13.6               | 44.2               | KR           |
| SMBJ085A00S0KT | 8.5                       | 9.44              | 10.4 | 1            | 20                   | 14.4               | 41.7               | KT           |
| SMBJ090A00S0KV | 9                         | 10                | 11.1 | 1            | 10                   | 15.4               | 39                 | KV           |
| SMBJ10A000S0KX | 10                        | 11.1              | 12.3 | 1            | 5                    | 17                 | 35.3               | KX           |
| SMBJ11A000S0KZ | 11                        | 12.2              | 13.5 | 1            | 1                    | 18.2               | 33                 | KZ           |
| SMBJ12A000S0LE | 12                        | 13.3              | 14.7 | 1            | 1                    | 19.9               | 30.2               | LE           |
| SMBJ13A000S0LG | 13                        | 14.4              | 15.9 | 1            | 1                    | 21.5               | 28                 | LG           |
| SMBJ14A000S0LK | 14                        | 15.6              | 17.2 | 1            | 1                    | 23.2               | 25.9               | LK           |
| SMBJ15A000S0LM | 15                        | 16.7              | 18.5 | 1            | 1                    | 24.4               | 24.6               | LM           |
| SMBJ16A000S0LP | 16                        | 17.8              | 19.7 | 1            | 1                    | 26                 | 23.1               | LP           |
| SMBJ17A000S0LR | 17                        | 18.9              | 20.9 | 1            | 1                    | 27.6               | 21.8               | LR           |
| SMBJ18A000S0LT | 18                        | 20                | 22.1 | 1            | 1                    | 29.2               | 20.6               | LT           |
| SMBJ20A000S0LV | 20                        | 22.2              | 24.5 | 1            | 1                    | 32.4               | 18.6               | LV           |
| SMBJ22A000S0LX | 22                        | 24.4              | 26.9 | 1            | 1                    | 35.5               | 16.9               | LX           |
| SMBJ24A000S0LZ | 24                        | 26.7              | 29.5 | 1            | 1                    | 38.9               | 15.5               | LZ           |

**UNIDIRECTIONAL TYPE- ELECTRICAL CHARACTERISTICS - Ta = 25°C**

| Part Code      | Reverse Stand-off Voltage | Breakdown Voltage |      | Test Current | Reverse Leakage Max. | Max. Clamp Voltage | Peak Pulse Current | Marking Code |
|----------------|---------------------------|-------------------|------|--------------|----------------------|--------------------|--------------------|--------------|
|                |                           | VBR @ IT          |      |              |                      |                    |                    |              |
|                | VRWM                      | Min               | Max  | IT           | IR @ VRWM            | VC @ IPP           | IPP                |              |
|                | V                         | V                 | V    | mA           | µA                   | V                  | A                  |              |
| SMBJ26A000S0ME | 26                        | 28.9              | 31.9 | 1            | 1                    | 42.1               | 14.3               | ME           |
| SMBJ28A000S0MG | 28                        | 31.1              | 34.4 | 1            | 1                    | 45.4               | 13.3               | MG           |
| SMBJ30A000S0MK | 30                        | 33.3              | 36.8 | 1            | 1                    | 48.4               | 12.4               | MK           |
| SMBJ33A000S0MM | 33                        | 36.7              | 40.6 | 1            | 1                    | 53.3               | 11.3               | MM           |
| SMBJ36A000S0MP | 36                        | 40                | 44.2 | 1            | 1                    | 58.1               | 10.4               | MP           |
| SMBJ40A000S0MR | 40                        | 44.4              | 49.1 | 1            | 1                    | 64.5               | 9.3                | MR           |
| SMBJ43A000S0MT | 43                        | 47.8              | 52.8 | 1            | 1                    | 69.4               | 8.7                | MT           |
| SMBJ45A000S0MV | 45                        | 50                | 55.3 | 1            | 1                    | 72.7               | 8.3                | MV           |
| SMBJ48A000S0MX | 48                        | 53.3              | 58.9 | 1            | 1                    | 77.4               | 7.8                | MX           |
| SMBJ51A000S0MZ | 51                        | 56.7              | 62.7 | 1            | 1                    | 82.4               | 7.3                | MZ           |
| SMBJ54A000S0NE | 54                        | 60                | 66.3 | 1            | 1                    | 87.1               | 6.9                | NE           |
| SMBJ58A000S0NG | 58                        | 64.4              | 71.2 | 1            | 1                    | 93.6               | 6.5                | NG           |
| SMBJ60A000S0NK | 60                        | 66.7              | 73.7 | 1            | 1                    | 96.8               | 6.2                | NK           |
| SMBJ64A000S0NM | 64                        | 71.1              | 78.6 | 1            | 1                    | 103                | 5.9                | NM           |
| SMBJ70A000S0NP | 70                        | 77.8              | 86   | 1            | 1                    | 113                | 5.3                | NP           |
| SMBJ75A000S0NR | 75                        | 83.3              | 92.1 | 1            | 1                    | 121                | 5                  | NR           |
| SMBJ78A000S0NT | 78                        | 86.7              | 95.8 | 1            | 1                    | 126                | 4.8                | NT           |
| SMBJ85A000S0NV | 85                        | 94.4              | 104  | 1            | 1                    | 137                | 4.4                | NV           |
| SMBJ90A000S0NX | 90                        | 100               | 111  | 1            | 1                    | 146                | 4.1                | NX           |
| SMBJ100A00S0NZ | 100                       | 111               | 123  | 1            | 1                    | 162                | 3.7                | NZ           |

**UNIDIRECTIONAL TYPE-** ELECTRICAL CHARACTERISTICS - Ta = 25°C

| Part Code      | Reverse Stand-off Voltage | Breakdown Voltage |     | Test Current | Reverse Leakage Max. | Max. Clamp Voltage | Peak Pulse Current | Marking Code |
|----------------|---------------------------|-------------------|-----|--------------|----------------------|--------------------|--------------------|--------------|
|                |                           | VBR @ IT          |     |              |                      |                    |                    |              |
|                | VRWM                      | Min               | Max | IT           | IR @ VRWM            | VC @ IPP           | IPP                |              |
|                | V                         | V                 | V   | mA           | μA                   | V                  | A                  |              |
| SMBJ110A00S0PE | 110                       | 122               | 135 | 1            | 1                    | 177                | 3.4                | PE           |
| SMBJ120A00S0PG | 120                       | 133               | 147 | 1            | 1                    | 193                | 3.1                | PG           |
| SMBJ130A00S0PK | 130                       | 144               | 159 | 1            | 1                    | 209                | 2.9                | PK           |
| SMBJ150A00S0PM | 150                       | 167               | 185 | 1            | 1                    | 243                | 2.5                | PM           |
| SMBJ160A00S0PP | 160                       | 178               | 197 | 1            | 1                    | 259                | 2.3                | PP           |
| SMBJ170A00S0PR | 170                       | 189               | 209 | 1            | 1                    | 275                | 2.2                | PR           |
| SMBJ180A00S0PT | 180                       | 201               | 222 | 1            | 1                    | 292                | 2.1                | PT           |
| SMBJ190A00S0PA | 190                       | 211               | 233 | 1            | 1                    | 308                | 2.0                | PA           |
| SMBJ200A00S0PV | 200                       | 224               | 247 | 1            | 1                    | 324                | 1.9                | PV           |
| SMBJ210A00S0PB | 210                       | 237               | 263 | 1            | 1                    | 340                | 1.8                | PB           |
| SMBJ220A00S0PX | 220                       | 246               | 272 | 1            | 1                    | 356                | 1.7                | PX           |
| SMBJ250A00S0PZ | 250                       | 279               | 309 | 1            | 1                    | 405                | 1.5                | PZ           |
| SMBJ300A00S0QE | 300                       | 335               | 371 | 1            | 1                    | 486                | 1.3                | QE           |
| SMBJ350A00S0QG | 350                       | 391               | 432 | 1            | 1                    | 567                | 1.1                | QG           |
| SMBJ400A00S0QK | 400                       | 447               | 494 | 1            | 1                    | 648                | 0.9                | QK           |
| SMBJ440A00S0QM | 440                       | 492               | 543 | 1            | 1                    | 713                | 0.9                | QM           |
|                |                           |                   |     |              |                      |                    |                    |              |
|                |                           |                   |     |              |                      |                    |                    |              |
|                |                           |                   |     |              |                      |                    |                    |              |
|                |                           |                   |     |              |                      |                    |                    |              |

**BIDIRECTIONAL TYPE- ELECTRICAL CHARACTERISTICS - Ta = 25°C**

| Part Code      | Reverse Stand-off Voltage | Breakdown Voltage |      | Test Current | Reverse Leakage Max. | Max. Clamp Voltage | Peak Pulse Current | Marking Code |
|----------------|---------------------------|-------------------|------|--------------|----------------------|--------------------|--------------------|--------------|
|                |                           | VBR @ IT          |      |              |                      |                    |                    |              |
|                | VRWM                      | Min               | Max  | IT           | IR @ VRWM            | VC @ IPP           | IPP                |              |
|                | V                         | V                 | V    | mA           | µA                   | V                  | A                  |              |
| SMBJ050CA0S0AE | 5                         | 6.4               | 7    | 10           | 800                  | 9.2                | 65.3               | AE           |
| SMBJ060CA0S0AG | 6                         | 6.67              | 7.37 | 10           | 800                  | 10.3               | 58.3               | AG           |
| SMBJ065CA0S0AK | 6.5                       | 7.22              | 7.98 | 10           | 500                  | 11.2               | 53.6               | AK           |
| SMBJ070CA0S0AM | 7                         | 7.78              | 8.6  | 10           | 200                  | 12                 | 50                 | AM           |
| SMBJ075CA0S0AP | 7.5                       | 8.33              | 9.2  | 1            | 100                  | 12.9               | 46.6               | AP           |
| SMBJ080CA0S0AR | 8                         | 8.89              | 9.83 | 1            | 50                   | 13.6               | 44.2               | AR           |
| SMBJ085CA0S0AT | 8.5                       | 9.44              | 10.4 | 1            | 20                   | 14.4               | 41.7               | AT           |
| SMBJ090CA0S0AV | 9                         | 10                | 11.1 | 1            | 10                   | 15.4               | 39                 | AV           |
| SMBJ10CA00S0AX | 10                        | 11.1              | 12.3 | 1            | 5                    | 17                 | 35.3               | AX           |
| SMBJ11CA00S0AZ | 11                        | 12.2              | 13.5 | 1            | 1                    | 18.2               | 33                 | AZ           |
| SMBJ12CA00S0BE | 12                        | 13.3              | 14.7 | 1            | 1                    | 19.9               | 30.2               | BE           |
| SMBJ13CA00S0BG | 13                        | 14.4              | 15.9 | 1            | 1                    | 21.5               | 28                 | BG           |
| SMBJ14CA00S0BK | 14                        | 15.6              | 17.2 | 1            | 1                    | 23.2               | 25.9               | BK           |
| SMBJ15CA00S0BM | 15                        | 16.7              | 18.5 | 1            | 1                    | 24.4               | 24.6               | BM           |
| SMBJ16CA00S0BP | 16                        | 17.8              | 19.7 | 1            | 1                    | 26                 | 23.1               | BP           |
| SMBJ17CA00S0BR | 17                        | 18.9              | 20.9 | 1            | 1                    | 27.6               | 21.8               | BR           |
| SMBJ18CA00S0BT | 18                        | 20                | 22.1 | 1            | 1                    | 29.2               | 20.6               | BT           |
| SMBJ20CA00S0BV | 20                        | 22.2              | 24.5 | 1            | 1                    | 32.4               | 18.6               | BV           |
| SMBJ22CA00S0BX | 22                        | 24.4              | 26.9 | 1            | 1                    | 35.5               | 16.9               | BX           |
| SMBJ24CA00S0BZ | 24                        | 26.7              | 29.5 | 1            | 1                    | 38.9               | 15.5               | BZ           |

**BIDIRECTIONAL TYPE- ELECTRICAL CHARACTERISTICS** - Ta = 25°C

| Part Code                      | Reverse Stand-off Voltage | Breakdown Voltage |      | Test Current | Reverse Leakage Max. | Max. Clamp Voltage | Peak Pulse Current | Marking Code |
|--------------------------------|---------------------------|-------------------|------|--------------|----------------------|--------------------|--------------------|--------------|
|                                |                           | VBR @ IT          |      |              |                      |                    |                    |              |
|                                | VRWM                      | Min               | Max  | IT           | IR @ VRWM            | VC @ IPP           | IPP                |              |
|                                | V                         | V                 | V    | mA           | µA                   | V                  | A                  |              |
| SMBJ26CA00S0CE                 | 26                        | 28.9              | 31.9 | 1            | 1                    | 42.1               | 14.3               | CE           |
| SMBJ28CA00S0CG                 | 28                        | 31.1              | 34.4 | 1            | 1                    | 45.4               | 13.3               | CG           |
| SMBJ30CA00S0CK                 | 30                        | 33.3              | 36.8 | 1            | 1                    | 48.4               | 12.4               | CK           |
| SMBJ33CA00S0CM                 | 33                        | 36.7              | 40.6 | 1            | 1                    | 53.3               | 11.3               | CM           |
| SMBJ36CA00S0CP                 | 36                        | 40                | 44.2 | 1            | 1                    | 58.1               | 10.4               | CP           |
| SMBJ40CA00S0CR                 | 40                        | 44.4              | 49.1 | 1            | 1                    | 64.5               | 9.3                | CR           |
| SMBJ43CA00S0CT                 | 43                        | 47.8              | 52.8 | 1            | 1                    | 69.4               | 8.7                | CT           |
| SMBJ45CA00S0CV                 | 45                        | 50                | 55.3 | 1            | 1                    | 72.7               | 8.3                | CV           |
| SMBJ48CA00S0CX                 | 48                        | 53.3              | 58.9 | 1            | 1                    | 77.4               | 7.8                | CX           |
| SMBJ51CA00S0CZ                 | 51                        | 56.7              | 62.7 | 1            | 1                    | 82.4               | 7.3                | CZ           |
| SMBJ54CA00S0DE                 | 54                        | 60                | 66.3 | 1            | 1                    | 87.1               | 6.9                | DE           |
| SMBJ58CA00S0DG                 | 58                        | 64.4              | 71.2 | 1            | 1                    | 93.6               | 6.5                | DG           |
| SMBJ60CA00S0DK                 | 60                        | 66.7              | 73.7 | 1            | 1                    | 96.8               | 6.2                | DK           |
| SMBJ64CA00S0DM                 | 64                        | 71.1              | 78.6 | 1            | 1                    | 103                | 5.9                | DM           |
| SMBJ70CA00S0DP                 | 70                        | 77.8              | 86   | 1            | 1                    | 113                | 5.3                | DP           |
| SMBJ75CA00S0DR                 | 75                        | 83.3              | 92.1 | 1            | 1                    | 121                | 5                  | DR           |
| SMBJ78CA00S0DT                 | 78                        | 86.7              | 95.8 | 1            | 1                    | 126                | 4.8                | DT           |
| SMBJ85CA00S0DV                 | 85                        | 94.4              | 104  | 1            | 1                    | 137                | 4.4                | DV           |
| <a href="#">SMBJ90CA00S0DX</a> | 90                        | 100               | 111  | 1            | 1                    | 146                | 4.1                | DX           |
| SMBJ100CA00S0DZ                | 100                       | 111               | 123  | 1            | 1                    | 162                | 3.7                | DZ           |

**BIDIRECTIONAL TYPE- ELECTRICAL CHARACTERISTICS - Ta = 25°C**

| Part Code      | Reverse Stand-off Voltage | Breakdown Voltage |     | Test Current | Reverse Leakage Max. | Max. Clamp Voltage | Peak Pulse Current | Marking Code |
|----------------|---------------------------|-------------------|-----|--------------|----------------------|--------------------|--------------------|--------------|
|                |                           | VBR @ IT          |     |              |                      |                    |                    |              |
|                | VRWM                      | Min               | Max | IT           | IR @ VRWM            | VC @ IPP           | IPP                |              |
|                | V                         | V                 | V   | mA           | μA                   | V                  | A                  |              |
| SMBJ110CA0S0EE | 110                       | 122               | 135 | 1            | 1                    | 177                | 3.4                | EE           |
| SMBJ120CA0S0EG | 120                       | 133               | 147 | 1            | 1                    | 193                | 3.1                | EG           |
| SMBJ130CA0S0EK | 130                       | 144               | 159 | 1            | 1                    | 209                | 2.9                | EK           |
| SMBJ150CA0S0EM | 150                       | 167               | 185 | 1            | 1                    | 243                | 2.5                | EM           |
| SMBJ160CA0S0EP | 160                       | 178               | 197 | 1            | 1                    | 259                | 2.3                | EP           |
| SMBJ170CA0S0ER | 170                       | 189               | 209 | 1            | 1                    | 275                | 2.2                | ER           |
| SMBJ180CA0S0ET | 180                       | 201               | 222 | 1            | 1                    | 292                | 2.1                | ET           |
| SMBJ190CA0S0EC | 190                       | 211               | 233 | 1            | 1                    | 308                | 2.0                | EC           |
| SMBJ200CA0S0EV | 200                       | 224               | 247 | 1            | 1                    | 324                | 1.9                | EV           |
| SMBJ210CA0S0ED | 210                       | 237               | 263 | 1            | 1                    | 340                | 1.8                | ED           |
| SMBJ220CA0S0EX | 220                       | 246               | 272 | 1            | 1                    | 356                | 1.7                | EX           |
| SMBJ250CA0S0EZ | 250                       | 279               | 309 | 1            | 1                    | 405                | 1.5                | EZ           |
| SMBJ300CA0S0FE | 300                       | 335               | 371 | 1            | 1                    | 486                | 1.3                | FE           |
| SMBJ350CA0S0FG | 350                       | 391               | 432 | 1            | 1                    | 567                | 1.1                | FG           |
| SMBJ400CA0S0FK | 400                       | 447               | 494 | 1            | 1                    | 648                | 0.9                | FK           |
| SMBJ440CA0S0FM | 440                       | 492               | 543 | 1            | 1                    | 713                | 0.9                | FM           |
|                |                           |                   |     |              |                      |                    |                    |              |
|                |                           |                   |     |              |                      |                    |                    |              |

Note: For Bidirectional Type Having VRWM Of 10V And Less, The IR Limit Is Double.

**RATINGS AND CHARACTERISTICS CURVES- FOR REFERENCE ONLY,  $T_A=25^{\circ}\text{C}$  UNLESS OTHERWISE SPECIFIED.**

Figure 1. Peak Pulse Power Rating Curve

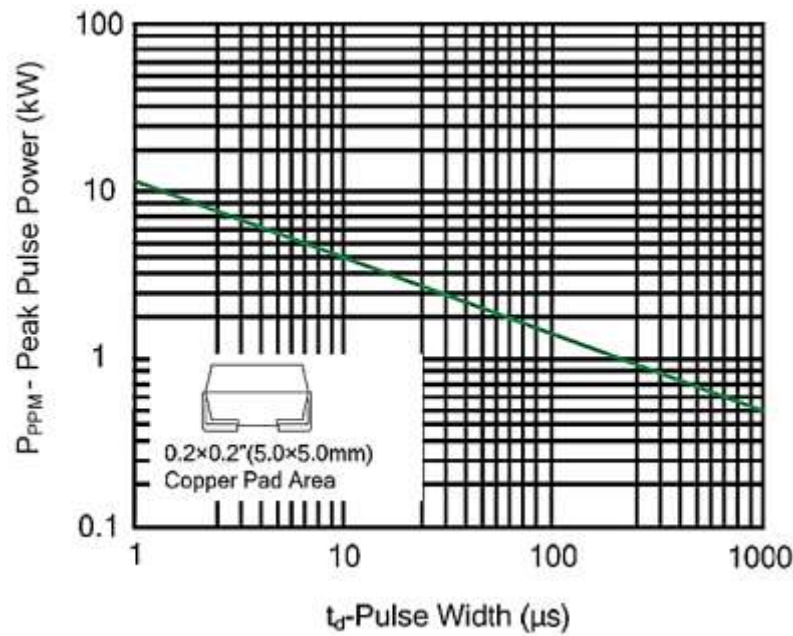
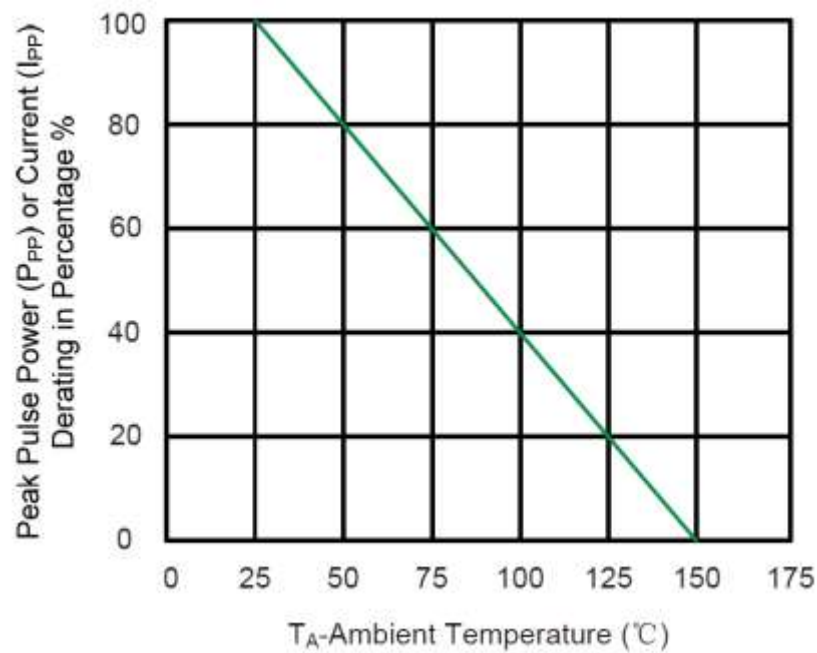


Figure 2. Pulse Derating Curve



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Figure 3. Pulse Waveform

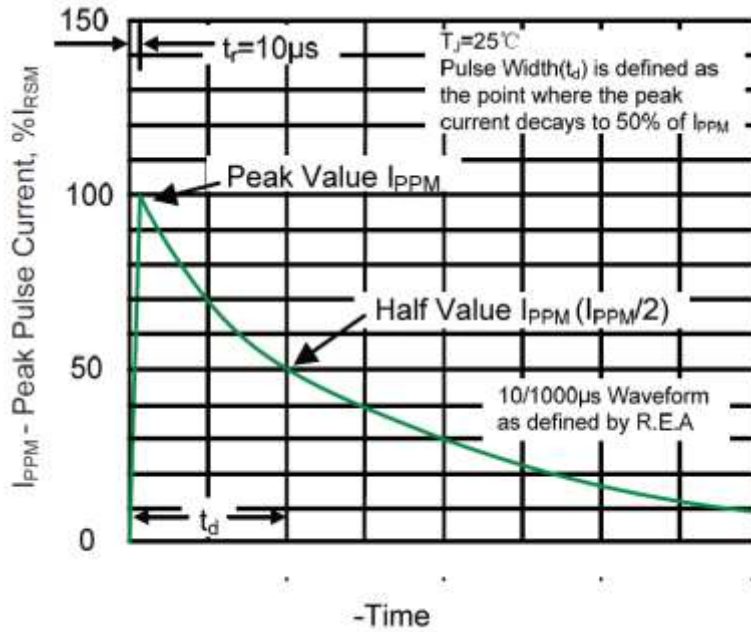
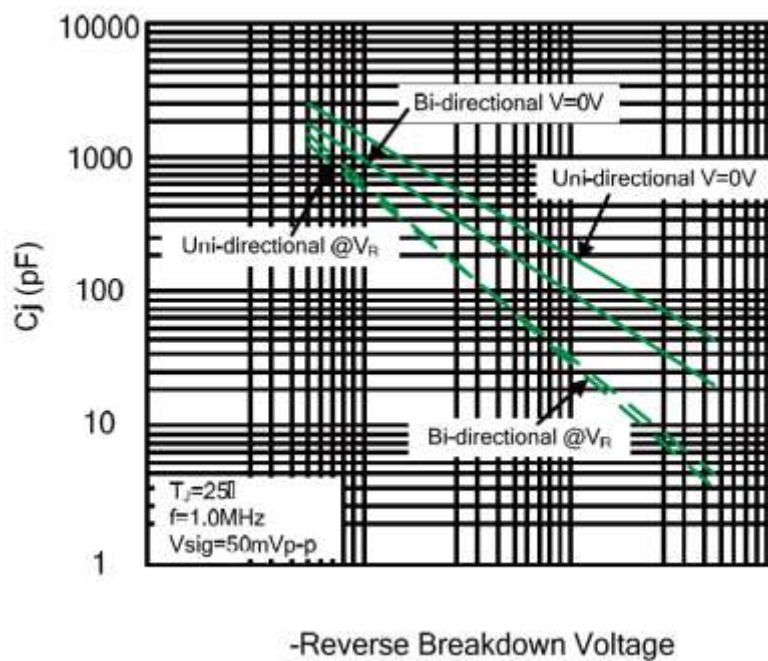


Figure 4. Typical Junction Capacitance



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Figure 5. Steady State Power Dissipation Derating curve

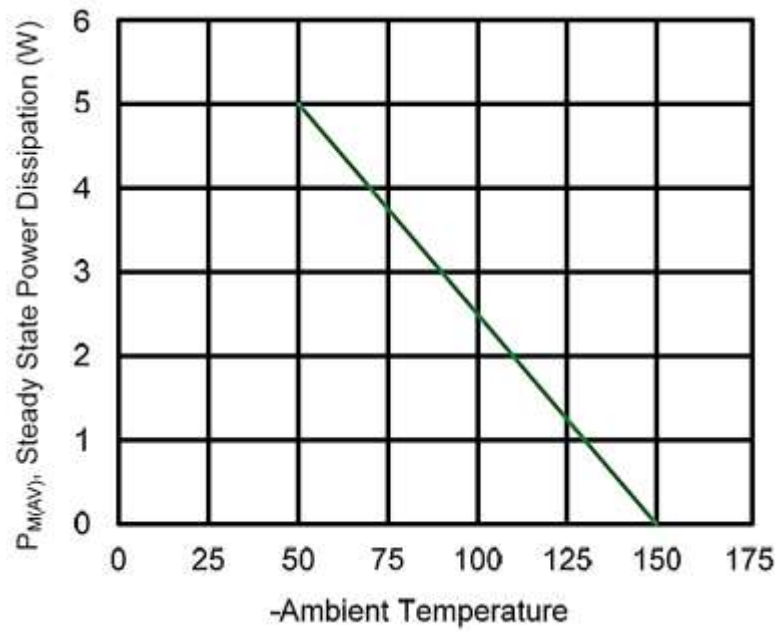
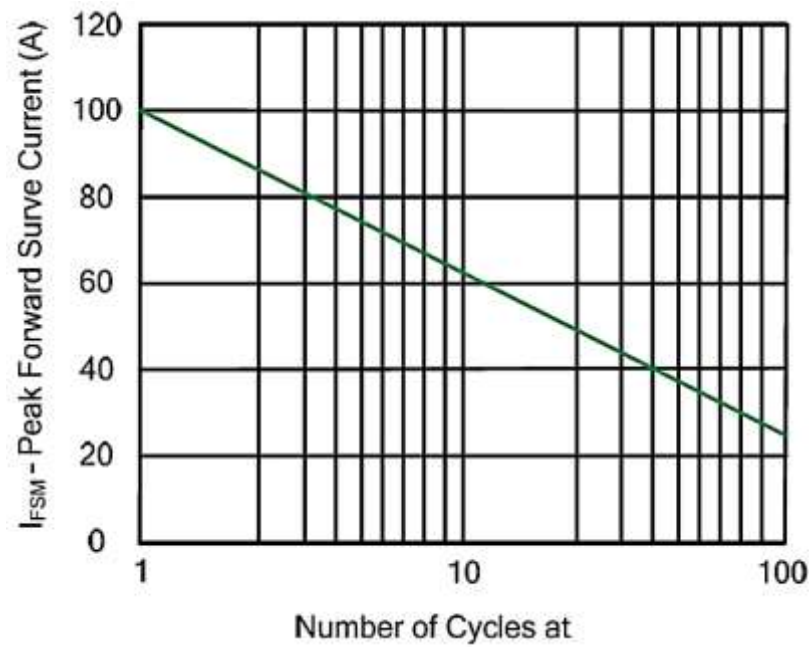
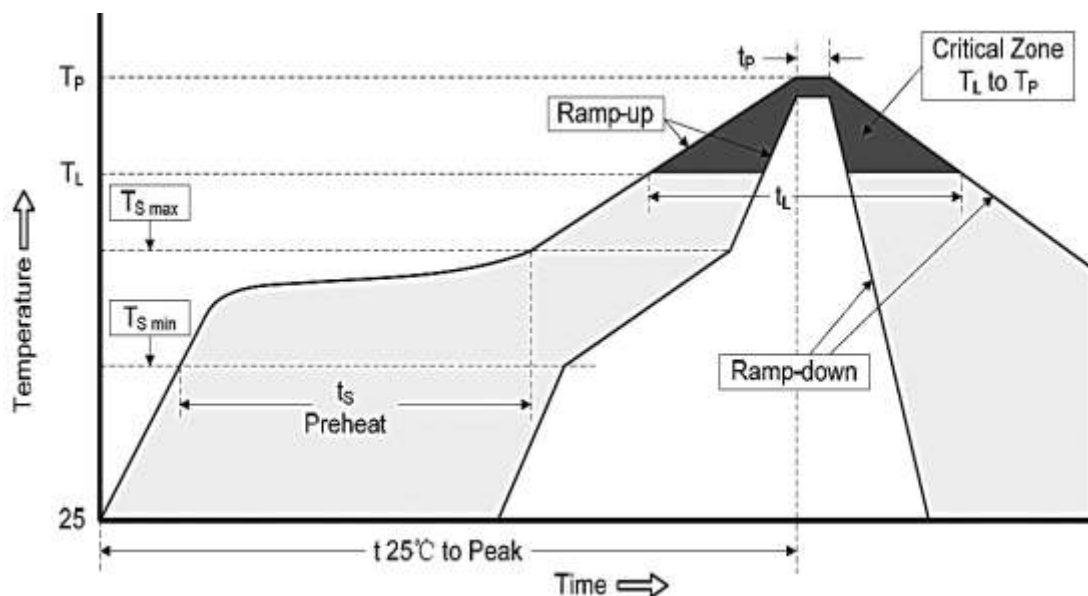


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

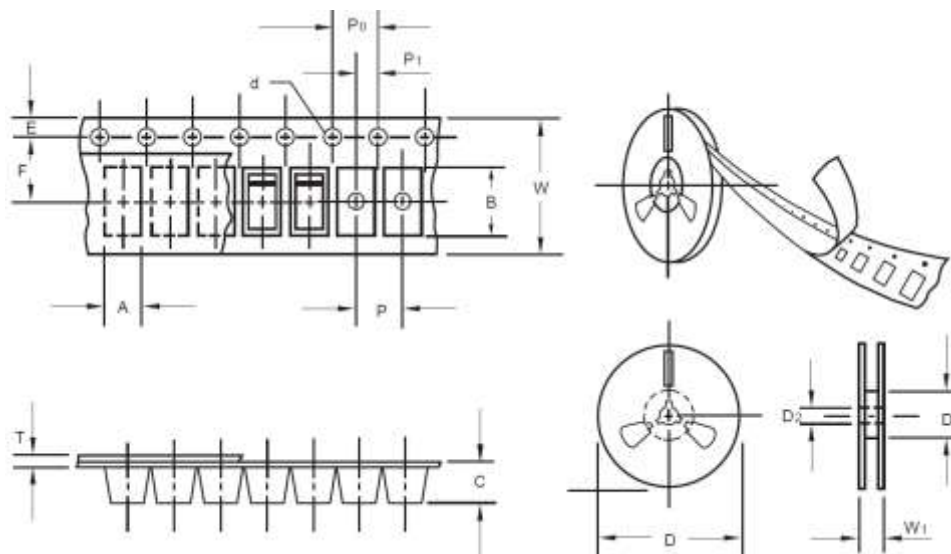


## RECOMMENDED SOLDERING PARAMETERS – FOR REFERENCE ONLY



| PROFILE FEATURE                                      |                                  | PB-FREE ASSEMBLY  |
|------------------------------------------------------|----------------------------------|-------------------|
| Average Ramp-up Rate ( $T_L$ to $T_P$ )              |                                  | 3°C/second Max    |
| Preheat                                              | Temperature Min ( $T_s$ Min.)    | 150°C             |
|                                                      | Temperature Max ( $T_s$ Max.)    | 200°C             |
|                                                      | Time ( $t_s$ Min. to $t_s$ Max.) | 60 ~ 180 seconds  |
| $T_s$ max to $T_L$ Ramp-up Rate                      |                                  | 3°C/second Max    |
| Time maintained above                                | Temperature ( $T_L$ )            | 217°C             |
|                                                      | Time ( $t_L$ )                   | 60 ~ 150 seconds  |
| Peak/Classification Temperature ( $T_P$ )            |                                  | 260 °C            |
| Time within 5°C of actual Peak Temperature ( $t_P$ ) |                                  | 20 ~ 40 seconds   |
| Ramp-down Rate                                       |                                  | 6 °C /Second Max. |
| Time 25 °C to Peak Temperature                       |                                  | 8 Minutes Max.    |
| Suggest reflow times                                 |                                  | 3 Times Max.      |

**TAPE/REEL** - Unit: mm, All Devices are packed in accordance with EIA standard RS-481-A and specifications



| ITEM                     | SYMBOL | TOLERANCE | SMB/DO-214AA |
|--------------------------|--------|-----------|--------------|
| Carrier width            | A      | 0.1       | 3.81         |
| Carrier Length           | B      | 0.1       | 5.41         |
| Carrier Depth            | C      | 0.1       | 2.42         |
| Sprocket hole            | d      | 0.05      | 1.50         |
| 13"Reel outside diameter | D      | 2.0       | 330.00       |
| 13"Reel inner diameter   | D1     | Min.      | 50.00        |
| Feed hole diameter       | D2     | 0.5       | 13.00        |
| Sprocket hole position   | E      | 0.1       | 1.75         |
| Punch hole position      | F      | 0.1       | 5.55         |
| Punch hole pitch         | P      | 0.1       | 8.00         |
| Sprocket hole pitch      | P0     | 0.1       | 4.00         |
| Embossment center        | P1     | 0.1       | 2.00         |
| Overall tape thickness   | T      | 0.1       | 0.30         |
| Tape width               | W      | 0.3       | 12.00        |
| Reel width               | W1     | 1.0       | 12.30        |
| Qty./Reel (pcs)          | 3000   |           |              |

## IMPORTANT NOTES AND DISCLAIMER

1. **ROHS COMPLIANCE:** The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained at Download Center.
2. **REACH COMPLIANCE:** REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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