

|                                         |                                                                                                                                                                                                                                                                                                                                                                               |                                                   |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| <b>SPECIFICATION SHEET NO.</b>          | S0318- SMF190CAL0S0PV                                                                                                                                                                                                                                                                                                                                                         |                                                   |
| <b>ORIGINAL MFG/PART NO.</b>            | LGE Diodes/SMF190CA-L                                                                                                                                                                                                                                                                                                                                                         |                                                   |
| <b>NEXTGEN PART CODE</b>                | SMF190CAL0S0PV                                                                                                                                                                                                                                                                                                                                                                | Indicate This Code For <a href="#">RFQ</a> /Order |
| <b>DATE</b>                             | Mar. 18, 2025                                                                                                                                                                                                                                                                                                                                                                 |                                                   |
| <b>REVISION</b>                         | A1                                                                                                                                                                                                                                                                                                                                                                            | Updated With Most Recent Data                     |
| <b>DESCRIPTION AND MAIN PARAMETRICS</b> | <p>SMD Transient Voltage Suppressor (TVs) Diodes, SMF Series</p> <p>Case SMF/SOD-123FL, 2 Pads,</p> <p>Bidirectional Type, Stand-off Voltage 190V,</p> <p>Peak Pulse Power: 200 Watts, Reverse Surge Current: 0.65A Max.</p> <p>Operating Temp. Range -55°C ~+150°C</p> <p>Package in Tape/Reel, 3000pcs/Reel</p> <p>REACH/RoHS/RoHS III/ Compliant and Halogen Free (HF)</p> |                                                   |
| <b>CUSTOMER</b>                         |                                                                                                                                                                                                                                                                                                                                                                               |                                                   |
| <b>CUSTOMER PART NUMBER</b>             |                                                                                                                                                                                                                                                                                                                                                                               |                                                   |
| <b>CROSS REF. PART NUMBER</b>           |                                                                                                                                                                                                                                                                                                                                                                               |                                                   |
| <b>MEMO</b>                             |                                                                                                                                                                                                                                                                                                                                                                               |                                                   |

|                               |                                                                                     |                                                                                      |                                                                                       |
|-------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>VENDOR APPROVE</b>         |                                                                                     |                                                                                      |                                                                                       |
| Issued/Checked/Approved       |  |  |  |
| Effective Date: Mar. 18, 2025 |                                                                                     |                                                                                      |                                                                                       |

|                         |
|-------------------------|
| <b>CUSTOMER APPROVE</b> |
|                         |
| Date:                   |

## MAIN FEATURE

- Glass Passivated Chip
- 200W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetitive rate (duty cycle):0.01 %
- Uni-Directional and Bi-directional Polarity Option
- Low Leakage
- Excellent Clamping Capability
- Very Fast Response Time: Typically Less Than 1.0ns
- Thermal Resistance Junction- To Ambient: 220  $^{\circ}$ C/W
- Thermal Resistance Junction- To Lead: 100  $^{\circ}$ C/W
- ESD Protection Level (Air & Contact) Base On IEC 61000-4-2
- EFT Protection Level Base On IEC 61000-4-4
- Short Lead time
- Cross Competitors Parts and More.
- REACH/RoHS/RoHS III/ Compliant and Halogen Free (HF)



*Image shown is a representation only.*

*Exact specifications should be obtained  
from the product dimension.*



## APPLICATION

- For SMD application

## 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 SMF190CAL0S0PV For RFQ and Order.

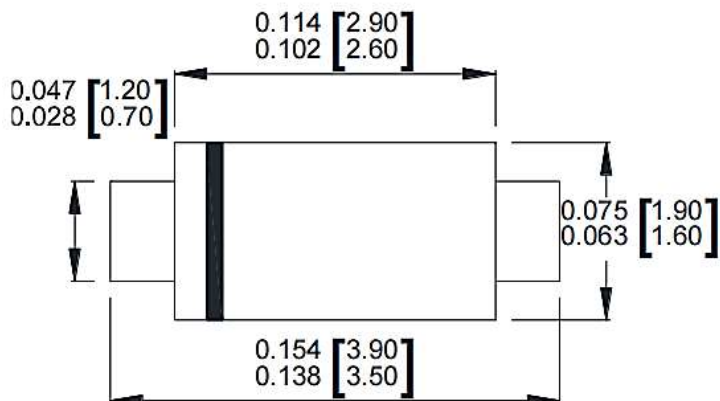
## PART CODE GUIDE

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

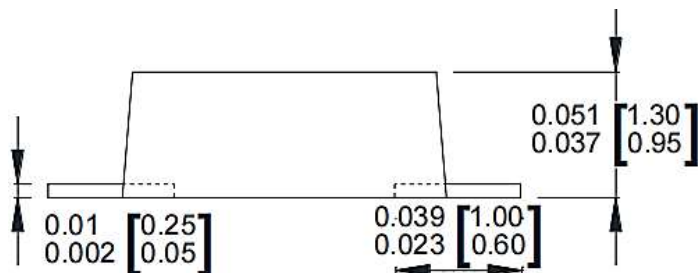
| CODE  | NAME                           | KEY SPECIFICATION OPTION                                                   |
|-------|--------------------------------|----------------------------------------------------------------------------|
| SMF   | Product Series Code            | SMD Transient Voltage Suppressors (TVs) Diodes, Case SMF/SOD-123FL, 2 Pads |
| 190CA | Mode code                      | 190CA: Working Peak Reverse Voltage 190V, Bi-directional Polarity Type     |
| L0S   | Internal Control Code          | Letter or Digits (A~Z, a~z or 1~9)                                         |
| OPV   | Marking Code                   | Marking “PV”                                                               |
| 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 SMF/SOD-123FL Outline

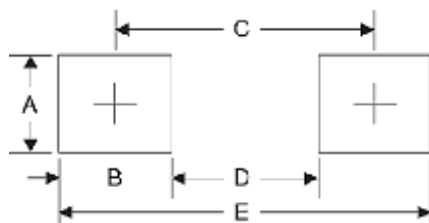
Top View



Side View



Recommend Pad Layout



| SYMBOL      | A     | B     | C     | D     | E     |
|-------------|-------|-------|-------|-------|-------|
| Unit (Inch) | 0.047 | 0.047 | 0.126 | 0.079 | 0.173 |
| Unit (mm)   | 1.20  | 1.20  | 3.20  | 2.00  | 4.40  |

## MECHANICAL DATA

| CASE                                          | EXPOXY                              | LEAD                                             | POLARITY                                            | MOUNTING POSITION | MARKING                     |
|-----------------------------------------------|-------------------------------------|--------------------------------------------------|-----------------------------------------------------|-------------------|-----------------------------|
| JEDEC<br>SMF/SOD-123FL<br>Molded Plastic Body | UL 94V-0 Rate<br>Flame<br>Retardant | Solderable<br>per MIL-STD<br>750, Method<br>2026 | Color Band Denotes<br>Cathode End Except<br>Bipolar | Any               | See<br>Marking<br>Code List |

## MAX. RATING & CHARACTERISTICS - Ratings at 25°C ambient temperature unless otherwise specified.

| PARAMETER                                                                           | SYMBOLS                           | VALUE                  | UNITS |
|-------------------------------------------------------------------------------------|-----------------------------------|------------------------|-------|
| Peak Power Dissipation with 10/1000μs Waveform<br>See Note 1                        | P <sub>pp</sub>                   | 200                    | W     |
| Peak Power Dissipation with 8/20μs waveform<br>See Note 1                           | P <sub>pp</sub>                   | 1000                   | W     |
| Peak Pulse Current with a 10/1000μs waveform<br>See Note 1                          | I <sub>pp</sub>                   | See<br>Page 6~ Page 11 | A     |
| Power Dissipation On Infinite Heatsink at TL = 75 °C                                | PD                                | 0.4                    | W     |
| Peak Forward Surge Current 8.3ms Single Half<br>Sine- Wave Unidirectional Type Only | I <sub>FSM</sub>                  | 20                     | A     |
| Maximum instantaneous forward voltage at 25A<br>Unidirectional Type Only            | V <sub>F</sub>                    | 3.5                    | V     |
| Operating Junction And Storage Temperature Range                                    | T <sub>J</sub> , T <sub>STG</sub> | -55 ~ +150             | °C    |

### Note

1. Non-repetitive Current Pulse Per Fig.5 And Derated Above TA= 25 °C Per Fig.1
2. Measured On 8.3 Ms Single Half Sine-wave Or Equivalent Square Wave, Duty Cycle = 4 Pulses Per Minute Max.

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

| Part Code      | Working Peak Reverse Voltage | Breakdown Voltage |      | Test Current | Max. Reverse Leakage | Max. Reverse Surge Current | Max. Clamping Voltage | Marking Code |
|----------------|------------------------------|-------------------|------|--------------|----------------------|----------------------------|-----------------------|--------------|
|                |                              | VBR @ IT          |      |              |                      |                            |                       |              |
|                | VRWM                         | Min.              | Max. | IT           | IR @ VRWM            | IPP                        | VC @ IPP              |              |
|                | V                            | V                 | V    | mA           | µA                   | A                          | V                     |              |
| SMF033AL00S0FD | 3.3                          | 4.22              | 6.58 | 10           | 500                  | 22.7                       | 8.8                   | FD           |
| SMF050AL00S0FE | 5                            | 6.4               | 7    | 10           | 400                  | 21.74                      | 9.2                   | FE           |
| SMF060AL00S0FG | 6                            | 6.67              | 7.37 | 10           | 400                  | 19.42                      | 10.3                  | FG           |
| SMF065AL00S0FK | 6.5                          | 7.22              | 7.98 | 10           | 250                  | 17.86                      | 11.2                  | FK           |
| SMF070AL00S0FM | 7                            | 7.78              | 8.6  | 10           | 100                  | 16.67                      | 12                    | FM           |
| SMF075AL00S0FP | 7.5                          | 8.33              | 9.21 | 1            | 50                   | 15.5                       | 12.9                  | FP           |
| SMF080AL00S0FR | 8                            | 8.89              | 9.83 | 1            | 25                   | 14.71                      | 13.6                  | FR           |
| SMF085AL00S0FT | 8.5                          | 9.44              | 10.4 | 1            | 10                   | 13.89                      | 14.4                  | FT           |
| SMF090AL00S0FV | 9                            | 10                | 11.1 | 1            | 5                    | 12.99                      | 15.4                  | FV           |
| SMF10AL00S0FX  | 10                           | 11.1              | 12.3 | 1            | 2.5                  | 11.76                      | 17                    | FX           |
| SMF11AL00S0FZ  | 11                           | 12.2              | 13.5 | 1            | 2.5                  | 10.99                      | 18.2                  | FZ           |
| SMF12AL00S0HE  | 12                           | 13.3              | 14.7 | 1            | 2.5                  | 10.05                      | 19.9                  | HE           |
| SMF13AL00S0HGG | 13                           | 14.4              | 15.9 | 1            | 1                    | 9.3                        | 21.5                  | HG           |
| SMF14AL00S0HKG | 14                           | 15.6              | 17.2 | 1            | 1                    | 8.62                       | 23.2                  | HK           |
| SMF15AL00S0HMG | 15                           | 16.7              | 18.5 | 1            | 1                    | 8.2                        | 24.4                  | HM           |
| SMF16AL00S0HPG | 16                           | 17.8              | 19.7 | 1            | 1                    | 7.69                       | 26                    | HP           |
| SMF17AL00S0HRR | 17                           | 18.9              | 20.9 | 1            | 1                    | 7.25                       | 27.6                  | HR           |
| SMF18AL00S0HTG | 18                           | 20                | 22.1 | 1            | 1                    | 6.85                       | 29.2                  | HT           |
| SMF19AL00S0HBB | 19                           | 21.1              | 23.3 | 1            | 1                    | 6.54                       | 30.6                  | HB           |
| SMF20AL00S0HVV | 20                           | 22.2              | 24.5 | 1            | 1                    | 6.17                       | 32.4                  | HV           |

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

| Part Code      | Working Peak Reverse Voltage | Breakdown Voltage |      | Test Current | Max. Reverse Leakage | Max. Reverse Surge Current | Max. Clamping Voltage | Marking Code |
|----------------|------------------------------|-------------------|------|--------------|----------------------|----------------------------|-----------------------|--------------|
|                |                              | VBR @ IT          |      |              |                      |                            |                       |              |
|                | VRWM                         | Min.              | Max. | IT           | IR @ VRWM            | IPP                        | VC @ IPP              |              |
|                | V                            | V                 | V    | mA           | μA                   | A                          | V                     |              |
| SMF22AL000S0HX | 22                           | 24.4              | 26.9 | 1            | 1                    | 5.63                       | 35.5                  | HX           |
| SMF24AL000S0HZ | 24                           | 26.7              | 29.5 | 1            | 1                    | 5.14                       | 38.9                  | HZ           |
| SMF26AL000S0JE | 26                           | 28.9              | 31.9 | 1            | 1                    | 4.75                       | 42.1                  | JE           |
| SMF28AL000S0JG | 28                           | 31.1              | 34.4 | 1            | 1                    | 4.41                       | 45.4                  | JG           |
| SMF30AL000S0JK | 30                           | 33.3              | 36.8 | 1            | 1                    | 4.13                       | 48.4                  | JK           |
| SMF33AL000S0JM | 33                           | 36.7              | 40.6 | 1            | 1                    | 3.75                       | 53.3                  | JM           |
| SMF36AL000S0JP | 36                           | 40                | 44.2 | 1            | 1                    | 3.44                       | 58.1                  | JP           |
| SMF40AL000S0JR | 40                           | 44.4              | 49.1 | 1            | 1                    | 3.1                        | 64.5                  | JR           |
| SMF43AL000S0JT | 43                           | 47.8              | 52.8 | 1            | 1                    | 2.88                       | 69.4                  | JT           |
| SMF45AL000S0JV | 45                           | 50                | 55.3 | 1            | 1                    | 2.75                       | 72.7                  | JV           |
| SMF48AL000S0JX | 48                           | 53.3              | 58.9 | 1            | 1                    | 2.58                       | 77.4                  | JX           |
| SMF51AL000S0JZ | 51                           | 56.7              | 62.7 | 1            | 1                    | 2.43                       | 82.4                  | JZ           |
| SMF54AL000S0XE | 54                           | 60                | 66.3 | 1            | 1                    | 2.3                        | 87.1                  | XE           |
| SMF58AL000S0XG | 58                           | 64.4              | 71.2 | 1            | 1                    | 2.14                       | 93.6                  | XG           |
| SMF60AL000S0XK | 60                           | 66.7              | 73.7 | 1            | 1                    | 2.07                       | 96.8                  | XK           |
| SMF64AL0000XM  | 64                           | 71.1              | 78.6 | 1            | 1                    | 1.94                       | 103                   | XM           |
| SMF70AL000S0XP | 70                           | 77.8              | 86   | 1            | 1                    | 1.77                       | 113                   | XP           |
| SMF75AL000S0XR | 75                           | 83.3              | 92.1 | 1            | 1                    | 1.65                       | 121                   | XR           |
| SMF78AL000S0XT | 78                           | 86.7              | 95.8 | 1            | 1                    | 1.59                       | 126                   | XT           |
| SMF80AL000S0XB | 80                           | 88.8              | 97.6 | 1            | 1                    | 1.55                       | 129                   | XB           |

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

| Part Code      | Working Peak Reverse Voltage | Breakdown Voltage |      | Test Current | Max. Reverse Leakage | Max. Reverse Surge Current | Max. Clamping Voltage | Marking Code |
|----------------|------------------------------|-------------------|------|--------------|----------------------|----------------------------|-----------------------|--------------|
|                |                              | VBR @ IT          |      |              |                      |                            |                       |              |
|                | VRWM                         | Min.              | Max. | IT           | IR @ VRWM            | IPP                        | VC @ IPP              |              |
|                | V                            | V                 | V    | mA           | μA                   | A                          | V                     |              |
| SMF85AL00S0XV  | 85                           | 94.4              | 104  | 1            | 1                    | 1.46                       | 137                   | XV           |
| SMF90AL00S0XX  | 90                           | 100               | 111  | 1            | 1                    | 1.37                       | 146                   | XX           |
| SMF100AL00S0XZ | 100                          | 111               | 123  | 1            | 1                    | 1.23                       | 162                   | XZ           |
| SMF110AL00S0TE | 110                          | 122               | 135  | 1            | 1                    | 1.13                       | 177                   | TE           |
| SMF120AL00S0TG | 120                          | 133               | 147  | 1            | 1                    | 1.04                       | 193                   | TG           |
| SMF130AL00S0TK | 130                          | 144               | 159  | 1            | 1                    | 0.96                       | 209                   | TK           |
| SMF140AL00S0TB | 140                          | 155               | 171  | 1            | 1                    | 0.89                       | 224                   | TB           |
| SMF150AL00S0TM | 150                          | 167               | 185  | 1            | 1                    | 0.82                       | 243                   | TM           |
| SMF160AL00S0TP | 160                          | 178               | 197  | 1            | 1                    | 0.77                       | 259                   | TP           |
| SMF170AL00S0TR | 170                          | 189               | 209  | 1            | 1                    | 0.73                       | 275                   | TR           |
| SMF180AL00S0TT | 180                          | 200               | 220  | 1            | 1                    | 0.68                       | 292                   | TT           |
| SMF190AL00S0TV | 190                          | 211               | 232  | 1            | 1                    | 0.65                       | 308                   | TV           |
| SMF200AL00S0TX | 200                          | 224               | 247  | 1            | 1                    | 0.62                       | 324                   | TX           |
| SMF220AL00S0TZ | 220                          | 246               | 272  | 1            | 1                    | 0.56                       | 356                   | TZ           |
|                |                              |                   |      |              |                      |                            |                       |              |
|                |                              |                   |      |              |                      |                            |                       |              |
|                |                              |                   |      |              |                      |                            |                       |              |
|                |                              |                   |      |              |                      |                            |                       |              |
|                |                              |                   |      |              |                      |                            |                       |              |
|                |                              |                   |      |              |                      |                            |                       |              |

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

| Part Code      | Working Peak Reverse Voltage | Breakdown Voltage |      | Test Current | Max. Reverse Leakage | Max. Reverse Surge Current | Max. Clamping Voltage | Marking Code |
|----------------|------------------------------|-------------------|------|--------------|----------------------|----------------------------|-----------------------|--------------|
|                |                              | VBR @ IT          |      |              |                      |                            |                       |              |
|                | VRWM                         | Min.              | Max. | IT           | IR @ VRWM            | IPP                        | VC @ IPP              |              |
|                | V                            | V                 | V    | mA           | µA                   | A                          | V                     |              |
| SMF033CAL0S0KD | 3.3                          | 4.22              | 6.58 | 10           | 500                  | 22.7                       | 8.8                   | KD           |
| SMF050CAL0S0KE | 5                            | 6.4               | 7    | 10           | 400                  | 21.74                      | 9.2                   | KE           |
| SMF060CAL0S0KG | 6                            | 6.67              | 7.37 | 10           | 400                  | 19.42                      | 10.3                  | KG           |
| SMF065CAL0S0KK | 6.5                          | 7.22              | 7.98 | 10           | 250                  | 17.86                      | 11.2                  | KK           |
| SMF070CAL0S0KM | 7                            | 7.78              | 8.6  | 10           | 100                  | 16.67                      | 12                    | KM           |
| SMF075CAL0S0KP | 7.5                          | 8.33              | 9.21 | 1            | 50                   | 15.5                       | 12.9                  | KP           |
| SMF080CAL0S0KR | 8                            | 8.89              | 9.83 | 1            | 25                   | 14.71                      | 13.6                  | KR           |
| SMF085CAL0S0KT | 8.5                          | 9.44              | 10.4 | 1            | 10                   | 13.89                      | 14.4                  | KT           |
| SMF090CAL0S0KV | 9                            | 10                | 11.1 | 1            | 5                    | 12.99                      | 15.4                  | KV           |
| SMF10CAL00S0KX | 10                           | 11.1              | 12.3 | 1            | 2.5                  | 11.76                      | 17                    | KX           |
| SMF11CAL00S0KZ | 11                           | 12.2              | 13.5 | 1            | 2.5                  | 10.99                      | 18.2                  | KZ           |
| SMF12CAL00S0LE | 12                           | 13.3              | 14.7 | 1            | 2.5                  | 10.05                      | 19.9                  | LE           |
| SMF13CAL00S0LG | 13                           | 14.4              | 15.9 | 1            | 1                    | 9.3                        | 21.5                  | LG           |
| SMF14CAL00S0LK | 14                           | 15.6              | 17.2 | 1            | 1                    | 8.62                       | 23.2                  | LK           |
| SMF15CAL00S0LM | 15                           | 16.7              | 18.5 | 1            | 1                    | 8.2                        | 24.4                  | LM           |
| SMF16CAL00S0LP | 16                           | 17.8              | 19.7 | 1            | 1                    | 7.69                       | 26                    | LP           |
| SMF17CAL00S0LR | 17                           | 18.9              | 20.9 | 1            | 1                    | 7.25                       | 27.6                  | LR           |
| SMF18CAL00S0LT | 18                           | 20                | 22.1 | 1            | 1                    | 6.85                       | 29.2                  | LT           |
| SMF19CAL00S0LB | 19                           | 21.1              | 23.3 | 1            | 1                    | 6.54                       | 30.6                  | LB           |
| SMF20CAL00S0LV | 20                           | 22.2              | 24.5 | 1            | 1                    | 6.17                       | 32.4                  | LV           |

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

| Part Code      | Working Peak Reverse Voltage | Breakdown Voltage |      | Test Current | Max. Reverse Leakage | Max. Reverse Surge Current | Max. Clamping Voltage | Marking Code |
|----------------|------------------------------|-------------------|------|--------------|----------------------|----------------------------|-----------------------|--------------|
|                |                              | VBR @ IT          |      |              |                      |                            |                       |              |
|                | VRWM                         | Min.              | Max. | IT           | IR @ VRWM            | IPP                        | VC @ IPP              |              |
|                | V                            | V                 | V    | mA           | µA                   | A                          | V                     |              |
| SMF22CAL00S0LX | 22                           | 24.4              | 26.9 | 1            | 1                    | 5.63                       | 35.5                  | LX           |
| SMF24CAL00S0LZ | 24                           | 26.7              | 29.5 | 1            | 1                    | 5.14                       | 38.9                  | LZ           |
| SMF26CAL00S0ME | 26                           | 28.9              | 31.9 | 1            | 1                    | 4.75                       | 42.1                  | ME           |
| SMF28CAL00S0MG | 28                           | 31.1              | 34.4 | 1            | 1                    | 4.41                       | 45.4                  | MG           |
| SMF30CAL00S0MK | 30                           | 33.3              | 36.8 | 1            | 1                    | 4.13                       | 48.4                  | MK           |
| SMF33CAL00S0MM | 33                           | 36.7              | 40.6 | 1            | 1                    | 3.75                       | 53.3                  | MM           |
| SMF36CAL00S0MP | 36                           | 40                | 44.2 | 1            | 1                    | 3.44                       | 58.1                  | MP           |
| SMF40CAL00S0MR | 40                           | 44.4              | 49.1 | 1            | 1                    | 3.1                        | 64.5                  | MR           |
| SMF43CAL00S0MT | 43                           | 47.8              | 52.8 | 1            | 1                    | 2.88                       | 69.4                  | MT           |
| SMF45CAL00S0MV | 45                           | 50                | 55.3 | 1            | 1                    | 2.75                       | 72.7                  | MV           |
| SMF48CAL00S0MX | 48                           | 53.3              | 58.9 | 1            | 1                    | 2.58                       | 77.4                  | MX           |
| SMF51CAL00S0MZ | 51                           | 56.7              | 62.7 | 1            | 1                    | 2.43                       | 82.4                  | MZ           |
| SMF54CAL00S0NE | 54                           | 60                | 66.3 | 1            | 1                    | 2.3                        | 87.1                  | NE           |
| SMF58CAL00S0NG | 58                           | 64.4              | 71.2 | 1            | 1                    | 2.14                       | 93.6                  | NG           |
| SMF60CAL00S0NK | 60                           | 66.7              | 73.7 | 1            | 1                    | 2.07                       | 96.8                  | NK           |
| SMF64CAL00S0NM | 64                           | 71.1              | 78.6 | 1            | 1                    | 1.94                       | 103                   | NM           |
| SMF70CAL00S0NP | 70                           | 77.8              | 86   | 1            | 1                    | 1.77                       | 113                   | NP           |
| SMF75CAL00S0NR | 75                           | 83.3              | 92.1 | 1            | 1                    | 1.65                       | 121                   | NR           |
| SMF78CAL00S0NT | 78                           | 86.7              | 95.8 | 1            | 1                    | 1.59                       | 126                   | NT           |
| SMF80CAL00S0NB | 80                           | 88.8              | 97.6 | 1            | 1                    | 1.55                       | 129                   | NB           |

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

| Part Code      | Working Peak Reverse Voltage | Breakdown Voltage |      | Test Current | Max. Reverse Leakage | Max. Reverse Surge Current | Max. Clamping Voltage | Marking Code |
|----------------|------------------------------|-------------------|------|--------------|----------------------|----------------------------|-----------------------|--------------|
|                |                              | VBR @ IT          |      |              |                      |                            |                       |              |
|                | VRWM                         | Min.              | Max. | IT           | IR @ VRWM            | IPP                        | VC @ IPP              |              |
|                | V                            | V                 | V    | mA           | µA                   | A                          | V                     |              |
| SMF85CAL00S0NV | 85                           | 94.4              | 104  | 1            | 1                    | 1.46                       | 137                   | NV           |
| SMF90CAL00S0NX | 90                           | 100               | 111  | 1            | 1                    | 1.37                       | 146                   | NX           |
| SMF100CAL0S0NZ | 100                          | 111               | 123  | 1            | 1                    | 1.23                       | 162                   | NZ           |
| SMF110CAL0S0PE | 110                          | 122               | 135  | 1            | 1                    | 1.13                       | 177                   | PE           |
| SMF120CAL0S0PG | 120                          | 133               | 147  | 1            | 1                    | 1.04                       | 193                   | PG           |
| SMF130CAL0S0PK | 130                          | 144               | 159  | 1            | 1                    | 0.96                       | 209                   | PK           |
| SMF140CAL0S0PB | 140                          | 155               | 171  | 1            | 1                    | 0.89                       | 224                   | PB           |
| SMF150CAL0S0PM | 150                          | 167               | 185  | 1            | 1                    | 0.82                       | 243                   | PM           |
| SMF160CAL0S0PP | 160                          | 178               | 197  | 1            | 1                    | 0.77                       | 259                   | PP           |
| SMF170CAL0S0PR | 170                          | 189               | 209  | 1            | 1                    | 0.73                       | 275                   | PR           |
| SMF180CAL0S0PT | 180                          | 200               | 220  | 1            | 1                    | 0.68                       | 292                   | PT           |
| SMF190CAL0S0PV | 190                          | 211               | 232  | 1            | 1                    | 0.65                       | 308                   | PV           |
| SMF200CAL0S0PX | 200                          | 224               | 247  | 1            | 1                    | 0.62                       | 324                   | PX           |
| SMF220CAL0S0PZ | 220                          | 246               | 272  | 1            | 1                    | 0.56                       | 356                   | PZ           |
|                |                              |                   |      |              |                      |                            |                       |              |
|                |                              |                   |      |              |                      |                            |                       |              |
|                |                              |                   |      |              |                      |                            |                       |              |

**Note:**

- The available parts are "A" type only, the parts without A( VBR is  $\pm 10\%$ ) is not available
- For Bi-Directional devices having Vr of 10 Volts and under, the IR limit is double

**RATINGS AND CHARACTERISTICS CURVES-** For Reference Only, Ta=25°C Unless Otherwise Specified.

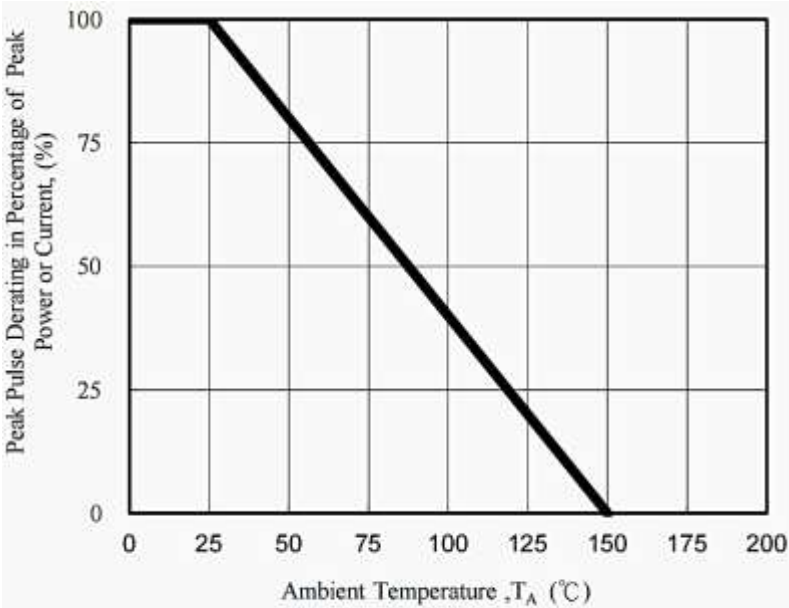


Fig. 1 - Pulse Derating Curve

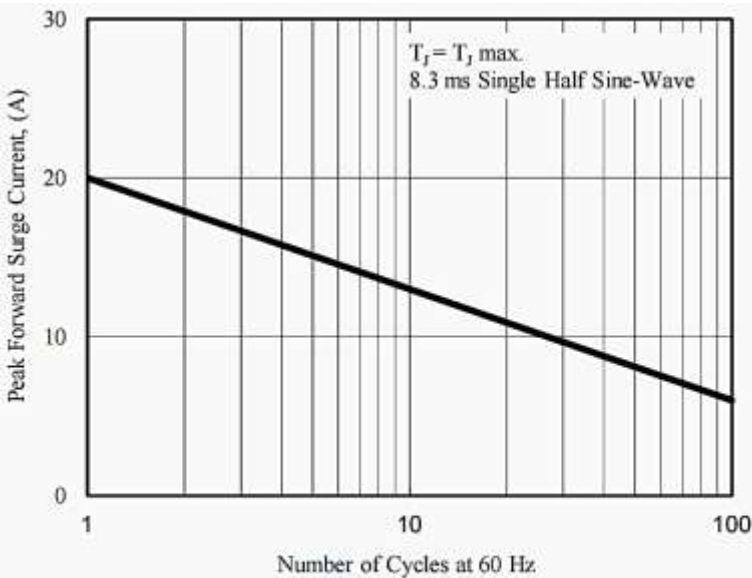


Fig. 2 - Maximum Non-Repetitive Surge Current

**RATINGS AND CHARACTERISTICS CURVES-** For Reference Only, Ta=25°C Unless Otherwise Specified.

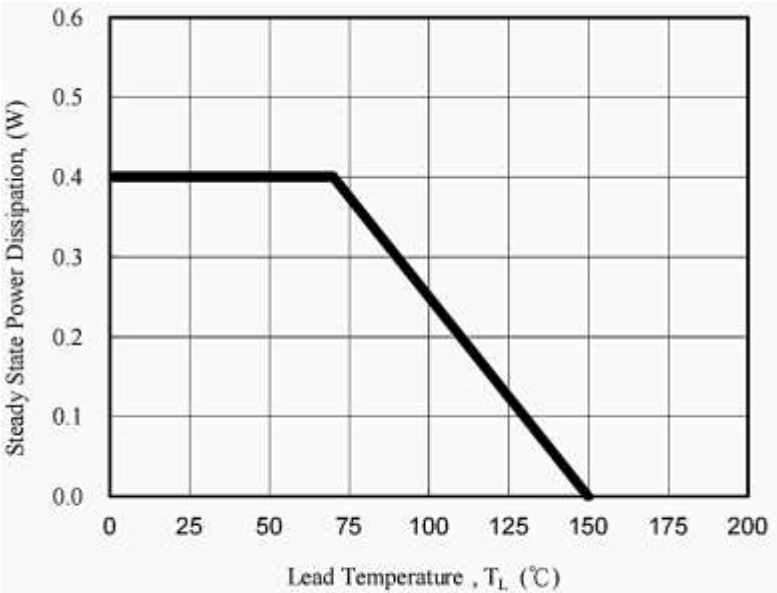


Fig. 3 - Steady State Power Derating Curve

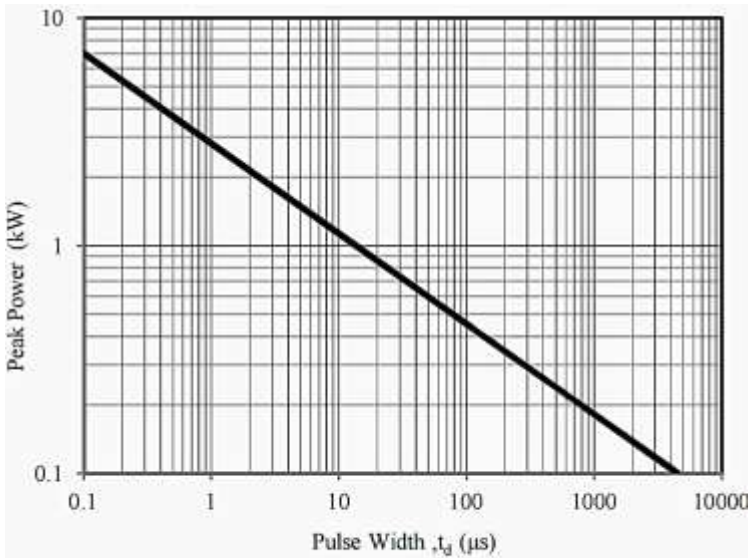
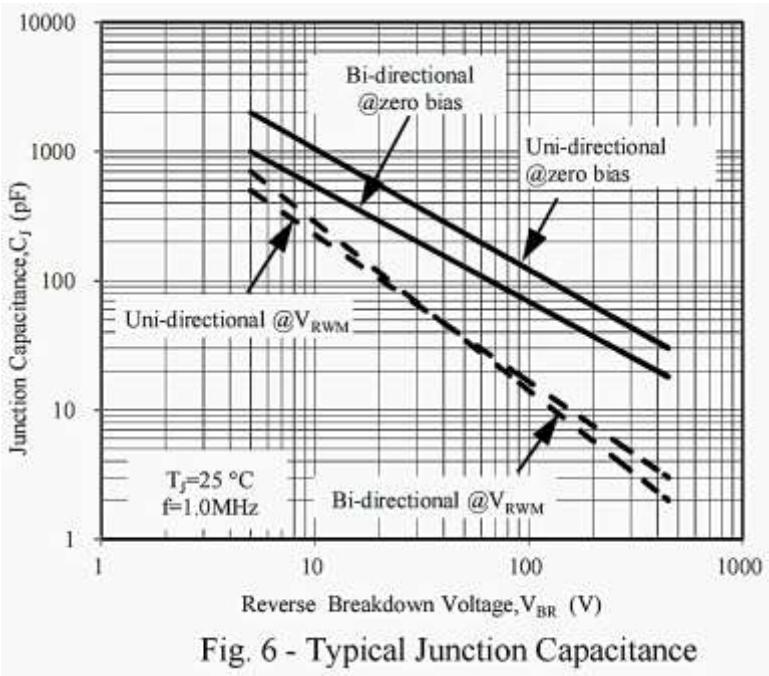
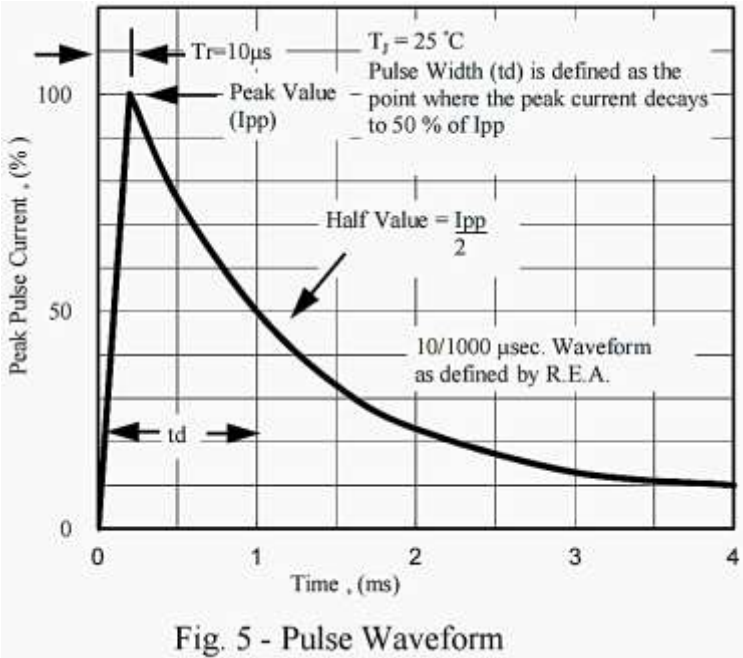
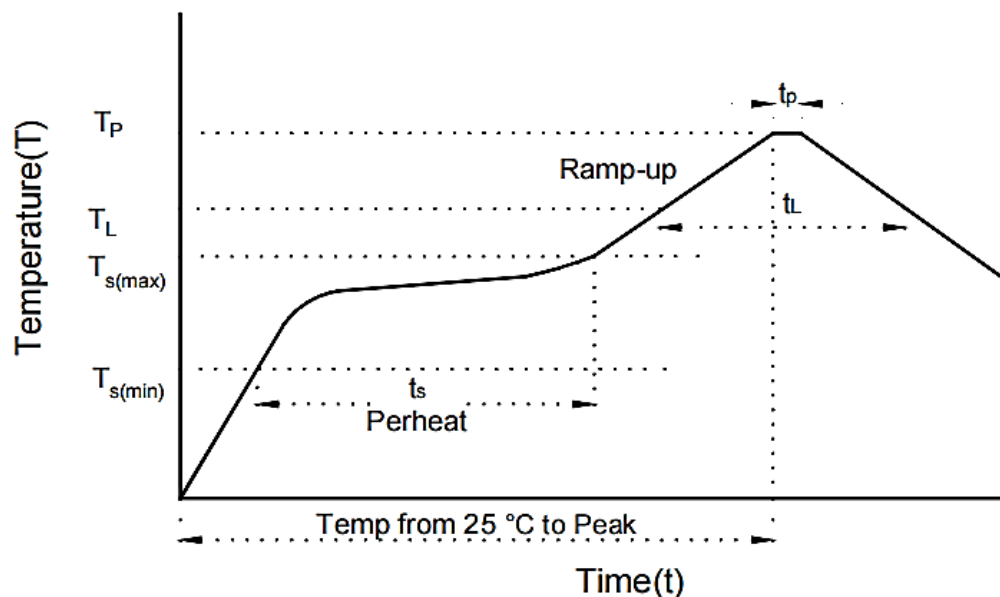


Fig. 4 - Peak Pulse Power Rating Curve

**RATINGS AND CHARACTERISTICS CURVES-** For Reference Only,  $T_a=25^{\circ}\text{C}$  Unless Otherwise Specified.

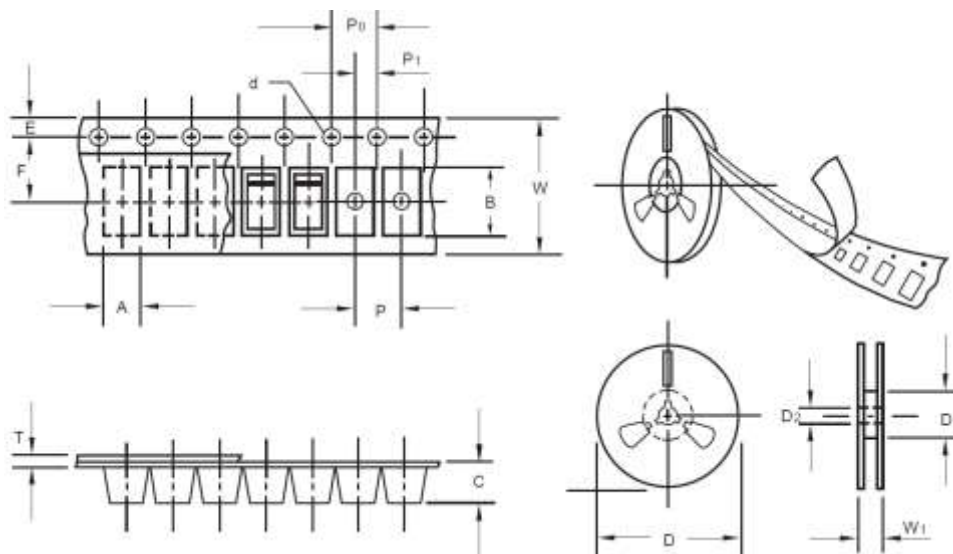


## RECOMMENDED SOLDERING PARAMETERS – FOR REFERENCE ONLY



| PROFILE FEATURE                                      |                                  | PB-FREE ASSEMBLY  |
|------------------------------------------------------|----------------------------------|-------------------|
| Average Ramp-up Rate ( $T_s$ Max 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  |
| Time maintained above                                | Temperature ( $T_L$ )            | 220°C             |
|                                                      | Time ( $t_L$ )                   | 60 ~ 150 seconds  |
| Peak/Classification Temperature ( $T_p$ )            |                                  | 245 °C            |
| Time within 5°C of actual Peak Temperature ( $t_p$ ) |                                  | 10 ~ 30 seconds   |
| Ramp-down Rate                                       |                                  | 5 °C /Second Max. |
| Time 25 °C to Peak Temperature                       |                                  | 6 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 | SMF/SOD-123FL |
|-------------------------|--------|-----------|---------------|
| Carrier width           | A      | 0.1       | 2.10          |
| Carrier Length          | B      | 0.1       | 4.00          |
| Carrier Depth           | C      | 0.1       | 1.60          |
| Sprocket hole           | d      | 0.05      | 1.55          |
| 7"Reel outside diameter | D      | 2.0       | 178.00        |
| 7"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       | 3.50          |
| Punch hole pitch        | P      | 0.1       | 4.00          |
| Sprocket hole pitch     | P0     | 0.1       | 4.00          |
| Embossment center       | P1     | 0.1       | 2.00          |
| Overall tape thickness  | T      | 0.1       | 0.25          |
| Tape width              | W      | 0.3       | 8.15          |
| Reel width              | W1     | 1.0       | 10.50         |
| Qty. Per 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.
4. NextGen Component, Inc (*NextGen*) reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.
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7. *NextGen* products are not authorized for use as critical components in life support devices or systems without express written approval by *NextGen*.
8. *NextGen* requires that customers first obtain an RMA (Returned Merchandise Authorization) number prior to returning any products. Returns must be made within 30 days of the date of invoice, be in the original packaging, unused and like-new condition. At the time of quoting or purchasing, a product may say that it is Non-Cancelable/ Non-Returnable (NCNR). These products are not returnable and not refundable.