

|   |                |
|---|----------------|
|  | <b>E480232</b> |
|---|----------------|

**Features**

- For Surface Mount Application in Order to Optimize Board Space
- Built-in Strain Relief
- Glass Passivated Junction
- For Bidirectional Devices Add "C" To The Suffix of The Part Number: i.e.SMLJ5.0CA for 5% Tolerance
- Excellent Clamping Capability
- Repetition Rate(duty cycle):0.5%
- Fast Response Time: Typical Less Than 1ps From 0V to BV Min
- Typical I<sub>D</sub> Less than 1μA Above 10V
- High Temperature Soldering: 260°C/10 Seconds at Terminals
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

**Mechanical Data**

- Polarity: Color Band Denotes Positive End( Cathode) Except Bi-directional Types
- Weight: 0.007 ounce, 0.21 gram
- Standard Packaging: 16mm Tape Per ( EIA 481).
- Terminals: Solderable Per MIL-STD-750, Method 2026

**Maximum Ratings**

- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 17.5°C/W Junction to Lead
- Thermal Resistance: 75°C/W Junction to Ambient

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

|  |                  |               |                |
|--|------------------|---------------|----------------|
| Peak Pulse Power Surge Current on 10/1000μs Waveform | I <sub>PPM</sub> | See the Table | Note 2, Fig3   |
| Peak Pulse Power Dissipation on 10/1000μs Waveform   | P <sub>PPM</sub> | 3000W(Min)    | Note 2,3, Fig1 |

**Note:**

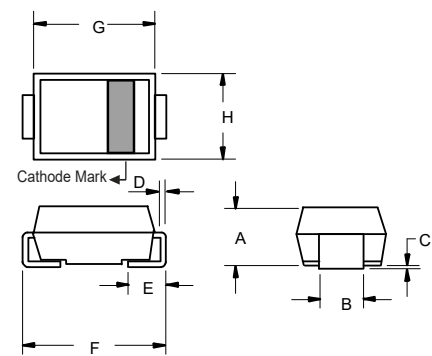
1. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
2. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub>=25 °C per Fig.4.
3. Mounted on 8.0mm<sup>2</sup> copper pads to each terminal.

Pin Configuration:



**3000 Watt TVS  
5.0 to 440 Volts**

**SMC (DO-214AB)  
(LEAD FRAME)**



| DIM | INCHES |       | MM    |       | NOTE |
|-----|--------|-------|-------|-------|------|
|     | MIN    | MAX   | MIN   | MAX   |      |
| A   | 0.079  | 0.103 | 2.00  | 2.62  |      |
| B   | 0.108  | 0.128 | 2.75  | 3.25  |      |
| C   | 0.002  | 0.008 | 0.051 | 0.203 |      |
| D   | 0.006  | 0.012 | 0.152 | 0.305 |      |
| E   | 0.030  | 0.060 | 0.76  | 1.52  |      |
| F   | 0.305  | 0.320 | 7.75  | 8.13  |      |
| G   | 0.260  | 0.280 | 6.60  | 7.11  |      |
| H   | 0.220  | 0.245 | 5.59  | 6.22  |      |

**Suggested Solder Pad Layout**



**Electrical Characteristics @ 25°C Unless Otherwise Specified**

| MCC<br>Part Number | Reverse<br>Stand-Off<br>Voltage | Breakdown Voltage<br>$V_{BR}(V)$ |      | Test<br>Current | Max.<br>Clamping Voltage<br>@ $I_{PP}$ | Peak<br>Pulse<br>Current | Reverse Leakage<br>Current@ $V_{WM}$ | Marking Code |     |
|--------------------|---------------------------------|----------------------------------|------|-----------------|--|--------------------------|--------------------------------------|--------------|-----|
|                    | $V_{WM}(V)$                     | Min                              | Max  | $I_T(mA)$       | $V_C(V)$                               | $I_{PP}(A)$              | $I_D(\mu A)$                         |              |     |
| SMLJ5.0C           | 5.0                             | 6.40                             | 7.30 | 10              | 9.6                                    | 312.5                    | 1000                                 | DDD          | IDD |
| SMLJ5.0CA          | 5.0                             | 6.40                             | 7.00 | 10              | 9.2                                    | 326.0                    | 1000                                 | DDE          | IDE |
| SMLJ6.0C           | 6.0                             | 6.67                             | 8.15 | 10              | 11.4                                   | 263.2                    | 1000                                 | DDF          | IDF |
| SMLJ6.0CA          | 6.0                             | 6.67                             | 7.37 | 10              | 10.3                                   | 291.3                    | 1000                                 | DDG          | IDG |
| SMLJ6.5C           | 6.5                             | 7.22                             | 8.82 | 10              | 12.3                                   | 243.9                    | 500                                  | DDH          | IDH |
| SMLJ6.5CA          | 6.5                             | 7.22                             | 7.98 | 10              | 11.2                                   | 267.9                    | 500                                  | DDK          | IDK |
| SMLJ7.0C           | 7.0                             | 7.78                             | 9.51 | 10              | 13.3                                   | 225.6                    | 200                                  | DDL          | IDL |
| SMLJ7.0CA          | 7.0                             | 7.78                             | 8.60 | 10              | 12.0                                   | 250.0                    | 200                                  | DDM          | IDM |
| SMLJ7.5C           | 7.5                             | 8.33                             | 10.2 | 1               | 14.3                                   | 209.8                    | 100                                  | DDN          | IDN |
| SMLJ7.5CA          | 7.5                             | 8.33                             | 9.21 | 1               | 12.9                                   | 232.6                    | 100                                  | DDP          | IDP |
| SMLJ8.0C           | 8.0                             | 8.89                             | 10.9 | 1               | 15.0                                   | 200.0                    | 50                                   | DDQ          | IDQ |
| SMLJ8.0CA          | 8.0                             | 8.89                             | 9.83 | 1               | 13.6                                   | 220.6                    | 50                                   | DDR          | IDR |
| SMLJ8.5C           | 8.5                             | 9.44                             | 11.5 | 1               | 15.9                                   | 188.6                    | 25                                   | DDS          | IDS |
| SMLJ8.5CA          | 8.5                             | 9.44                             | 10.4 | 1               | 14.4                                   | 208.4                    | 25                                   | DDT          | IDT |
| SMLJ9.0C           | 9.0                             | 10.0                             | 12.2 | 1               | 16.9                                   | 177.4                    | 10                                   | DDU          | IDU |
| SMLJ9.0CA          | 9.0                             | 10.0                             | 11.1 | 1               | 15.4                                   | 194.8                    | 10                                   | DDV          | IDV |
| SMLJ10C            | 10                              | 11.1                             | 13.6 | 1               | 18.8                                   | 159.6                    | 5                                    | DDW          | IDW |
| SMLJ10CA           | 10                              | 11.1                             | 12.3 | 1               | 17.0                                   | 176.4                    | 5                                    | DDX          | IDX |
| SMLJ11C            | 11                              | 12.2                             | 14.9 | 1               | 20.1                                   | 149.2                    | 5                                    | DDY          | IDY |
| SMLJ11CA           | 11                              | 12.2                             | 13.5 | 1               | 18.2                                   | 164.8                    | 5                                    | DDZ          | IDZ |
| SMLJ12C            | 12                              | 13.3                             | 16.3 | 1               | 22.0                                   | 136.4                    | 5                                    | DED          | IED |
| SMLJ12CA           | 12                              | 13.3                             | 14.7 | 1               | 19.9                                   | 150.6                    | 5                                    | DEE          | IEE |
| SMLJ13C            | 13                              | 14.4                             | 17.6 | 1               | 23.8                                   | 126.0                    | 5                                    | DEF          | IEF |
| SMLJ13CA           | 13                              | 14.4                             | 15.9 | 1               | 21.5                                   | 139.4                    | 5                                    | DEG          | IEG |
| SMLJ14C            | 14                              | 15.6                             | 19.1 | 1               | 25.8                                   | 116.2                    | 5                                    | DEH          | IEH |
| SMLJ14CA           | 14                              | 15.6                             | 17.2 | 1               | 23.2                                   | 129.4                    | 5                                    | DEK          | IEK |
| SMLJ15C            | 15                              | 16.7                             | 20.4 | 1               | 26.9                                   | 111.6                    | 5                                    | DEL          | IEL |
| SMLJ15CA           | 15                              | 16.7                             | 18.5 | 1               | 24.4                                   | 123.0                    | 5                                    | DEM          | IEM |
| SMLJ16C            | 16                              | 17.8                             | 21.8 | 1               | 28.8                                   | 104.2                    | 5                                    | DEN          | IEN |
| SMLJ16CA           | 16                              | 17.8                             | 19.7 | 1               | 26.0                                   | 115.4                    | 5                                    | DEP          | IEP |
| SMLJ17C            | 17                              | 18.9                             | 23.1 | 1               | 30.5                                   | 98.4                     | 5                                    | DEQ          | IEQ |
| SMLJ17CA           | 17                              | 18.9                             | 20.9 | 1               | 27.6                                   | 106.6                    | 5                                    | DER          | IER |
| SMLJ18C            | 18                              | 20.0                             | 24.4 | 1               | 32.2                                   | 93.2                     | 5                                    | DES          | IES |
| SMLJ18CA           | 18                              | 20.0                             | 22.1 | 1               | 29.2                                   | 102.8                    | 5                                    | DET          | IET |
| SMLJ20C            | 20                              | 22.2                             | 27.1 | 1               | 35.8                                   | 83.8                     | 5                                    | DEU          | IEU |
| SMLJ20CA           | 20                              | 22.2                             | 24.5 | 1               | 32.4                                   | 92.6                     | 5                                    | DEV          | IEV |
| SMLJ22C            | 22                              | 24.4                             | 29.8 | 1               | 39.4                                   | 76.2                     | 5                                    | DEW          | IEW |
| SMLJ22CA           | 22                              | 24.4                             | 26.9 | 1               | 35.5                                   | 84.4                     | 5                                    | DEX          | IEX |
| SMLJ24C            | 24                              | 26.7                             | 32.6 | 1               | 43.0                                   | 69.8                     | 5                                    | DEY          | IEY |
| SMLJ24CA           | 24                              | 26.7                             | 29.5 | 1               | 38.9                                   | 77.2                     | 5                                    | DEZ          | IEZ |
| SMLJ26C            | 26                              | 28.9                             | 35.3 | 1               | 46.6                                   | 64.4                     | 5                                    | DFD          | IFD |
| SMLJ26CA           | 26                              | 28.9                             | 31.9 | 1               | 42.1                                   | 71.2                     | 5                                    | DFE          | IFE |
| SMLJ28C            | 28                              | 31.1                             | 38.0 | 1               | 50.0                                   | 60.0                     | 5                                    | DFF          | IFF |
| SMLJ28CA           | 28                              | 31.1                             | 34.4 | 1               | 45.4                                   | 66.0                     | 5                                    | DFG          | IFG |
| SMLJ30C            | 30                              | 33.3                             | 40.7 | 1               | 53.5                                   | 56.0                     | 5                                    | DFH          | IFH |

For parts without A, the VBR is +10%.

Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC Part Number | Reverse Stand-Off Voltage | Breakdown Voltage $V_{BR}(V)$ |      | Test Current | Max. Clamping Voltage @ $I_{PP}$ | Peak Pulse Current | Reverse Leakage Current@ $V_{WM}$ | Marking Code |     |
|-----------------|---------------------------|-------------------------------|------|--------------|----------------------------------|--------------------|-----------------------------------|--------------|-----|
|                 | $V_{WM}(V)$               | Min                           | Max  | $I_T(mA)$    | $V_C(V)$                         | $I_{PP}(A)$        | $I_D(\mu A)$                      |              |     |
| SMLJ30CA        | 30                        | 33.3                          | 36.8 | 1            | 48.4                             | 62.0               | 5                                 | DFK          | IFK |
| SMLJ33C         | 33                        | 36.7                          | 44.9 | 1            | 59.0                             | 50.4               | 5                                 | DFL          | IFL |
| SMLJ33CA        | 33                        | 36.7                          | 40.6 | 1            | 53.3                             | 56.2               | 5                                 | DFM          | IFM |
| SMLJ36C         | 36                        | 40.0                          | 48.9 | 1            | 64.3                             | 46.6               | 5                                 | DFN          | IFN |
| SMLJ36CA        | 36                        | 40.0                          | 44.2 | 1            | 58.1                             | 51.6               | 5                                 | DFP          | IFP |
| SMLJ40C         | 40                        | 44.4                          | 54.3 | 1            | 71.4                             | 42.0               | 5                                 | DFQ          | IFQ |
| SMLJ40CA        | 40                        | 44.4                          | 49.1 | 1            | 64.5                             | 46.4               | 5                                 | DFR          | IFR |
| SMLJ43C         | 43                        | 47.8                          | 58.4 | 1            | 76.7                             | 39.2               | 5                                 | DFS          | IFS |
| SMLJ43CA        | 43                        | 47.8                          | 52.8 | 1            | 69.4                             | 43.2               | 5                                 | DFT          | IFT |
| SMLJ45C         | 45                        | 50.0                          | 61.1 | 1            | 80.3                             | 37.4               | 5                                 | DFU          | IFU |
| SMLJ45CA        | 45                        | 50.0                          | 55.3 | 1            | 72.7                             | 41.2               | 5                                 | DFV          | IFV |
| SMLJ48C         | 48                        | 53.3                          | 65.1 | 1            | 85.5                             | 35.0               | 5                                 | DFW          | IFW |
| SMLJ48CA        | 48                        | 53.3                          | 58.9 | 1            | 77.4                             | 38.8               | 5                                 | DFX          | IFX |
| SMLJ51C         | 51                        | 56.7                          | 69.3 | 1            | 91.1                             | 37.0               | 5                                 | DFY          | IFY |
| SMLJ51CA        | 51                        | 56.7                          | 62.7 | 1            | 82.4                             | 36.4               | 5                                 | DFZ          | IFZ |
| SMLJ54C         | 54                        | 60.0                          | 73.3 | 1            | 96.3                             | 31.2               | 5                                 | DGD          | IGD |
| SMLJ54CA        | 54                        | 60.0                          | 66.3 | 1            | 87.1                             | 34.4               | 5                                 | DGE          | IGE |
| SMLJ58C         | 58                        | 64.4                          | 78.7 | 1            | 103                              | 39.2               | 5                                 | DGF          | IGF |
| SMLJ58CA        | 58                        | 64.4                          | 71.2 | 1            | 93.6                             | 32.0               | 5                                 | DGG          | IGG |
| SMLJ60C         | 60                        | 66.7                          | 81.5 | 1            | 107                              | 28.0               | 5                                 | DGH          | IGH |
| SMLJ60CA        | 60                        | 66.7                          | 73.7 | 1            | 96.8                             | 31.0               | 5                                 | DGK          | IGK |
| SMLJ64C         | 64                        | 71.1                          | 86.9 | 1            | 114                              | 26.4               | 5                                 | DGL          | IGL |
| SMLJ64CA        | 64                        | 71.1                          | 78.6 | 1            | 103                              | 29.2               | 5                                 | DGM          | IGM |
| SMLJ70C         | 70                        | 77.8                          | 95.1 | 1            | 125                              | 24.0               | 5                                 | DGN          | IGN |
| SMLJ70CA        | 70                        | 77.8                          | 86.0 | 1            | 113                              | 26.6               | 5                                 | DGP          | IGP |
| SMLJ75C         | 75                        | 83.3                          | 102  | 1            | 134                              | 22.4               | 5                                 | DGQ          | IGQ |
| SMLJ75CA        | 75                        | 83.3                          | 92.1 | 1            | 121                              | 24.8               | 5                                 | DGR          | IGR |
| SMLJ78C         | 78                        | 86.7                          | 106  | 1            | 139                              | 21.6               | 5                                 | DGS          | IGS |
| SMLJ78CA        | 78                        | 86.7                          | 95.8 | 1            | 126                              | 22.8               | 5                                 | DGT          | IGT |
| SMLJ85C         | 85                        | 94.4                          | 115  | 1            | 151                              | 19.8               | 5                                 | DGU          | IGU |
| SMLJ85CA        | 85                        | 94.4                          | 104  | 1            | 137                              | 20.8               | 5                                 | DGV          | IGV |
| SMLJ90C         | 90                        | 100                           | 122  | 1            | 160                              | 18.8               | 5                                 | DGW          | IGW |
| SMLJ90CA        | 90                        | 100                           | 111  | 1            | 146                              | 20.6               | 5                                 | DGX          | IGX |
| SMLJ100C        | 100                       | 111                           | 136  | 1            | 179                              | 16.8               | 5                                 | DGY          | IGY |
| SMLJ100CA       | 100                       | 111                           | 123  | 1            | 162                              | 18.6               | 5                                 | DGZ          | IGZ |
| SMLJ110C        | 110                       | 122                           | 149  | 1            | 196                              | 15.4               | 5                                 | DHD          | IHD |
| SMLJ110CA       | 110                       | 122                           | 135  | 1            | 177                              | 16.8               | 5                                 | DHE          | IHE |
| SMLJ120C        | 120                       | 133                           | 163  | 1            | 214                              | 14.0               | 5                                 | DHF          | IHF |
| SMLJ120CA       | 120                       | 133                           | 147  | 1            | 193                              | 15.6               | 5                                 | DHG          | IHG |
| SMLJ130C        | 130                       | 144                           | 176  | 1            | 231                              | 13.0               | 5                                 | DHH          | IHH |
| SMLJ130CA       | 130                       | 144                           | 159  | 1            | 209                              | 14.4               | 5                                 | DHK          | IHK |
| SMLJ150C        | 150                       | 167                           | 204  | 1            | 268                              | 11.2               | 5                                 | DHL          | IHL |
| SMLJ150CA       | 150                       | 167                           | 185  | 1            | 243                              | 12.4               | 5                                 | DHM          | IHM |
| SMLJ160C        | 160                       | 178                           | 218  | 1            | 287                              | 10.4               | 5                                 | DHN          | IHN |
| SMLJ160CA       | 160                       | 178                           | 197  | 1            | 259                              | 11.6               | 5                                 | DHP          | IHP |
| SMLJ170C        | 170                       | 189                           | 231  | 1            | 304                              | 9.8                | 5                                 | DHQ          | IHQ |

For parts without A, the VBR is +10%.

Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC Part Number | Reverse Stand-Off Voltage | Breakdown Voltage $V_{BR}(V)$ |      | Test Current | Max. Clamping Voltage @ $I_{PP}$ | Peak Pulse Current | Reverse Leakage Current @ $V_{WM}$ | Marking Code |     |
|-----------------|---------------------------|-------------------------------|------|--------------|----------------------------------|--------------------|------------------------------------|--------------|-----|
|                 | $V_{WM}(V)$               | Min                           | Max  | $I_T(mA)$    | $V_C(V)$                         | $I_{PP}(A)$        | $I_D(\mu A)$                       |              |     |
| SMLJ170CA       | 170                       | 189                           | 209  | 1            | 275                              | 11.0               | 5                                  | DHR          | IHR |
| SMLJ180CA       | 180                       | 200                           | 220  | 5            | 291.6                            | 10.29              | 2                                  | DHT          |     |
| SMLJ190CA       | 190                       | 211                           | 232  | 5            | 307.8                            | 9.75               | 2                                  | DHV          |     |
| SMLJ200CA       | 200                       | 224                           | 247  | 5            | 324                              | 9.26               | 2                                  | DHW          |     |
| SMLJ220CA       | 220                       | 246                           | 272  | 5            | 356                              | 8.43               | 2                                  | DHX          |     |
| SMLJ250CA       | 250                       | 279                           | 309  | 5            | 405                              | 7.41               | 2                                  | DHZ          |     |
| SMLJ300CA       | 300                       | 335                           | 371  | 5            | 486                              | 6.17               | 2                                  | DJE          |     |
| SMLJ350CA       | 350                       | 391                           | 432  | 5            | 567                              | 5.29               | 2                                  | DJG          |     |
| SMLJ400CA       | 400                       | 447                           | 494  | 5            | 648                              | 4.63               | 2                                  | DJK          |     |
| SMLJ440CA       | 440                       | 492                           | 543  | 5            | 713                              | 4.21               | 2                                  | DJM          |     |
| SMLJ5.0         | 5.0                       | 6.40                          | 7.30 | 10           | 9.6                              | 312.5              | 1000                               | RDD          |     |
| SMLJ5.0A        | 5.0                       | 6.40                          | 7.00 | 10           | 9.2                              | 326.0              | 1000                               | RDE          |     |
| SMLJ6.0         | 6.0                       | 6.67                          | 8.15 | 10           | 11.4                             | 263.2              | 1000                               | RDF          |     |
| SMLJ6.0A        | 6.0                       | 6.67                          | 7.37 | 10           | 10.3                             | 291.3              | 1000                               | RDG          |     |
| SMLJ6.5         | 6.5                       | 7.22                          | 8.82 | 10           | 12.3                             | 243.9              | 500                                | RDH          |     |
| SMLJ6.5A        | 6.5                       | 7.22                          | 7.98 | 10           | 11.2                             | 267.9              | 500                                | RDK          |     |
| SMLJ7.0         | 7.0                       | 7.78                          | 9.51 | 10           | 13.3                             | 225.6              | 200                                | PDL          | HDL |
| SMLJ7.0A        | 7.0                       | 7.78                          | 8.60 | 10           | 12.0                             | 250.0              | 200                                | PDM          | HDM |
| SMLJ7.5         | 7.5                       | 8.33                          | 10.2 | 1            | 14.3                             | 209.8              | 100                                | PDN          | HDN |
| SMLJ7.5A        | 7.5                       | 8.33                          | 9.21 | 1            | 12.9                             | 232.6              | 100                                | PDP          | HDP |
| SMLJ8.0         | 8.0                       | 8.89                          | 10.9 | 1            | 15.0                             | 200.0              | 50                                 | PDQ          | HDQ |
| SMLJ8.0A        | 8.0                       | 8.89                          | 9.83 | 1            | 13.6                             | 220.6              | 50                                 | PDR          | HDR |
| SMLJ8.5         | 8.5                       | 9.44                          | 11.5 | 1            | 15.9                             | 188.6              | 25                                 | PDS          | HDS |
| SMLJ8.5A        | 8.5                       | 9.44                          | 10.4 | 1            | 14.4                             | 208.4              | 25                                 | PDT          | HDT |
| SMLJ9.0         | 9.0                       | 10.0                          | 12.2 | 1            | 16.9                             | 177.4              | 10                                 | PDU          | HDU |
| SMLJ9.0A        | 9.0                       | 10.0                          | 11.1 | 1            | 15.4                             | 194.8              | 10                                 | PDV          | HDV |
| SMLJ10          | 10                        | 11.1                          | 13.6 | 1            | 18.8                             | 159.6              | 5                                  | PDW          | HDW |
| SMLJ10A         | 10                        | 11.1                          | 12.3 | 1            | 17.0                             | 176.4              | 5                                  | PDX          | HDX |
| SMLJ11          | 11                        | 12.2                          | 14.9 | 1            | 20.1                             | 149.2              | 5                                  | PDY          | HDY |
| SMLJ11A         | 11                        | 12.2                          | 13.5 | 1            | 18.2                             | 164.8              | 5                                  | PDZ          | HDZ |
| SMLJ12          | 12                        | 13.3                          | 16.3 | 1            | 22.0                             | 136.4              | 5                                  | PED          | HED |
| SMLJ12A         | 12                        | 13.3                          | 14.7 | 1            | 19.9                             | 150.6              | 5                                  | PEE          | HEE |
| SMLJ13          | 13                        | 14.4                          | 17.6 | 1            | 23.8                             | 126.0              | 5                                  | PEF          | HEF |
| SMLJ13A         | 13                        | 14.4                          | 15.9 | 1            | 21.5                             | 139.4              | 5                                  | PEG          | HEG |
| SMLJ14          | 14                        | 15.6                          | 19.1 | 1            | 25.8                             | 116.2              | 5                                  | PEH          | HEH |
| SMLJ14A         | 14                        | 15.6                          | 17.2 | 1            | 23.2                             | 129.4              | 5                                  | PEK          | HEK |
| SMLJ15          | 15                        | 16.7                          | 20.4 | 1            | 26.9                             | 111.6              | 5                                  | PEL          | HEL |
| SMLJ15A         | 15                        | 16.7                          | 18.5 | 1            | 24.4                             | 123.0              | 5                                  | PEM          | HEM |
| SMLJ16          | 16                        | 17.8                          | 21.8 | 1            | 28.8                             | 104.2              | 5                                  | PEN          | HEN |
| SMLJ16A         | 16                        | 17.8                          | 19.7 | 1            | 26.0                             | 115.4              | 5                                  | PEP          | HEP |
| SMLJ17          | 17                        | 18.9                          | 23.1 | 1            | 30.5                             | 98.4               | 5                                  | PEQ          | HEQ |
| SMLJ17A         | 17                        | 18.9                          | 20.9 | 1            | 27.6                             | 106.6              | 5                                  | PER          | HER |
| SMLJ18          | 18                        | 20.0                          | 24.4 | 1            | 32.2                             | 93.2               | 5                                  | PES          | HES |
| SMLJ18A         | 18                        | 20.0                          | 22.1 | 1            | 29.2                             | 102.8              | 5                                  | PET          | HET |
| SMLJ20          | 20                        | 22.2                          | 27.1 | 1            | 35.8                             | 83.8               | 5                                  | PEU          | HEU |
| SMLJ20A         | 20                        | 22.2                          | 24.5 | 1            | 32.4                             | 92.6               | 5                                  | PEV          | HEV |

For parts without A, the VBR is +10%.

Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC Part Number | Reverse Stand-Off Voltage | Breakdown Voltage $V_{BR}(V)$ |      | Test Current | Max. Clamping Voltage @ $I_{PP}$ | Peak Pulse Current | Reverse Leakage Current@ $V_{WM}$ | Marking Code |     |
|-----------------|---------------------------|-------------------------------|------|--------------|----------------------------------|--------------------|-----------------------------------|--------------|-----|
|                 | $V_{WM}(V)$               | Min                           | Max  | $I_T(mA)$    | $V_C(V)$                         | $I_{PP}(A)$        | $I_D(\mu A)$                      |              |     |
| SMLJ22          | 22                        | 24.4                          | 29.8 | 1            | 39.4                             | 76.2               | 5                                 | PEW          | HEW |
| SMLJ22A         | 22                        | 24.4                          | 26.9 | 1            | 35.5                             | 84.4               | 5                                 | PEX          | HEX |
| SMLJ24          | 24                        | 26.7                          | 32.6 | 1            | 43.0                             | 69.8               | 5                                 | PEY          | HEY |
| SMLJ24A         | 24                        | 26.7                          | 29.5 | 1            | 38.9                             | 77.2               | 5                                 | PEZ          | HEZ |
| SMLJ26          | 26                        | 28.9                          | 35.3 | 1            | 46.6                             | 64.4               | 5                                 | PFD          | HFD |
| SMLJ26A         | 26                        | 28.9                          | 31.9 | 1            | 42.1                             | 71.2               | 5                                 | PFE          | HFE |
| SMLJ28          | 28                        | 31.1                          | 38.0 | 1            | 50.0                             | 60.0               | 5                                 | PFF          | HFF |
| SMLJ28A         | 28                        | 31.1                          | 34.4 | 1            | 45.4                             | 66.0               | 5                                 | PFG          | HFG |
| SMLJ30          | 30                        | 33.3                          | 40.7 | 1            | 53.5                             | 56.0               | 5                                 | PFH          | HFH |
| SMLJ30A         | 30                        | 33.3                          | 36.8 | 1            | 48.4                             | 62.0               | 5                                 | PFK          | HFK |
| SMLJ33          | 33                        | 36.7                          | 44.9 | 1            | 59.0                             | 50.4               | 5                                 | PFL          | HFL |
| SMLJ33A         | 33                        | 36.7                          | 40.6 | 1            | 53.3                             | 56.2               | 5                                 | PFM          | HFM |
| SMLJ36          | 36                        | 40.0                          | 48.9 | 1            | 64.3                             | 46.6               | 5                                 | PFN          | HFN |
| SMLJ36A         | 36                        | 40.0                          | 44.2 | 1            | 58.1                             | 51.6               | 5                                 | PFP          | HFP |
| SMLJ40          | 40                        | 44.4                          | 54.3 | 1            | 71.4                             | 42.0               | 5                                 | PFQ          | HFQ |
| SMLJ40A         | 40                        | 44.4                          | 49.1 | 1            | 64.5                             | 46.4               | 5                                 | PFR          | HFR |
| SMLJ43          | 43                        | 47.8                          | 58.4 | 1            | 76.7                             | 39.2               | 5                                 | PFS          | HFS |
| SMLJ43A         | 43                        | 47.8                          | 52.8 | 1            | 69.4                             | 43.2               | 5                                 | PFT          | HFT |
| SMLJ45          | 45                        | 50.0                          | 61.1 | 1            | 80.3                             | 37.4               | 5                                 | PFU          | HFU |
| SMLJ45A         | 45                        | 50.0                          | 55.3 | 1            | 72.7                             | 41.2               | 5                                 | PFV          | HFV |
| SMLJ48          | 48                        | 53.3                          | 65.1 | 1            | 85.5                             | 35.0               | 5                                 | PFW          | HFW |
| SMLJ48A         | 48                        | 53.3                          | 58.9 | 1            | 77.4                             | 38.8               | 5                                 | PFX          | HFX |
| SMLJ51          | 51                        | 56.7                          | 69.3 | 1            | 91.1                             | 37.0               | 5                                 | PFY          | HFY |
| SMLJ51A         | 51                        | 56.7                          | 62.7 | 1            | 82.4                             | 36.4               | 5                                 | PFZ          | HFZ |
| SMLJ54          | 54                        | 60.0                          | 73.3 | 1            | 96.3                             | 31.2               | 5                                 | RGD          | HGD |
| SMLJ54A         | 54                        | 60.0                          | 66.3 | 1            | 87.1                             | 34.4               | 5                                 | RGE          | HGE |
| SMLJ58          | 58                        | 64.4                          | 78.7 | 1            | 103                              | 39.2               | 5                                 | PGF          | HGF |
| SMLJ58A         | 58                        | 64.4                          | 71.2 | 1            | 93.6                             | 32.0               | 5                                 | PGG          | HGG |
| SMLJ60          | 60                        | 66.7                          | 81.5 | 1            | 107                              | 28.0               | 5                                 | PGH          | HGH |
| SMLJ60A         | 60                        | 66.7                          | 73.7 | 1            | 96.8                             | 31.0               | 5                                 | PGK          | HGK |
| SMLJ64          | 64                        | 71.1                          | 86.9 | 1            | 114                              | 26.4               | 5                                 | PGL          | HGL |
| SMLJ64A         | 64                        | 71.1                          | 78.6 | 1            | 103                              | 29.2               | 5                                 | PGM          | HGM |
| SMLJ70          | 70                        | 77.8                          | 95.1 | 1            | 125                              | 24.0               | 5                                 | PGN          | HGN |
| SMLJ70A         | 70                        | 77.8                          | 86.0 | 1            | 113                              | 26.6               | 5                                 | PGP          | HGP |
| SMLJ75          | 75                        | 83.3                          | 102  | 1            | 134                              | 22.4               | 5                                 | PGQ          | HGQ |
| SMLJ75A         | 75                        | 83.3                          | 92.1 | 1            | 121                              | 24.8               | 5                                 | PGR          | HGR |
| SMLJ78          | 78                        | 86.7                          | 106  | 1            | 139                              | 21.6               | 5                                 | PGS          | HGS |
| SMLJ78A         | 78                        | 86.7                          | 95.8 | 1            | 126                              | 22.8               | 5                                 | PGT          | HGT |
| SMLJ85          | 85                        | 94.4                          | 115  | 1            | 151                              | 19.8               | 5                                 | PGU          | HGU |
| SMLJ85A         | 85                        | 94.4                          | 104  | 1            | 137                              | 20.8               | 5                                 | PGV          | HGV |
| SMLJ90          | 90                        | 100                           | 122  | 1            | 160                              | 18.8               | 5                                 | PGW          | HGW |
| SMLJ90A         | 90                        | 100                           | 111  | 1            | 146                              | 20.6               | 5                                 | PGX          | HGX |
| SMLJ100         | 100                       | 111                           | 136  | 1            | 179                              | 16.8               | 5                                 | PGY          | HGY |
| SMLJ100A        | 100                       | 111                           | 123  | 1            | 162                              | 18.6               | 5                                 | PGZ          | HGZ |
| SMLJ110         | 110                       | 122                           | 149  | 1            | 196                              | 15.4               | 5                                 | PHD          | HHD |
| SMLJ110A        | 110                       | 122                           | 135  | 1            | 177                              | 16.8               | 5                                 | PHE          | HHE |

For parts without A, the VBR is +10%.

## Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC<br>Part Number | Reverse<br>Stand-Off<br>Voltage | Breakdown Voltage<br>$V_{BR}(V)$ |     | Test<br>Current | Max.<br>Clamping Voltage<br>@ $I_{PP}$ | Peak<br>Pulse<br>Current | Reverse Leakage<br>Current@ $V_{WM}$ | Marking Code |     |
|--------------------|---------------------------------|----------------------------------|-----|-----------------|--|--------------------------|--------------------------------------|--------------|-----|
|                    | $V_{WM}(V)$                     | Min                              | Max | $I_T(mA)$       | $V_C(V)$                               | $I_{PP}(A)$              | $I_D(\mu A)$                         |              |     |
| SMLJ120            | 120                             | 133                              | 163 | 1               | 214                                    | 14.0                     | 5                                    | PHF          | HHF |
| SMLJ120A           | 120                             | 133                              | 147 | 1               | 193                                    | 15.6                     | 5                                    | PHG          | HHG |
| SMLJ130            | 130                             | 144                              | 176 | 1               | 231                                    | 13.0                     | 5                                    | PHH          | HHH |
| SMLJ130A           | 130                             | 144                              | 159 | 1               | 209                                    | 14.4                     | 5                                    | PHK          | HHK |
| SMLJ150            | 150                             | 167                              | 204 | 1               | 268                                    | 11.2                     | 5                                    | PHL          | HHL |
| SMLJ150A           | 150                             | 167                              | 185 | 1               | 243                                    | 12.4                     | 5                                    | PHM          | HHM |
| SMLJ160            | 160                             | 178                              | 218 | 1               | 287                                    | 10.4                     | 5                                    | PHN          | HHN |
| SMLJ160A           | 160                             | 178                              | 197 | 1               | 259                                    | 11.6                     | 5                                    | PHP          | HHP |
| SMLJ170            | 170                             | 189                              | 231 | 1               | 304                                    | 9.8                      | 5                                    | PHQ          | HHQ |
| SMLJ170A           | 170                             | 189                              | 209 | 1               | 275                                    | 11.0                     | 5                                    | PHR          | HHR |
| SMLJ180A           | 180                             | 200                              | 220 | 5               | 291.6                                  | 10.29                    | 2                                    | PHT          |     |
| SMLJ190A           | 190                             | 211                              | 232 | 5               | 307.8                                  | 9.75                     | 2                                    | PHV          |     |
| SMLJ200A           | 200                             | 224                              | 247 | 5               | 324                                    | 9.26                     | 2                                    | PHW          |     |
| SMLJ220A           | 220                             | 246                              | 272 | 5               | 356                                    | 8.43                     | 2                                    | PHX          |     |
| SMLJ250A           | 250                             | 279                              | 309 | 5               | 405                                    | 7.41                     | 2                                    | PHZ          |     |
| SMLJ300A           | 300                             | 335                              | 371 | 5               | 486                                    | 6.17                     | 2                                    | PJE          |     |
| SMLJ350A           | 350                             | 391                              | 432 | 5               | 567                                    | 5.29                     | 2                                    | PJG          |     |
| SMLJ400A           | 400                             | 447                              | 494 | 5               | 648                                    | 4.63                     | 2                                    | PJK          |     |
| SMLJ440A           | 440                             | 492                              | 543 | 5               | 713                                    | 4.21                     | 2                                    | PJM          |     |

For parts without A, the VBR is +10%.

**Curve Characteristics**

Fig. 1 - Peak Pulse Power Rating Curve



Fig. 2 - Typical Junction Capacitance



Fig. 3 - Pulse Waveform



Fig. 4 - Pulse Derating Curve



## Ordering Information

| Device         | Packing              |
|----------------|----------------------|
| Part Number-TP | Tape&Reel:3Kpcs/Reel |

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

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