

# SMLJ5.0 THRU SMLJ170CA

## Features

- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- For surface mount application in order to optimize board space
- Built-in strain relief
- Glass passivated junction
- Excellent clamping capability
- Repetition Rate( duty cycle): 0.5%
- Fast response time: typical less than 1ps from 0V to BV min
- Typical  $I_D$  less than 1uA above 10V
- High temperature soldering: 260°C/10 seconds at terminals
- UL Recognized File #E 331408
- Halogen free available upon request by adding suffix "-HF"

## Mechanical Data

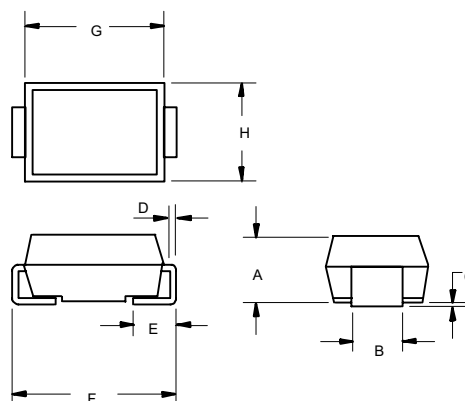
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Terminals: solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes positive end( cathode) except Bi-directional types.
- Standard packaging: 16mm tape per ( EIA 481).
- Weight: 0.007 ounce, 0.21 gram

### Maximum Ratings @ 25°C Unless Otherwise Specified

|                                                                   |                          |                 |       |
|-------------------------------------------------------------------|--------------------------|-----------------|-------|
| Peak Pulse Current on 10/1000us waveform(Note2, Fig3)             | $I_{PPM}$                | See Table 1     | Amps  |
| Peak Pulse Power Dissipation on 10/1000us waveform(Note2,3, Fig1) | $P_{PPM}$                | Minimum 3000    | Watts |
| Operation And Storage Temperature Range                           | $T_J$ ,<br>$T_{STG}$     | -55°C to +175°C |       |
| Thermal Resistance Junction to Ambient&Lead                       | $R_{thJA}$<br>$R_{thJL}$ | 75<br>17.5      | °C/W  |

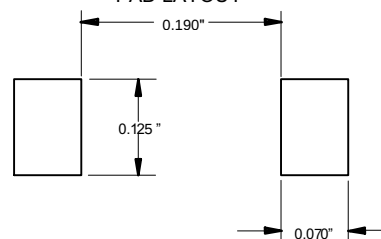
## Transient Voltage Suppressor 5.0 to 170 Volts 3000 Watt

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



| DIM | INCHES |       | MM    |       | NOTE |
|-----|--------|-------|-------|-------|------|
|     | MIN    | MAX   | MIN   | MAX   |      |
| A   | .079   | .103  | 2.00  | 2.62  |      |
| B   | .115   | .121  | 2.92  | 3.07  |      |
| C   | .002   | .008  | 0.051 | 0.203 |      |
| D   | .006   | .012  | 0.152 | 0.305 |      |
| E   | .030   | 0.060 | 0.76  | 1.52  |      |
| F   | .305   | .320  | 7.75  | 8.13  |      |
| G   | .260   | .280  | 6.60  | 7.11  |      |
| H   | .220   | .245  | 5.59  | 6.22  |      |

### SUGGESTED SOLDER PAD LAYOUT



NOTES: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.  
2. Non-repetitive current pulse per Fig.3 and derated above  $T_A=25^\circ\text{C}$  per Fig.2.  
3. Mounted on 8.0mm<sup>2</sup> copper pads to each terminal.

# SMLJ5.0 thru SMLJ170CA

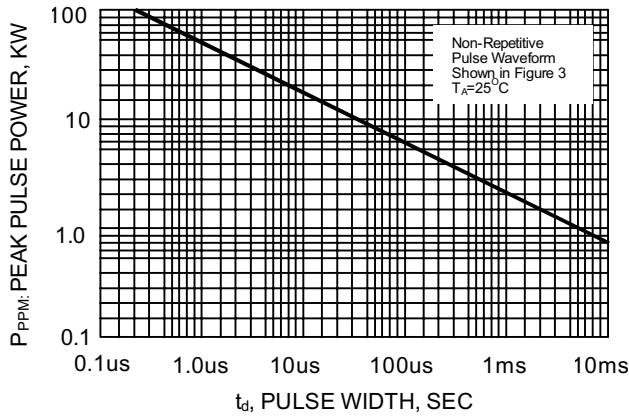


Fig. 1-PEAL PULSE POWER VS PULSE.TIME

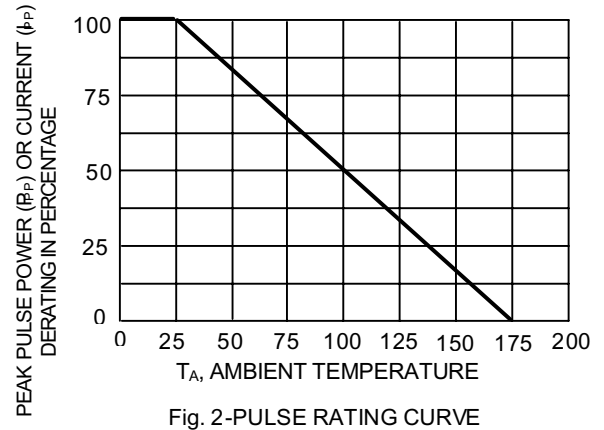


Fig. 2-PULSE RATING CURVE

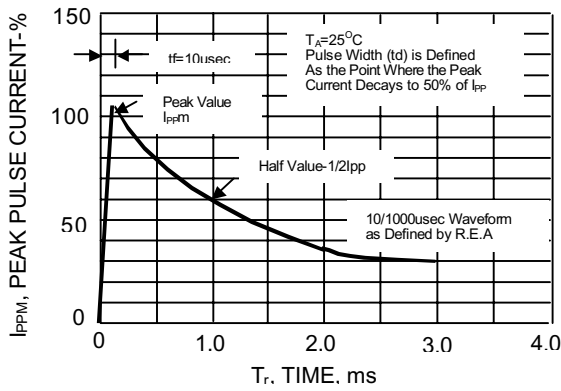


Fig. 3-PULSE WAVEFORM

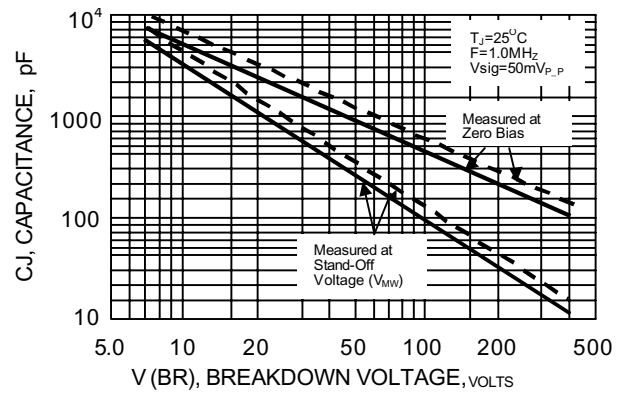


Fig. 4-TYPICAL CAPACITANCE VS STAND-OFF VOLTAGE

# SMLJ5.0 THRU SMLJ170CA



Micro Commercial Components

## ELECTRICAL CHARACTERISTICS @25°C

| MCC<br>PART<br>NUMBER | REVERSE<br>STAND-OFF<br>VOLTAGE<br>$V_{WM}$<br>(VOLTS) | BREAKDOWN VOLTAGE<br>$V_{(BR)}$ @ $I_T$<br>(VOLTS) |      |            | MAXIMUM<br>CLAMPING<br>VOLTAGE @<br>$I_{PP}$<br>(VOLTS) | PEAK PULSE<br>CURRENT<br>$I_{PP}$<br>(AMPS) | MAXIMUM<br>REVERSE<br>LEAKAGE<br>@ $V_{WM}$<br>$I_D$<br>( $\mu A$ ) | MARKING CODE |     |
|-----------------------|--------------------------------------------------------|----------------------------------------------------|------|------------|---------------------------------------------------------|---------------------------------------------|---------------------------------------------------------------------|--------------|-----|
|                       |                                                        | MIN                                                | MAX  | $I_T$ (mA) |                                                         |                                             |                                                                     | 1            | 2   |
| 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 |

# SMLJ5.0 THRU SMLJ170CA



Micro Commercial Components

## ELECTRICAL CHARACTERISTICS @25°C

| MCC<br>PART NUMBER | REVERSE<br>STAND-OFF<br>VOLTAGE<br>$V_{WM}$ | BREAKDOWN VOLTAGE<br>$V_{(BR)} @ I_T$<br>(VOLTS) |      |            | MAXIMUM<br>CLAMPING<br>VOLTAGE @ $I_{PP}$ | PEAK PULSE<br>CURRENT<br>$I_{PP}$ | MAXIMUM<br>REVERSE<br>LEAKAGE<br>@ $V_{WM}$<br>$I_D$ | MARKING CODE |     |
|--------------------|---------------------------------------------|--------------------------------------------------|------|------------|-------------------------------------------|-----------------------------------|------------------------------------------------------|--------------|-----|
|                    | (VOLTS)                                     | MIN                                              | MAX  | $I_T$ (mA) | (VOLTS)                                   | (AMPS)                            | ( $\mu A$ )                                          | 1            | 2   |
| SMLJ22C            | 22                                          | 24.4                                             | 29.8 | 1          | 39.4                                      | 76.2                              | 5                                                    | IEW          | DEW |
| SMLJ22CA           | 22                                          | 24.4                                             | 26.9 | 1          | 35.5                                      | 84.4                              | 5                                                    | IEX          | DEX |
| SMLJ24C            | 24                                          | 26.7                                             | 32.6 | 1          | 43.0                                      | 69.8                              | 5                                                    | IEY          | DEY |
| SMLJ24CA           | 24                                          | 26.7                                             | 29.5 | 1          | 38.9                                      | 77.2                              | 5                                                    | IEZ          | DEZ |
| SMLJ26C            | 26                                          | 28.9                                             | 35.3 | 1          | 46.6                                      | 64.4                              | 5                                                    | IFD          | DFD |
| SMLJ26CA           | 26                                          | 28.9                                             | 31.9 | 1          | 42.1                                      | 71.2                              | 5                                                    | IFE          | DFE |
| SMLJ28C            | 28                                          | 31.1                                             | 38.0 | 1          | 50.0                                      | 60.0                              | 5                                                    | IFF          | DFF |
| SMLJ28CA           | 28                                          | 31.1                                             | 34.4 | 1          | 45.4                                      | 66.0                              | 5                                                    | IFG          | DFG |
| SMLJ30C            | 30                                          | 33.3                                             | 40.7 | 1          | 53.5                                      | 56.0                              | 5                                                    | IFH          | DFH |
| SMLJ30CA           | 30                                          | 33.3                                             | 36.8 | 1          | 48.4                                      | 62.0                              | 5                                                    | IFK          | DFK |
| SMLJ33C            | 33                                          | 36.7                                             | 44.9 | 1          | 59.0                                      | 50.4                              | 5                                                    | IFL          | DFL |
| SMLJ33CA           | 33                                          | 36.7                                             | 40.6 | 1          | 53.3                                      | 56.2                              | 5                                                    | IFM          | DFM |
| SMLJ36C            | 36                                          | 40.0                                             | 48.9 | 1          | 64.3                                      | 46.6                              | 5                                                    | IFN          | DFN |
| SMLJ36CA           | 36                                          | 40.0                                             | 44.2 | 1          | 58.1                                      | 51.6                              | 5                                                    | IFP          | DFP |
| SMLJ40C            | 40                                          | 44.4                                             | 54.3 | 1          | 71.4                                      | 42.0                              | 5                                                    | IFQ          | DFQ |
| SMLJ40CA           | 40                                          | 44.4                                             | 49.1 | 1          | 64.5                                      | 46.4                              | 5                                                    | IFR          | DFR |
| SMLJ43C            | 43                                          | 47.8                                             | 58.4 | 1          | 76.7                                      | 39.2                              | 5                                                    | IFS          | DFS |
| SMLJ43CA           | 43                                          | 47.8                                             | 52.8 | 1          | 69.4                                      | 43.2                              | 5                                                    | IFT          | DFT |
| SMLJ45C            | 45                                          | 50.0                                             | 61.1 | 1          | 80.3                                      | 37.4                              | 5                                                    | IFU          | DFU |
| SMLJ45CA           | 45                                          | 50.0                                             | 55.3 | 1          | 72.7                                      | 41.2                              | 5                                                    | IFV          | DFV |
| SMLJ48C            | 48                                          | 53.3                                             | 65.1 | 1          | 85.5                                      | 35.0                              | 5                                                    | IFW          | DFW |
| SMLJ48CA           | 48                                          | 53.3                                             | 58.9 | 1          | 77.4                                      | 38.8                              | 5                                                    | IFX          | DFX |
| SMLJ51C            | 51                                          | 56.7                                             | 69.3 | 1          | 91.1                                      | 37.0                              | 5                                                    | IFY          | DFY |
| SMLJ51CA           | 51                                          | 56.7                                             | 62.7 | 1          | 82.4                                      | 36.4                              | 5                                                    | IFZ          | DFZ |
| SMLJ54C            | 54                                          | 60.0                                             | 73.3 | 1          | 96.3                                      | 31.2                              | 5                                                    | IGD          | DGD |
| SMLJ54CA           | 54                                          | 60.0                                             | 66.3 | 1          | 87.1                                      | 34.4                              | 5                                                    | IGE          | DGE |
| SMLJ58C            | 58                                          | 64.4                                             | 78.7 | 1          | 103                                       | 39.2                              | 5                                                    | IGF          | DGF |
| SMLJ58CA           | 58                                          | 64.4                                             | 71.2 | 1          | 93.6                                      | 32.0                              | 5                                                    | IGG          | DGG |
| SMLJ60C            | 60                                          | 66.7                                             | 81.5 | 1          | 107                                       | 28.0                              | 5                                                    | IGH          | DGH |
| SMLJ60CA           | 60                                          | 66.7                                             | 73.7 | 1          | 96.8                                      | 31.0                              | 5                                                    | IGK          | DGK |
| SMLJ64C            | 64                                          | 71.1                                             | 86.9 | 1          | 114                                       | 26.4                              | 5                                                    | IGL          | DGL |
| SMLJ64CA           | 64                                          | 71.1                                             | 78.6 | 1          | 103                                       | 29.2                              | 5                                                    | IGM          | DGM |
| SMLJ70C            | 70                                          | 77.8                                             | 95.1 | 1          | 125                                       | 24.0                              | 5                                                    | IGN          | DGN |
| SMLJ70CA           | 70                                          | 77.8                                             | 86.0 | 1          | 113                                       | 26.6                              | 5                                                    | IGP          | DGP |
| SMLJ75C            | 75                                          | 83.3                                             | 102  | 1          | 134                                       | 22.4                              | 5                                                    | IGQ          | DGQ |
| SMLJ75CA           | 75                                          | 83.3                                             | 92.1 | 1          | 121                                       | 24.8                              | 5                                                    | IGR          | DGR |
| SMLJ78C            | 78                                          | 86.7                                             | 106  | 1          | 139                                       | 21.6                              | 5                                                    | IGS          | DGS |
| SMLJ78CA           | 78                                          | 86.7                                             | 95.8 | 1          | 126                                       | 22.8                              | 5                                                    | IGT          | DGT |
| SMLJ85C            | 85                                          | 94.4                                             | 115  | 1          | 151                                       | 19.8                              | 5                                                    | IGU          | DGU |
| SMLJ85CA           | 85                                          | 94.4                                             | 104  | 1          | 137                                       | 20.8                              | 5                                                    | IGV          | DGV |
| SMLJ90C            | 90                                          | 100                                              | 122  | 1          | 160                                       | 18.8                              | 5                                                    | IGW          | DGW |
| SMLJ90CA           | 90                                          | 100                                              | 111  | 1          | 146                                       | 20.6                              | 5                                                    | IGX          | DGX |
| SMLJ100C           | 100                                         | 111                                              | 136  | 1          | 179                                       | 16.8                              | 5                                                    | IGY          | DGY |
| SMLJ100CA          | 100                                         | 111                                              | 123  | 1          | 162                                       | 18.6                              | 5                                                    | IGZ          | DGZ |
| SMLJ110C           | 110                                         | 122                                              | 149  | 1          | 196                                       | 15.4                              | 5                                                    | IHD          | DHD |
| SMLJ110CA          | 110                                         | 122                                              | 135  | 1          | 177                                       | 16.8                              | 5                                                    | IHE          | DHE |
| SMLJ120C           | 120                                         | 133                                              | 163  | 1          | 214                                       | 14.0                              | 5                                                    | IHF          | DHF |
| SMLJ120CA          | 120                                         | 133                                              | 147  | 1          | 193                                       | 15.6                              | 5                                                    | IHG          | DHG |
| SMLJ130C           | 130                                         | 144                                              | 176  | 1          | 231                                       | 13.0                              | 5                                                    | IHH          | DHH |
| SMLJ130CA          | 130                                         | 144                                              | 159  | 1          | 209                                       | 14.4                              | 5                                                    | IHK          | DHK |
| SMLJ150C           | 150                                         | 167                                              | 204  | 1          | 268                                       | 11.2                              | 5                                                    | IHL          | DHL |
| SMLJ150CA          | 150                                         | 167                                              | 185  | 1          | 243                                       | 12.4                              | 5                                                    | IHM          | DHM |
| SMLJ160C           | 160                                         | 178                                              | 218  | 1          | 287                                       | 10.4                              | 5                                                    | IHN          | DHN |
| SMLJ160CA          | 160                                         | 178                                              | 197  | 1          | 259                                       | 11.6                              | 5                                                    | IHP          | DHP |
| SMLJ170C           | 170                                         | 189                                              | 231  | 1          | 304                                       | 9.8                               | 5                                                    | IHQ          | DHQ |
| SMLJ170CA          | 170                                         | 189                                              | 209  | 1          | 275                                       | 11.0                              | 5                                                    | IHR          | DHR |

# SMLJ5.0 THRU SMLJ170CA

## ELECTRICAL CHARACTERISTICS @25°C

| MCC<br>PART<br>NUMBER | REVERSE<br>STAND-OFF<br>VOLTAGE<br>$V_{WM}$ | BREAKDOWN VOLTAGE<br>$V_{(BR)} @ I_T$<br>(VOLTS) |      |            | MAXIMUM<br>CLAMPING<br>VOLTAGE @<br>$I_{PP}$ | PEAK PULSE<br>CURRENT<br>$I_{PP}$ | MAXIMUM<br>REVERSE<br>LEAKAGE<br>@ $V_{WM}$<br>$I_D$ | MARKING CODE |     |
|-----------------------|---------------------------------------------|--------------------------------------------------|------|------------|----------------------------------------------|-----------------------------------|------------------------------------------------------|--------------|-----|
|                       | (VOLTS)                                     | MIN                                              | MAX  | $I_T$ (mA) | (VOLTS)                                      | (AMPS)                            | ( $\mu A$ )                                          | 1            | 2   |
| 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 |

# SMLJ5.0 THRU SMLJ170CA



Micro Commercial Components

## ELECTRICAL CHARACTERISTICS @25°C

| MCC<br>PART<br>NUMBER | REVERSE<br>STAND-OFF<br>VOLTAGE<br>$V_{WM}$<br>(VOLTS) | BREAKDOWN VOLTAGE<br>$V_{(BR)} @ I_T$<br>(VOLTS) |      |            | MAXIMUM<br>CLAMPING<br>VOLTAGE @ $I_{PP}$<br>(VOLTS) | PEAK PULSE<br>CURRENT<br>$I_{PP}$<br>(AMPS) | MAXIMUM<br>REVERSE<br>LEAKAGE<br>@ $V_{WM}$<br>$I_D$<br>( $\mu A$ ) | MARKING CODE |     |
|-----------------------|--------------------------------------------------------|--------------------------------------------------|------|------------|------------------------------------------------------|---------------------------------------------|---------------------------------------------------------------------|--------------|-----|
|                       |                                                        | MIN                                              | MAX  | $I_T$ (mA) |                                                      |                                             |                                                                     | 1            | 2   |
| 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          | HFV |
| 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 |
| 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 |



## Ordering Information :

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

### \*\*\*IMPORTANT NOTICE\*\*\*

**Micro Commercial Components Corp.** reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . **Micro Commercial Components Corp .** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp .** and all the companies whose products are represented on our website, harmless against all damages.

### \*\*\*LIFE SUPPORT\*\*\*

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

### \*\*\*CUSTOMER AWARENESS\*\*\*

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.