

# SMDJ Series

ROHS

## 5.0 To 440V 3000W

## Surface Mount Transient Voltage Suppressors (TVS)

### Description

The SMDJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events

### Features

- ◆ For surface mounted applications in order to optimize board space
- ◆ Low leakage
- ◆ Uni and Bidirectional unit
- ◆ Glass passivated junction
- ◆ Low inductance
- ◆ Excellent clamping capability
- ◆ Typical  $I_R$  less than  $5\mu A$  above 9V
- ◆ 3000W Peak power capability at  $10 \times 1000\mu s$  waveform Repetition rate (duty cycle):0.01%
- ◆ Fast response time: typically less than 1.0ps from 0 Volts to  $V_{BR}$  min
- ◆ High Temperature soldering:  $260^\circ C/40$  seconds at terminals
- ◆ Typical maximum temperature coefficient  $\Delta V_{BR} = 0.1\% \times V_{BR}@25^\circ C \times \Delta T$
- ◆ Plastic package has Underwriters Laboratory Flammability 94V-0
- ◆ Matte tin lead-free Plated
- ◆ Halogen free and RoHS compliant
- ◆ Typical failure mode is short from over-specified voltage or current
- ◆ Whisker test is conducted based on JEDEC JESD201A per its table 4a and 4c
- ◆ IEC-61000-4-2 ESD 30kV(Air), 30kV (Contact)
- ◆ ESD protection of data lines in accordance with IEC 61000-4-2
- ◆ EFT protection of data lines in accordance with IEC 61000-4-4

### Applications

TVS devices are ideal for the protection of I/O interfaces,  $V_{CC}$  bus and other vulnerable circuits used in Telecom, Computer, Industrial and Consumer electronic applications.

### Maximum Ratings ( $T_A=25^\circ C$ unless otherwise noted)

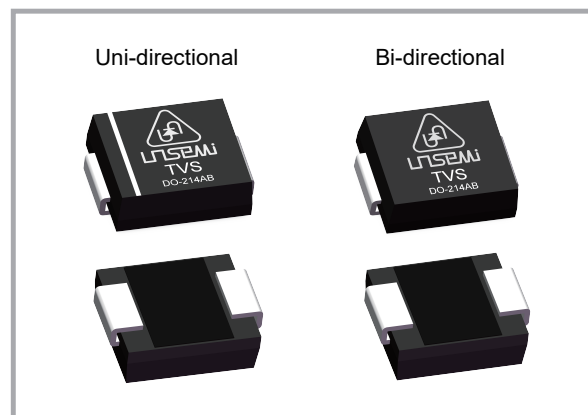
| Parameter                                                                              | Symbol         | Value          | Unit       |
|----------------------------------------------------------------------------------------|----------------|----------------|------------|
| Peak Pulse Power Dissipation with a 10/1000 $\mu s$ waveform (Fig.1)(Note 1), (Note 2) | PPPM           | 3000           | W          |
| Peak Pulse Current with a 10/1000 $\mu s$ waveform.(Note1, Fig.3)                      | IPP            | See Next Table | A          |
| Power Dissipation on Infinite Heat Sink at $T_L=75^\circ C$                            | PM(AV)         | 6.0            | W          |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)                       | IFSM           | 300            | A          |
| Maximum Instantaneous Forward Voltage at 25A for Unidirectional Only (Note 4)          | $V_F$          | 3.5/5.0        | V          |
| Junction and Storage Temperature Range                                                 | $T_J, T_{STG}$ | -55 to +150    | $^\circ C$ |
| Operating Temperature Range                                                            | $T_{OP}$       | -40 to +125    | $^\circ C$ |

#### Notes:

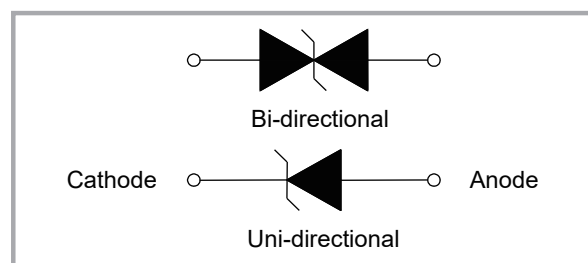
1. Non-repetitive current pulse, per Fig. 3 and derated above  $T_A=25^\circ C$  per Fig. 2.
2. Mounted on 5.0mm x 5.0mm (0.03mm thick) Copper Pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.
4.  $V_F < 3.5V$  for  $V_{BR} < 200V$  and  $V_F < 6.5V$  for  $V_{BR} > 201V$ .



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### Functional Diagram



Electrical Characteristics (TA=25°C unless otherwise noted)

| Part Number |           | Marking |     | Reverse Stand-Off Voltage VRWM (V) | Breakdown Voltage VBR (V) @IT |       | Test Current IT (mA) | Maximum Clamping Voltage Vc @IPP (V) | Maximum Peak Pulse Current IPP (A) | Maximum Reverse Leakage IR @VRWM (μA) |
|-------------|-----------|---------|-----|------------------------------------|-------------------------------|-------|----------------------|--------------------------------------|------------------------------------|---------------------------------------|
| Uni         | Bi        | Uni     | Bi  |                                    | MIN                           | MAX   |                      |                                      |                                    |                                       |
| SMDJ5.0     | SMDJ5.0C  | RDD     | DDD | 5.0                                | 6.40                          | 7.30  | 10                   | 9.6                                  | 312.50                             | 1000                                  |
| SMDJ5.0A    | SMDJ5.0CA | RDE     | DDE | 5.0                                | 6.40                          | 7.00  | 10                   | 9.2                                  | 326.09                             | 1000                                  |
| SMDJ6.0     | SMDJ6.0C  | RDF     | DDF | 6.0                                | 6.67                          | 8.15  | 10                   | 11.4                                 | 263.16                             | 1000                                  |
| SMDJ6.0A    | SMDJ6.0CA | RDG     | DDG | 6.0                                | 6.67                          | 7.37  | 10                   | 10.3                                 | 291.26                             | 1000                                  |
| SMDJ6.5     | SMDJ6.5C  | RDH     | DDH | 6.5                                | 7.22                          | 8.82  | 10                   | 12.3                                 | 243.90                             | 500                                   |
| SMDJ6.5A    | SMDJ6.5CA | RDK     | DDK | 6.5                                | 7.22                          | 7.98  | 10                   | 11.2                                 | 267.86                             | 500                                   |
| SMDJ7.0     | SMDJ7.0C  | RDL     | DDL | 7.0                                | 7.78                          | 9.51  | 10                   | 13.3                                 | 225.56                             | 200                                   |
| SMDJ7.0A    | SMDJ7.0CA | PDM     | DDM | 7.0                                | 7.78                          | 8.60  | 10                   | 12.0                                 | 250.00                             | 200                                   |
| SMDJ7.5     | SMDJ7.5C  | PDN     | DDN | 7.5                                | 8.33                          | 10.20 | 1                    | 14.3                                 | 209.79                             | 100                                   |
| SMDJ7.5A    | SMDJ7.5CA | PDP     | DDP | 7.5                                | 8.33                          | 9.21  | 1                    | 12.9                                 | 232.56                             | 100                                   |
| SMDJ8.0     | SMDJ8.0C  | PDQ     | DDQ | 8.0                                | 8.89                          | 10.90 | 1                    | 15.0                                 | 200.00                             | 50                                    |
| SMDJ8.0A    | SMDJ8.0CA | PDR     | DDR | 8.0                                | 8.89                          | 9.83  | 1                    | 13.6                                 | 220.59                             | 50                                    |
| SMDJ8.5     | SMDJ8.5C  | PDS     | DDS | 8.5                                | 9.44                          | 11.50 | 1                    | 15.9                                 | 188.68                             | 25                                    |
| SMDJ8.5A    | SMDJ8.5CA | PDT     | DDT | 8.5                                | 9.44                          | 10.40 | 1                    | 14.4                                 | 208.33                             | 25                                    |
| SMDJ9.0     | SMDJ9.0C  | PDU     | DDU | 9.0                                | 10.00                         | 12.20 | 1                    | 16.9                                 | 177.51                             | 10                                    |
| SMDJ9.0A    | SMDJ9.0CA | PDV     | DDV | 9.0                                | 10.00                         | 11.10 | 1                    | 15.4                                 | 194.81                             | 10                                    |
| SMDJ10      | SMDJ10C   | PDW     | DDW | 10.0                               | 11.10                         | 13.60 | 1                    | 18.8                                 | 159.57                             | 5                                     |
| SMDJ10A     | SMDJ10CA  | PDX     | DDX | 10.0                               | 11.10                         | 12.30 | 1                    | 17.0                                 | 176.47                             | 5                                     |
| SMDJ11      | SMDJ11C   | PDY     | DDY | 11.0                               | 12.20                         | 14.90 | 1                    | 20.1                                 | 149.25                             | 5                                     |
| SMDJ11A     | SMDJ11CA  | PDZ     | DDZ | 11.0                               | 12.20                         | 13.50 | 1                    | 18.2                                 | 164.84                             | 5                                     |
| SMDJ12      | SMDJ12C   | PED     | DED | 12.0                               | 13.30                         | 16.30 | 1                    | 22.0                                 | 136.36                             | 5                                     |
| SMDJ12A     | SMDJ12CA  | PEE     | DEE | 12.0                               | 13.30                         | 14.70 | 1                    | 19.9                                 | 150.75                             | 5                                     |
| SMDJ13      | SMDJ13C   | PEF     | DEF | 13.0                               | 14.40                         | 17.60 | 1                    | 23.8                                 | 126.05                             | 5                                     |
| SMDJ13A     | SMDJ13CA  | PEG     | DEG | 13.0                               | 14.40                         | 15.90 | 1                    | 21.5                                 | 139.53                             | 5                                     |
| SMDJ14      | SMDJ14C   | PEH     | DEH | 14.0                               | 15.60                         | 19.10 | 1                    | 25.8                                 | 116.28                             | 5                                     |
| SMDJ14A     | SMDJ14CA  | PEK     | DEK | 14.0                               | 15.60                         | 17.20 | 1                    | 23.2                                 | 129.31                             | 5                                     |
| SMDJ15      | SMDJ15C   | PEL     | DEL | 15.0                               | 16.70                         | 20.40 | 1                    | 26.9                                 | 111.52                             | 5                                     |
| SMDJ15A     | SMDJ15CA  | PEM     | DEM | 15.0                               | 16.70                         | 18.50 | 1                    | 24.4                                 | 122.95                             | 5                                     |
| SMDJ16      | SMDJ16C   | PEN     | DEN | 16.0                               | 17.80                         | 21.80 | 1                    | 28.8                                 | 104.17                             | 5                                     |
| SMDJ16A     | SMDJ16CA  | PEP     | DEP | 16.0                               | 17.80                         | 19.70 | 1                    | 26.0                                 | 115.38                             | 5                                     |
| SMDJ17      | SMDJ17C   | PEQ     | DEQ | 17.0                               | 18.90                         | 23.10 | 1                    | 30.5                                 | 98.36                              | 5                                     |
| SMDJ17A     | SMDJ17CA  | PER     | DER | 17.0                               | 18.90                         | 20.90 | 1                    | 27.6                                 | 108.70                             | 5                                     |
| SMDJ18      | SMDJ18C   | PES     | DES | 18.0                               | 20.00                         | 24.40 | 1                    | 32.2                                 | 93.17                              | 5                                     |
| SMDJ18A     | SMDJ18CA  | PET     | DET | 18.0                               | 20.00                         | 22.10 | 1                    | 29.2                                 | 102.74                             | 5                                     |
| SMDJ19      | SMDJ19C   | PEA     | DEA | 19.0                               | 21.10                         | 25.76 | 1                    | 34.0                                 | 88.21                              | 5                                     |
| SMDJ19A     | SMDJ19CA  | PEB     | DEB | 19.0                               | 21.10                         | 23.30 | 1                    | 30.8                                 | 97.47                              | 5                                     |
| SMDJ20      | SMDJ20C   | PEU     | DEU | 20.0                               | 22.20                         | 27.10 | 1                    | 35.8                                 | 83.80                              | 5                                     |
| SMDJ20A     | SMDJ20CA  | PEV     | DEV | 20.0                               | 22.20                         | 24.50 | 1                    | 32.4                                 | 92.59                              | 5                                     |
| SMDJ22      | SMDJ22C   | PEW     | DEW | 22.0                               | 24.40                         | 29.80 | 1                    | 39.4                                 | 76.14                              | 5                                     |
| SMDJ22A     | SMDJ22CA  | PEX     | DEX | 22.0                               | 24.40                         | 26.90 | 1                    | 35.5                                 | 84.51                              | 5                                     |
| SMDJ24      | SMDJ24C   | PEY     | DEY | 24.0                               | 26.70                         | 32.60 | 1                    | 43.0                                 | 69.77                              | 5                                     |
| SMDJ24A     | SMDJ24CA  | PEZ     | DEZ | 24.0                               | 26.70                         | 29.50 | 1                    | 38.9                                 | 77.12                              | 5                                     |
| SMDJ26      | SMDJ26C   | PFD     | DFD | 26.0                               | 28.90                         | 35.30 | 1                    | 46.6                                 | 64.38                              | 5                                     |
| SMDJ26A     | SMDJ26CA  | PFE     | DFE | 26.0                               | 28.90                         | 31.90 | 1                    | 42.1                                 | 71.26                              | 5                                     |
| SMDJ28      | SMDJ28C   | PFF     | DFE | 28.0                               | 31.10                         | 38.00 | 1                    | 50.0                                 | 60.00                              | 5                                     |
| SMDJ28A     | SMDJ28CA  | PFG     | DFG | 28.0                               | 31.10                         | 34.40 | 1                    | 45.4                                 | 66.08                              | 5                                     |
| SMDJ30      | SMDJ30C   | PFH     | DFH | 30.0                               | 33.30                         | 40.70 | 1                    | 53.5                                 | 56.07                              | 5                                     |
| SMDJ30A     | SMDJ30CA  | PFK     | DFK | 30.0                               | 33.30                         | 36.80 | 1                    | 48.4                                 | 61.98                              | 5                                     |
| SMDJ33      | SMDJ33C   | PFL     | DFL | 33.0                               | 36.70                         | 44.90 | 1                    | 59.0                                 | 50.85                              | 5                                     |
| SMDJ33A     | SMDJ33CA  | PFM     | DFM | 33.0                               | 36.70                         | 40.60 | 1                    | 53.3                                 | 56.29                              | 5                                     |
| SMDJ36      | SMDJ36C   | PFN     | DFN | 36.0                               | 40.00                         | 48.90 | 1                    | 64.3                                 | 46.66                              | 5                                     |
| SMDJ36A     | SMDJ36CA  | PFP     | DFP | 36.0                               | 40.00                         | 44.20 | 1                    | 58.1                                 | 51.64                              | 5                                     |
| SMDJ40      | SMDJ40C   | PFQ     | DFQ | 40.0                               | 44.40                         | 54.30 | 1                    | 71.4                                 | 42.02                              | 5                                     |
| SMDJ40A     | SMDJ40CA  | PFR     | DFR | 40.0                               | 44.40                         | 49.10 | 1                    | 64.5                                 | 46.51                              | 5                                     |

**Electrical Characteristics (TA=25°C unless otherwise noted) (Continue)**

| Part Number |           | Marking |     | Reverse Stand-Off Voltage VRWM (V) | Breakdown Voltage VBR (V) @IT |        | Test Current IT (mA) | Maximum Clamping Voltage Vc @IPP (V) | Maximum Peak Pulse Current IPP (A) | Maximum Reverse Leakage IR @VRWM (μA) |
|-------------|-----------|---------|-----|------------------------------------|-------------------------------|--------|----------------------|--------------------------------------|------------------------------------|---------------------------------------|
| Uni         | Bi        | Uni     | Bi  |                                    | MIN                           | MAX    |                      |                                      |                                    |                                       |
| SMDJ43      | SMDJ43C   | PFS     | DFS | 43.0                               | 47.80                         | 58.40  | 1                    | 76.7                                 | 39.11                              | 5                                     |
| SMDJ43A     | SMDJ43CA  | PFT     | DFT | 43.0                               | 47.80                         | 52.80  | 1                    | 69.4                                 | 43.23                              | 5                                     |
| SMDJ45      | SMDJ45C   | PFU     | DFU | 45.0                               | 50.00                         | 61.10  | 1                    | 80.3                                 | 37.36                              | 5                                     |
| SMDJ45A     | SMDJ45CA  | PFV     | DFV | 45.0                               | 50.00                         | 55.30  | 1                    | 72.7                                 | 41.27                              | 5                                     |
| SMDJ48      | SMDJ48C   | PFW     | DFW | 48.0                               | 53.30                         | 65.10  | 1                    | 85.5                                 | 35.09                              | 5                                     |
| SMDJ48A     | SMDJ48CA  | PFX     | DFX | 48.0                               | 53.30                         | 58.90  | 1                    | 77.4                                 | 38.76                              | 5                                     |
| SMDJ51      | SMDJ51C   | PFY     | DFY | 51.0                               | 56.70                         | 69.30  | 1                    | 91.1                                 | 32.93                              | 5                                     |
| SMDJ51A     | SMDJ51CA  | PFZ     | DFZ | 51.0                               | 56.70                         | 62.70  | 1                    | 82.4                                 | 36.41                              | 5                                     |
| SMDJ54      | SMDJ54C   | RGD     | DGD | 54.0                               | 60.00                         | 73.30  | 1                    | 96.3                                 | 31.15                              | 5                                     |
| SMDJ54A     | SMDJ54CA  | RGE     | DGE | 54.0                               | 60.00                         | 66.30  | 1                    | 87.1                                 | 34.44                              | 5                                     |
| SMDJ58      | SMDJ58C   | RGF     | DGF | 58.0                               | 64.40                         | 78.70  | 1                    | 103.0                                | 29.13                              | 5                                     |
| SMDJ58A     | SMDJ58CA  | PGG     | DGG | 58.0                               | 64.40                         | 71.20  | 1                    | 93.6                                 | 32.05                              | 5                                     |
| SMDJ60      | SMDJ60C   | RGH     | DGH | 60.0                               | 66.70                         | 81.50  | 1                    | 107.0                                | 28.04                              | 5                                     |
| SMDJ60A     | SMDJ60CA  | PGK     | DGK | 60.0                               | 66.70                         | 73.70  | 1                    | 96.8                                 | 30.99                              | 5                                     |
| SMDJ64      | SMDJ64C   | PGL     | DGL | 64.0                               | 71.10                         | 86.90  | 1                    | 114.0                                | 26.32                              | 5                                     |
| SMDJ64A     | SMDJ64CA  | PGM     | DGM | 64.0                               | 71.10                         | 78.60  | 1                    | 103.0                                | 29.13                              | 5                                     |
| SMDJ70      | SMDJ70C   | PGN     | DGN | 70.0                               | 77.80                         | 95.10  | 1                    | 125.0                                | 24.00                              | 5                                     |
| SMDJ70A     | SMDJ70CA  | PGP     | DGP | 70.0                               | 77.80                         | 86.00  | 1                    | 113.0                                | 26.55                              | 5                                     |
| SMDJ75      | SMDJ75C   | PGQ     | DGQ | 75.0                               | 83.30                         | 102.00 | 1                    | 134.0                                | 22.39                              | 5                                     |
| SMDJ75A     | SMDJ75CA  | PGR     | DGR | 75.0                               | 83.30                         | 92.10  | 1                    | 121.0                                | 24.79                              | 5                                     |
| SMDJ78      | SMDJ78C   | PGS     | DGS | 78.0                               | 86.70                         | 106.00 | 1                    | 139.0                                | 21.58                              | 5                                     |
| SMDJ78A     | SMDJ78CA  | PGT     | DGT | 78.0                               | 86.70                         | 95.80  | 1                    | 126.0                                | 23.81                              | 5                                     |
| SMDJ80      | SMDJ80C   | PGA     | DGA | 80.0                               | 88.80                         | 108.80 | 1                    | 143.2                                | 20.95                              | 5                                     |
| SMDJ80A     | SMDJ80CA  | PGB     | DGB | 80.0                               | 88.80                         | 97.60  | 1                    | 129.6                                | 23.15                              | 5                                     |
| SMDJ85      | SMDJ85C   | PGU     | DGU | 85.0                               | 94.40                         | 115.00 | 1                    | 151.0                                | 19.87                              | 5                                     |
| SMDJ85A     | SMDJ85CA  | PGV     | DGV | 85.0                               | 94.40                         | 104.00 | 1                    | 137.0                                | 21.90                              | 5                                     |
| SMDJ90      | SMDJ90C   | PGW     | DGW | 90.0                               | 100.00                        | 122.00 | 1                    | 160.0                                | 18.75                              | 5                                     |
| SMDJ90A     | SMDJ90CA  | PGX     | DGX | 90.0                               | 100.00                        | 111.00 | 1                    | 146.0                                | 20.55                              | 5                                     |
| SMDJ100     | SMDJ100C  | PGY     | DGY | 100.0                              | 111.00                        | 136.00 | 1                    | 179.0                                | 16.76                              | 5                                     |
| SMDJ100A    | SMDJ100CA | PGZ     | DGZ | 100.0                              | 111.00                        | 123.00 | 1                    | 162.0                                | 18.52                              | 5                                     |
| SMDJ110     | SMDJ110C  | PHD     | DHD | 110.0                              | 122.00                        | 149.00 | 1                    | 196.0                                | 15.31                              | 5                                     |
| SMDJ110A    | SMDJ110CA | PHE     | DHE | 110.0                              | 122.00                        | 135.00 | 1                    | 177.0                                | 16.95                              | 5                                     |
| SMDJ120     | SMDJ120C  | PHF     | DHF | 120.0                              | 133.00                        | 163.00 | 1                    | 214.0                                | 14.02                              | 5                                     |
| SMDJ120A    | SMDJ120CA | PHG     | DHG | 120.0                              | 133.00                        | 147.00 | 1                    | 193.0                                | 15.54                              | 5                                     |
| SMDJ130     | SMDJ130C  | PHH     | DHH | 130.0                              | 144.00                        | 176.00 | 1                    | 231.0                                | 12.99                              | 5                                     |
| SMDJ130A    | SMDJ130CA | PHK     | DHK | 130.0                              | 144.00                        | 159.00 | 1                    | 209.0                                | 14.35                              | 5                                     |
| SMDJ140     | SMDJ140C  | PHA     | DHA | 140.0                              | 155.00                        | 190.40 | 1                    | 250.6                                | 11.97                              | 5                                     |
| SMDJ140A    | SMDJ140CA | PHB     | DHB | 140.0                              | 155.00                        | 171.00 | 1                    | 226.8                                | 13.23                              | 5                                     |
| SMDJ150     | SMDJ150C  | PHL     | DHL | 150.0                              | 167.00                        | 204.00 | 1                    | 268.0                                | 11.19                              | 5                                     |
| SMDJ150A    | SMDJ150CA | PHM     | DHM | 150.0                              | 167.00                        | 185.00 | 1                    | 243.0                                | 12.35                              | 5                                     |
| SMDJ160     | SMDJ160C  | PHN     | DHN | 160.0                              | 178.00                        | 218.00 | 1                    | 287.0                                | 10.45                              | 5                                     |
| SMDJ160A    | SMDJ160CA | PHP     | DHP | 160.0                              | 178.00                        | 197.00 | 1                    | 259.0                                | 11.58                              | 5                                     |
| SMDJ170     | SMDJ170C  | PHQ     | DHQ | 170.0                              | 189.00                        | 231.00 | 1                    | 304.0                                | 9.87                               | 5                                     |
| SMDJ170A    | SMDJ170CA | PHR     | DHR | 170.0                              | 189.00                        | 209.00 | 1                    | 275.0                                | 10.91                              | 5                                     |
| SMDJ180     | SMDJ180C  | PHS     | DHS | 180.0                              | 201.00                        | 244.80 | 1                    | 322.2                                | 9.31                               | 5                                     |
| SMDJ180A    | SMDJ180CA | PHT     | DHT | 180.0                              | 201.00                        | 220.00 | 1                    | 291.6                                | 10.29                              | 5                                     |
| SMDJ190     | SMDJ190C  | PHU     | DHU | 190.0                              | 211.00                        | 258.40 | 1                    | 340.1                                | 8.82                               | 5                                     |
| SMDJ190A    | SMDJ190CA | PHV     | DHV | 190.0                              | 211.00                        | 232.00 | 1                    | 307.8                                | 9.75                               | 5                                     |
| SMDJ200A    | SMDJ200CA | PHW     | DHW | 200.0                              | 224.00                        | 247.00 | 1                    | 324.0                                | 9.26                               | 5                                     |
| SMDJ220A    | SMDJ220CA | PHX     | DHX | 220.0                              | 246.00                        | 272.00 | 1                    | 356.0                                | 8.43                               | 5                                     |
| SMDJ250A    | SMDJ250CA | PHZ     | DHZ | 250.0                              | 279.00                        | 309.00 | 1                    | 405.0                                | 7.41                               | 5                                     |
| SMDJ300A    | SMDJ300CA | PJE     | DJE | 300.0                              | 335.00                        | 371.00 | 1                    | 486.0                                | 6.17                               | 5                                     |
| SMDJ350A    | SMDJ350CA | PJG     | DJG | 350.0                              | 391.00                        | 432.00 | 1                    | 567.0                                | 5.29                               | 5                                     |
| SMDJ400A    | SMDJ400CA | PJK     | DJK | 400.0                              | 447.00                        | 494.00 | 1                    | 648.0                                | 4.63                               | 5                                     |
| SMDJ440A    | SMDJ440CA | PJM     | DJM | 440.0                              | 492.00                        | 543.00 | 1                    | 713.0                                | 4.21                               | 5                                     |

**Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$  unless otherwise noted)**

Figure 1 - Peak Pulse Power Rating Curve

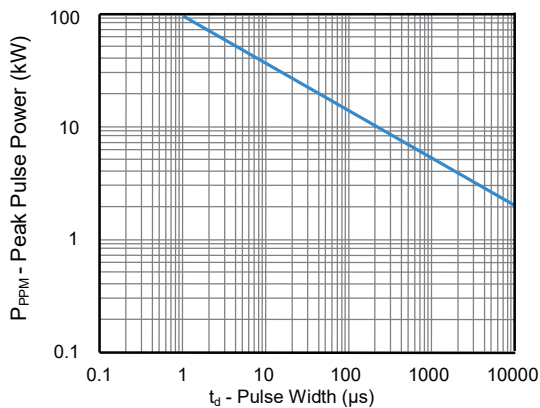


Figure 2 - Pulse Derating Curve

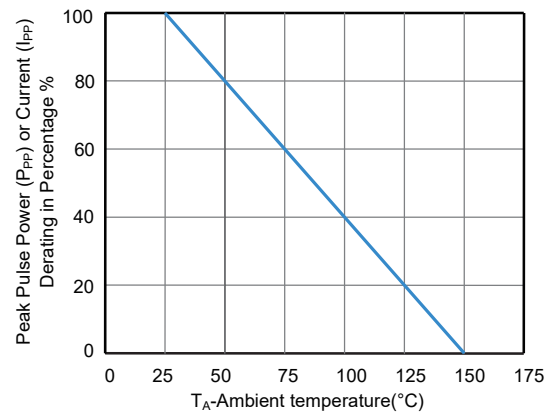


Figure 3 - Pulse Waveform

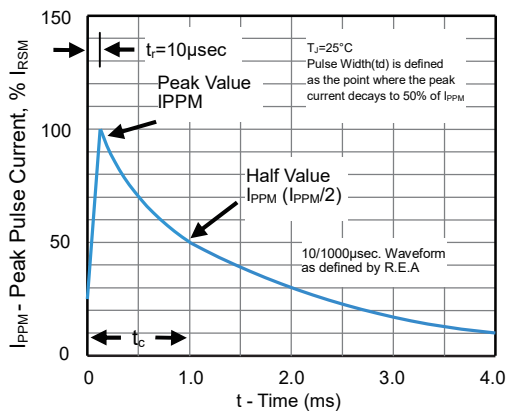


Figure 4 - Typical Junction Capacitance

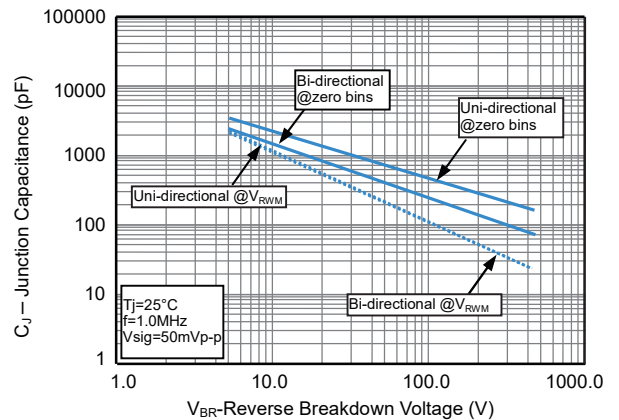


Figure 5 - Steady State Power Derating Curve

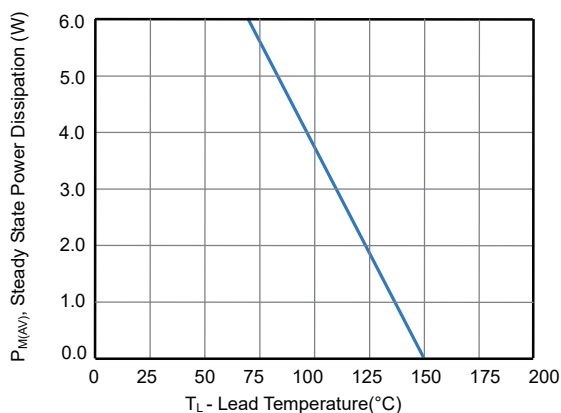
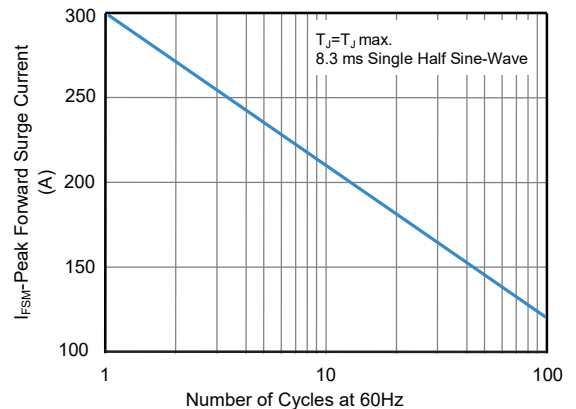
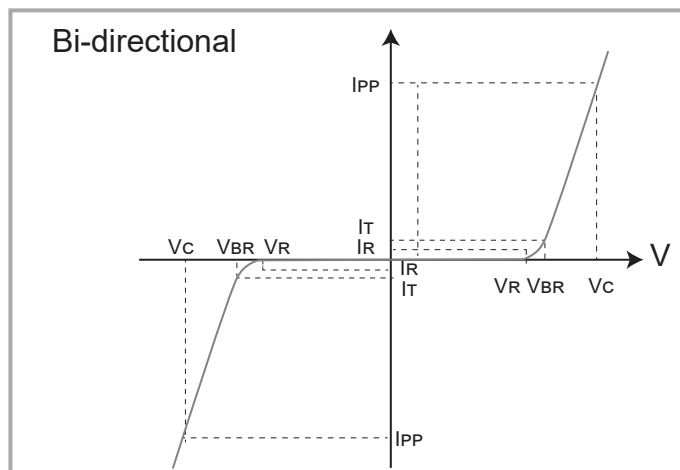
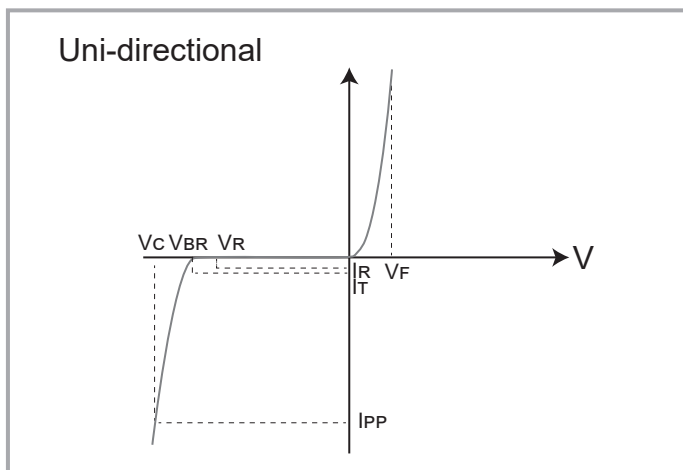


Figure 6 - Maximum Non-Repetitive Surge Current





## I-V Curve Characteristics



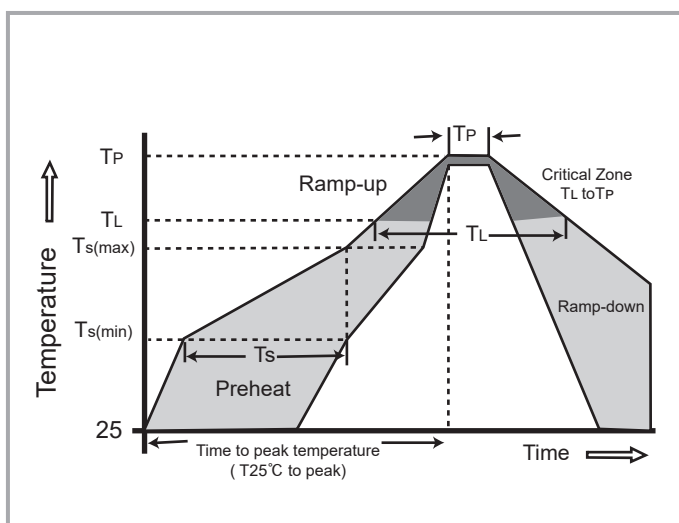
## Physical Specifications

|          |                                                                   |
|----------|-------------------------------------------------------------------|
| Weight   | 0.007 ounce, 0.21 gram                                            |
| Case     | JEDEC DO-214AB(SMC) Molded Plastic over glass passivated junction |
| Polarity | Color band denotes cathode except Bipolar                         |
| Terminal | Matte Tin-plated leads, Solderable per JESD22-B102D               |

## Environmental Specifications

|                    |             |
|--------------------|-------------|
| Temperature Cycle  | JESD22-A104 |
| Pressure Cooker    | JESD22-A102 |
| High Temp. Storage | JESD22-A103 |
| HTRB               | JESD22-A108 |
| Thermal Shock      | JESD22-A106 |

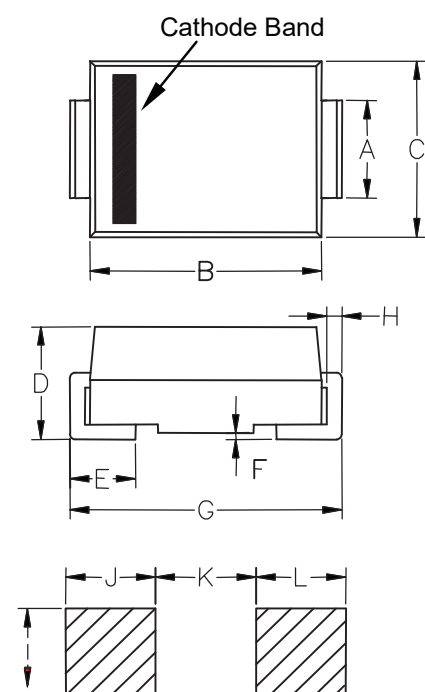
## Soldering Parameters



| Reflow Condition                                |                               | Lead-free assembly |
|-------------------------------------------------|-------------------------------|--------------------|
| Pre Heat                                        | -Temperature Min (Ts(min))    | 150°C              |
|                                                 | -Temperature Max (Ts(max))    | 200°C              |
|                                                 | -Time (min to max) (Ts)       | 60 -180 Seconds    |
| Average ramp up rate ( Liquidus Temp TL to peak |                               | 3°C/Second max     |
| Ts(max) to TL - Ramp-up Rate                    |                               | 3°C/Second max     |
| Reflow                                          | - Temperature (TL) (Liquidus) | 217°C              |
|                                                 | - Time (min to max) (Ts)      | 60 -150 Seconds    |
| Peak Temperature (TP)                           |                               | 260 +0/-5°C        |
| Time within 5°C of actual peak Temperature (TP) |                               | 20-40 Seconds      |
| Ramp-down Rate                                  |                               | 6°C/Second Max     |
| Time 25°C to peak Temperature (TP)              |                               | 8 minutes Max      |
| Do not exceed                                   |                               | 280°C              |

## Dimensions

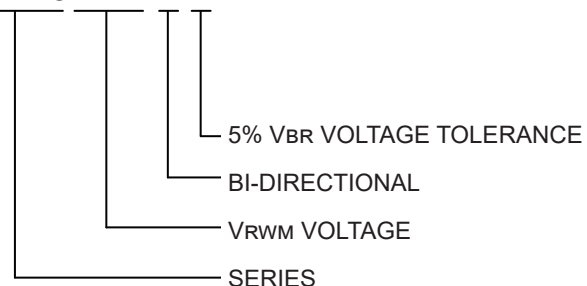
DO-214AB (SMC)



| Dimensions | Inches |       | Millimeters |       |
|------------|--------|-------|-------------|-------|
|            | Min    | Max   | Min         | Max   |
| A          | 0.114  | 0.126 | 2.86        | 3.160 |
| B          | 0.260  | 0.280 | 6.520       | 7.020 |
| C          | 0.220  | 0.245 | 5.520       | 6.150 |
| D          | 0.079  | 0.103 | 1.980       | 2.590 |
| E          | 0.030  | 0.060 | 0.750       | 1.510 |
| F          | -      | 0.008 | -           | 0.203 |
| G          | 0.305  | 0.320 | 7.640       | 8.020 |
| H          | 0.006  | 0.012 | 0.152       | 0.305 |
| I          | 0.129  | -     | 3.300       | -     |
| J          | 0.094  | -     | 2.400       | -     |
| K          | -      | 0.165 | -           | 4.200 |
| L          | 0.094  | -     | 2.400       | -     |

## Part Numbering

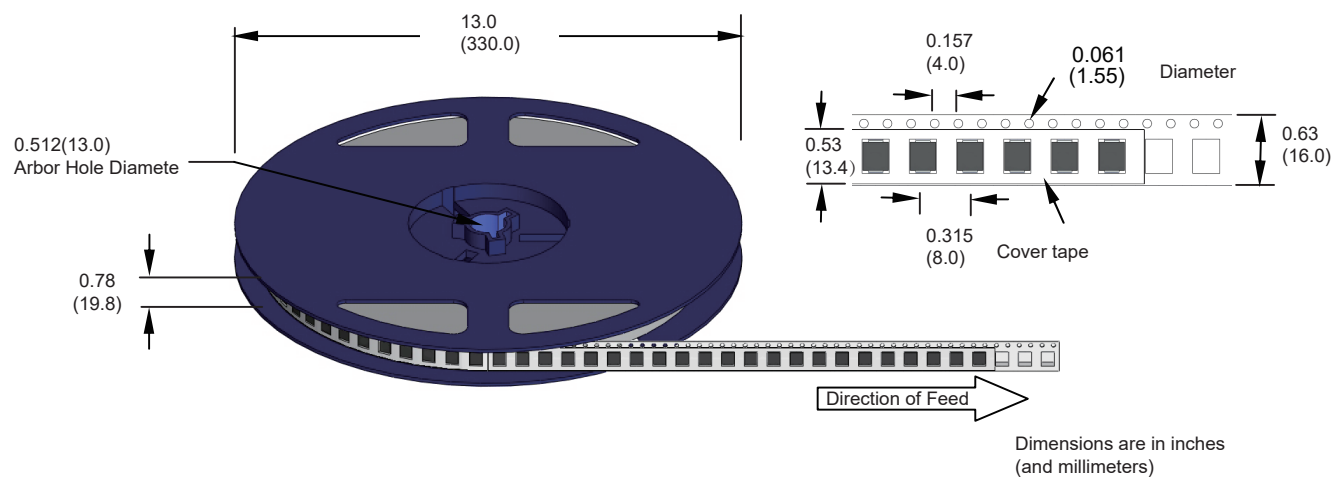
**SMDJ xxx CA**



## Ordering Information

| Part Number | Component Package | Quantity | Packaging Option          | Packaging Specification |
|-------------|-------------------|----------|---------------------------|-------------------------|
| SMDJXXXXX   | DO-214AB          | 3,000    | Tape & Reel -16mm/13"tape | EIA STD RS-481          |

## Tape and Reel Specifications



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