



# THE DATASHEET OF SMAJ17CATR



## SMAJ SERIES SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

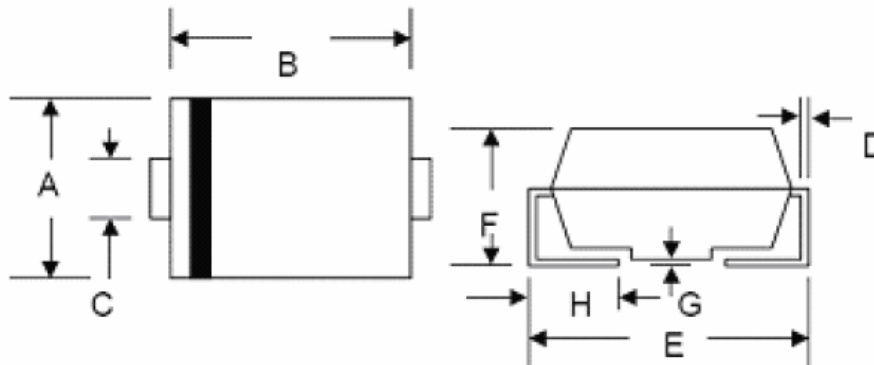
**Features:**

- Glass Passivated Die Construction
- 400W Peak Pulse Power Dissipation
- 5.0V- 170V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O
- This is a Pb – Free Device
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request

**Mechanical Data:**

- Case: JEDEC DO-214AC Low Profile Molded Plastic
- Terminals: Solder Plated , Solderable per MIL-STD 750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Weight:0.064 grams(approx.)

**Mechanical Dimensions: In Inches (mm)**



| SMA/DO-214AC |       |       |         |       |
|--------------|-------|-------|---------|-------|
| Dim.         | Min.  | Max.  | Min.    | Max.  |
| A            | 2.50  | 2.90  | 0.098   | 0.114 |
| B            | 4.00  | 4.60  | 0.157   | 0.181 |
| C            | 1.40  | 1.60  | 0.055   | 0.063 |
| D            | 0.152 | 0.305 | 0.006   | 0.012 |
| E            | 4.80  | 5.28  | 0.189   | 0.208 |
| F            | 2.00  | 2.44  | 0.079   | 0.096 |
| G            | 0.051 | 0.203 | 0.002   | 0.008 |
| H            | 0.76  | 1.52  | 0.030   | 0.060 |
|              | In mm |       | In inch |       |

**SMA**

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**Technical Data**  
Data Sheet N0223, Rev. -

**Marking Diagram:**



SMAJ5.0

SMAJ5.0C

Where XXXXX is YYWWL

HD/TD = Part Name  
YY = Year  
WW = Week  
L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

**Ordering Information**

| Device      | Package          | Shipping       |
|-------------|------------------|----------------|
| SMAJ SERIES | SMA<br>(Pb-Free) | 5000pcs / reel |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

**Maximum Ratings and Electrical Characteristics @ $T_A=25^\circ\text{C}$  unless otherwise specified**

| Parameter  | Symbol         | Value       | Unit             |
|--|----------------|-------------|------------------|
| Peak Pulse Power Dissipation at $T_A=25^\circ\text{C}$ by 10x1000 $\mu\text{s}$ Waveform (Fig.1)(Note 1, 2, 5) | $P_{PPM}$      | 400         | W                |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave ( Fig.5),(Note 3)                                      | $I_{FSM}$      | 40          | A                |
| Peak Pulse Current on 10x1000 $\mu\text{s}$ Waveform(Fig.2)(Note 1)  | $I_{PPM}$      | See Table 1 | A                |
| Steady State Power Dissipation(Note 4)   | $P_{M(AV)}$    | 1.0         | W                |
| Operating Junction and Storage Temperature Range   | $T_J, T_{STG}$ | -55 to 150  | $^\circ\text{C}$ |

- Notes:**
1. Non-repetitive current pulse, per Fig. 3 and derated above  $T_A = 25^\circ\text{C}$  per Fig. 2.
  2. Mounted on 5.0mm<sup>2</sup> copper pads to each terminal.
  3. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4pulses per minute maximum.
  4. Lead temperature at  $75^\circ\text{C}=T_L$
  5. Peak pulse power waveform is 10x1000 $\mu\text{s}$

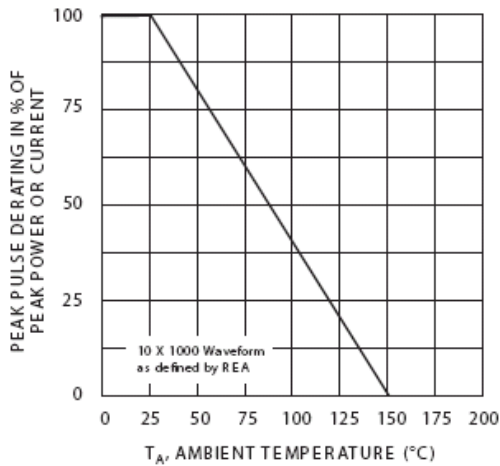


Fig. 1 Pulse Derating Curve

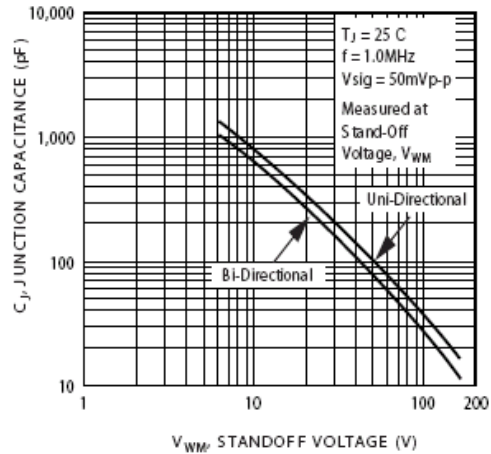


Fig. 2 Typical Junction Capacitance

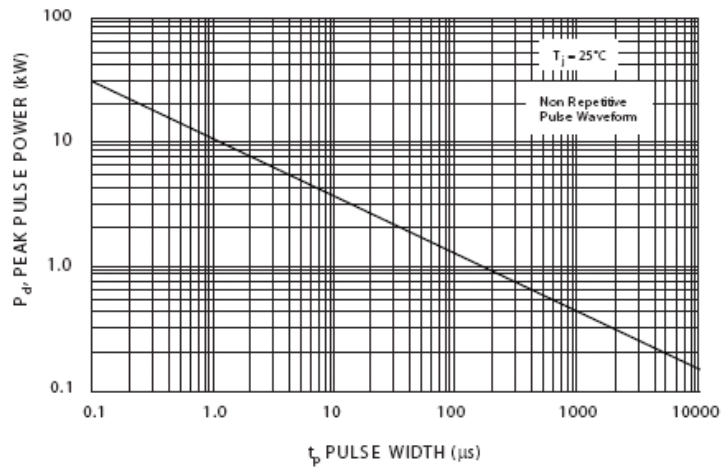


Fig. 3 Pulse Rating Curve

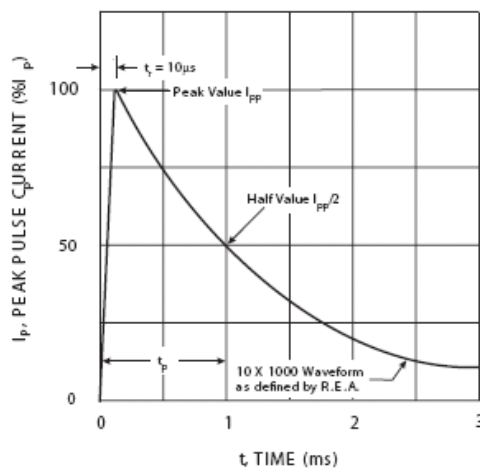


Fig. 4 Pulse Waveform

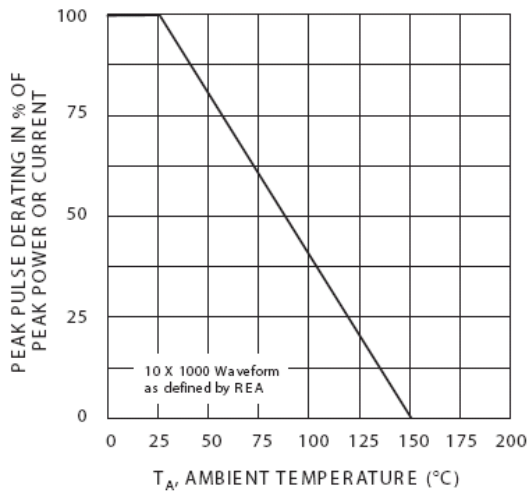


Fig. 1 Pulse Derating Curve

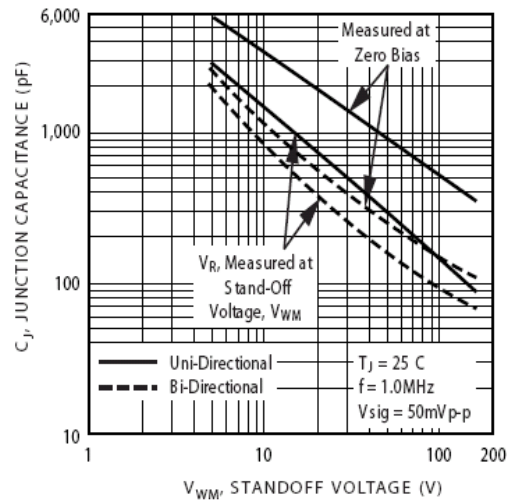


Fig. 2 Typical Junction Capacitance

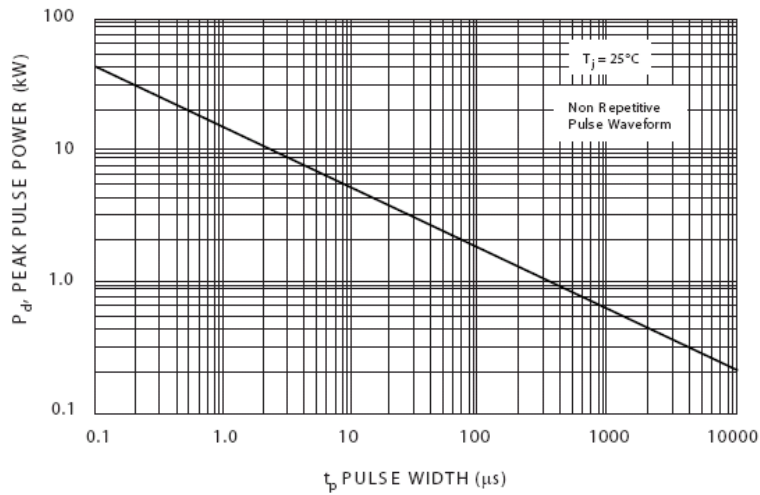


Fig. 3 Pulse Rating Curve

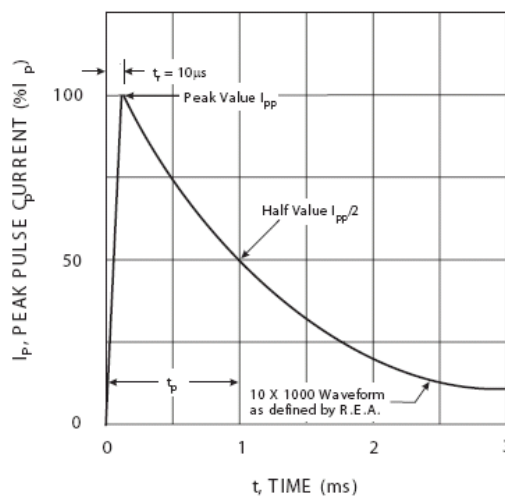


Fig. 4 Pulse Waveform



**SMAJ SERIES**  
400W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Technical Data  
Data Sheet N0223, Rev. -

*Green Products*

**UNI-DIRECTIONAL 400 WATT SURFACE MOUNT TVS**

| UNI-DIRECTIONAL PART NO. | DEVICE MARKING CODE | REVERSE STAND-OFF VOLTAGE VRWM (V) | BREAKDOWN VOLTAGE VBR (V) MIN. @1T | BREAKDOWN VOLTAGE VBR (V) MAX. @1T | TEST CURRENT IT (mA) | MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V) | PEAK PULSE CURRENT Ipp (A) | REVERSE LEAKAGE @VRWM IR (uA) |
|--------------------------|---------------------|------------------------------------|------------------------------------|------------------------------------|----------------------|--------------------------------------|----------------------------|-------------------------------|
| SMAJ5.0                  | HD                  | 5.00                               | 8.40                               | 7.82                               | 10                   | 9.8                                  | 41.8                       | 800                           |
| SMAJ5.0A                 | HE                  | 5.00                               | 8.40                               | 7.07                               | 10                   | 9.2                                  | 43.5                       | 800                           |
| SMAJ6.0                  | HF                  | 8.00                               | 8.87                               | 8.15                               | 10                   | 11.4                                 | 35.1                       | 800                           |
| SMAJ6.0A                 | HG                  | 8.00                               | 8.87                               | 7.37                               | 10                   | 10.3                                 | 38.8                       | 800                           |
| SMAJ6.5                  | HH                  | 8.50                               | 7.22                               | 8.82                               | 10                   | 12.3                                 | 32.5                       | 500                           |
| SMAJ6.5A                 | HK                  | 8.50                               | 7.22                               | 7.98                               | 10                   | 11.2                                 | 35.7                       | 500                           |
| SMAJ7.0                  | HL                  | 7.00                               | 7.78                               | 9.51                               | 10                   | 13.3                                 | 30.1                       | 200                           |
| SMAJ7.0A                 | HM                  | 7.00                               | 7.78                               | 8.60                               | 10                   | 12.0                                 | 33.3                       | 200                           |
| SMAJ7.5                  | HN                  | 7.50                               | 8.33                               | 10.18                              | 1                    | 14.3                                 | 28.0                       | 100                           |
| SMAJ7.5A                 | HP                  | 7.50                               | 8.33                               | 9.21                               | 1                    | 12.9                                 | 31.0                       | 100                           |
| SMAJ8.0                  | HQ                  | 8.00                               | 8.99                               | 10.99                              | 1                    | 15.0                                 | 26.5                       | 50                            |
| SMAJ8.0A                 | HR                  | 8.00                               | 8.99                               | 9.94                               | 1                    | 13.8                                 | 29.4                       | 50                            |
| SMAJ8.5                  | HS                  | 8.50                               | 9.44                               | 11.54                              | 1                    | 15.9                                 | 25.1                       | 10                            |
| SMAJ8.5A                 | HT                  | 8.50                               | 9.44                               | 10.43                              | 1                    | 14.4                                 | 27.7                       | 10                            |
| SMAJ9.0                  | HU                  | 9.00                               | 10.00                              | 12.22                              | 1                    | 16.9                                 | 23.8                       | 5                             |
| SMAJ9.0A                 | HV                  | 9.00                               | 10.00                              | 11.05                              | 1                    | 15.4                                 | 26.0                       | 5                             |
| SMAJ10                   | HW                  | 10.00                              | 11.10                              | 13.57                              | 1                    | 18.8                                 | 21.2                       | 5                             |
| SMAJ10A                  | HX                  | 10.00                              | 11.10                              | 12.27                              | 1                    | 17.0                                 | 23.5                       | 5                             |
| SMAJ11                   | HY                  | 11.00                              | 12.20                              | 14.91                              | 1                    | 20.1                                 | 20.0                       | 5                             |
| SMAJ11A                  | HZ                  | 11.00                              | 12.20                              | 13.48                              | 1                    | 18.2                                 | 22.0                       | 5                             |
| SMAJ12                   | ID                  | 12.00                              | 13.30                              | 16.28                              | 1                    | 22.0                                 | 18.1                       | 5                             |
| SMAJ12A                  | IE                  | 12.00                              | 13.30                              | 14.70                              | 1                    | 19.9                                 | 20.1                       | 5                             |
| SMAJ13                   | IF                  | 13.00                              | 14.40                              | 17.80                              | 1                    | 23.8                                 | 16.8                       | 5                             |
| SMAJ13A                  | IG                  | 13.00                              | 14.40                              | 15.92                              | 1                    | 21.5                                 | 18.8                       | 5                             |
| SMAJ14                   | IH                  | 14.00                              | 15.80                              | 19.07                              | 1                    | 25.8                                 | 15.5                       | 5                             |
| SMAJ14A                  | IK                  | 14.00                              | 15.80                              | 17.24                              | 1                    | 23.2                                 | 17.2                       | 5                             |
| SMAJ15                   | IL                  | 15.00                              | 16.70                              | 20.41                              | 1                    | 28.9                                 | 14.8                       | 5                             |
| SMAJ15A                  | IM                  | 15.00                              | 16.70                              | 18.48                              | 1                    | 24.4                                 | 16.4                       | 5                             |
| SMAJ16                   | IN                  | 16.00                              | 17.80                              | 21.78                              | 1                    | 28.8                                 | 13.8                       | 5                             |
| SMAJ16A                  | IP                  | 16.00                              | 17.80                              | 19.87                              | 1                    | 26.0                                 | 15.3                       | 5                             |
| SMAJ17                   | IQ                  | 17.00                              | 18.90                              | 23.10                              | 1                    | 30.5                                 | 13.1                       | 5                             |
| SMAJ17A                  | IR                  | 17.00                              | 18.90                              | 20.89                              | 1                    | 27.8                                 | 14.5                       | 5                             |
| SMAJ18                   | IS                  | 18.00                              | 20.00                              | 24.44                              | 1                    | 32.2                                 | 12.4                       | 5                             |
| SMAJ18A                  | IT                  | 18.00                              | 20.00                              | 22.11                              | 1                    | 29.2                                 | 13.7                       | 5                             |
| SMAJ20                   | IU                  | 20.00                              | 22.20                              | 27.13                              | 1                    | 35.8                                 | 11.1                       | 5                             |
| SMAJ20A                  | IV                  | 20.00                              | 22.20                              | 24.54                              | 1                    | 32.4                                 | 12.3                       | 5                             |
| SMAJ22                   | IW                  | 22.00                              | 24.40                              | 29.82                              | 1                    | 39.4                                 | 10.1                       | 5                             |
| SMAJ22A                  | IX                  | 22.00                              | 24.40                              | 26.97                              | 1                    | 35.5                                 | 11.2                       | 5                             |
| SMAJ24                   | IY                  | 24.00                              | 26.70                              | 32.83                              | 1                    | 43.0                                 | 9.3                        | 5                             |
| SMAJ24A                  | IZ                  | 24.00                              | 26.70                              | 29.51                              | 1                    | 38.9                                 | 10.3                       | 5                             |
| SMAJ26                   | JD                  | 26.00                              | 28.90                              | 35.32                              | 1                    | 46.8                                 | 8.8                        | 5                             |
| SMAJ26A                  | JE                  | 26.00                              | 28.90                              | 31.94                              | 1                    | 42.1                                 | 9.5                        | 5                             |
| SMAJ28                   | JF                  | 28.00                              | 31.10                              | 38.01                              | 1                    | 50.0                                 | 8.0                        | 5                             |
| SMAJ28A                  | JG                  | 28.00                              | 31.10                              | 34.37                              | 1                    | 45.4                                 | 8.8                        | 5                             |
| SMAJ30                   | JH                  | 30.00                              | 33.30                              | 40.70                              | 1                    | 53.5                                 | 7.5                        | 5                             |
| SMAJ30A                  | JK                  | 30.00                              | 33.30                              | 36.81                              | 1                    | 48.4                                 | 8.3                        | 5                             |
| SMAJ33                   | JL                  | 33.00                              | 36.70                              | 44.88                              | 1                    | 59.0                                 | 6.8                        | 5                             |
| SMAJ33A                  | JM                  | 33.00                              | 36.70                              | 40.58                              | 1                    | 53.3                                 | 7.5                        | 5                             |
| SMAJ36                   | JN                  | 36.00                              | 40.00                              | 48.89                              | 1                    | 64.3                                 | 6.2                        | 5                             |
| SMAJ36A                  | JP                  | 36.00                              | 40.00                              | 44.21                              | 1                    | 58.1                                 | 6.9                        | 5                             |
| SMAJ40                   | JQ                  | 40.00                              | 44.40                              | 54.27                              | 1                    | 71.4                                 | 5.8                        | 5                             |
| SMAJ40A                  | JR                  | 40.00                              | 44.40                              | 49.07                              | 1                    | 64.5                                 | 6.2                        | 5                             |
| SMAJ43                   | JS                  | 43.00                              | 47.80                              | 58.42                              | 1                    | 78.7                                 | 5.2                        | 5                             |
| SMAJ43A                  | JT                  | 43.00                              | 47.80                              | 52.83                              | 1                    | 69.4                                 | 5.7                        | 5                             |
| SMAJ45                   | JU                  | 45.00                              | 50.00                              | 61.11                              | 1                    | 80.3                                 | 5.0                        | 5                             |
| SMAJ45A                  | JV                  | 45.00                              | 50.00                              | 55.28                              | 1                    | 72.7                                 | 5.5                        | 5                             |
| SMAJ48                   | JW                  | 48.00                              | 53.30                              | 65.14                              | 1                    | 85.5                                 | 4.7                        | 5                             |
| SMAJ48A                  | JX                  | 48.00                              | 53.30                              | 58.91                              | 1                    | 77.4                                 | 5.2                        | 5                             |
| SMAJ51                   | JY                  | 51.00                              | 58.70                              | 69.30                              | 1                    | 91.1                                 | 4.4                        | 5                             |
| SMAJ51A                  | JZ                  | 51.00                              | 58.70                              | 62.67                              | 1                    | 82.4                                 | 4.9                        | 5                             |
| SMAJ54                   | RD                  | 54.00                              | 60.00                              | 73.33                              | 1                    | 98.3                                 | 4.2                        | 5                             |
| SMAJ54A                  | RE                  | 54.00                              | 60.00                              | 66.32                              | 1                    | 87.1                                 | 4.6                        | 5                             |
| SMAJ58                   | RF                  | 58.00                              | 64.40                              | 78.71                              | 1                    | 103.0                                | 3.9                        | 5                             |
| SMAJ58A                  | RG                  | 58.00                              | 64.40                              | 71.18                              | 1                    | 93.8                                 | 4.3                        | 5                             |
| SMAJ60                   | RH                  | 60.00                              | 68.70                              | 81.52                              | 1                    | 107.0                                | 3.7                        | 5                             |
| SMAJ60A                  | RK                  | 60.00                              | 68.70                              | 73.72                              | 1                    | 98.8                                 | 4.1                        | 5                             |
| SMAJ64                   | RL                  | 64.00                              | 71.10                              | 86.90                              | 1                    | 114.0                                | 3.5                        | 5                             |
| SMAJ64A                  | RM                  | 64.00                              | 71.10                              | 78.58                              | 1                    | 103.0                                | 3.9                        | 5                             |
| SMAJ70                   | RN                  | 70.00                              | 77.80                              | 95.09                              | 1                    | 125.0                                | 3.2                        | 5                             |
| SMAJ70A                  | RO                  | 70.00                              | 77.80                              | 85.99                              | 1                    | 113.0                                | 3.5                        | 5                             |
| SMAJ75                   | RQ                  | 75.00                              | 83.30                              | 101.81                             | 1                    | 134.0                                | 3.0                        | 5                             |
| SMAJ75A                  | RR                  | 75.00                              | 83.30                              | 92.07                              | 1                    | 121.0                                | 3.3                        | 5                             |
| SMAJ78                   | RS                  | 78.00                              | 88.70                              | 105.97                             | 1                    | 139.0                                | 2.9                        | 5                             |
| SMAJ78A                  | RT                  | 78.00                              | 88.70                              | 95.83                              | 1                    | 128.0                                | 2.2                        | 5                             |
| SMAJ85                   | RU                  | 85.00                              | 94.40                              | 115.38                             | 1                    | 151.0                                | 2.8                        | 5                             |
| SMAJ85A                  | RV                  | 85.00                              | 94.40                              | 104.34                             | 1                    | 137.0                                | 2.9                        | 5                             |
| SMAJ90                   | RW                  | 90.00                              | 100.00                             | 122.22                             | 1                    | 160.0                                | 2.5                        | 5                             |
| SMAJ90A                  | RX                  | 90.00                              | 100.00                             | 110.53                             | 1                    | 148.0                                | 2.7                        | 5                             |
| SMAJ100                  | RY                  | 100.00                             | 111.00                             | 135.67                             | 1                    | 179.0                                | 2.2                        | 5                             |
| SMAJ100A                 | RZ                  | 100.00                             | 111.00                             | 122.88                             | 1                    | 162.0                                | 2.5                        | 5                             |
| SMAJ110                  | SD                  | 110.00                             | 122.00                             | 149.11                             | 1                    | 196.0                                | 2.0                        | 5                             |
| SMAJ110A                 | SE                  | 110.00                             | 122.00                             | 134.84                             | 1                    | 177.0                                | 2.3                        | 5                             |
| SMAJ120                  | SF                  | 120.00                             | 133.00                             | 162.58                             | 1                    | 214.0                                | 1.9                        | 5                             |
| SMAJ120A                 | SG                  | 120.00                             | 133.00                             | 147.00                             | 1                    | 193.0                                | 2.0                        | 5                             |
| SMAJ130                  | SH                  | 130.00                             | 144.00                             | 178.00                             | 1                    | 231.0                                | 1.7                        | 5                             |
| SMAJ130A                 | SK                  | 130.00                             | 144.00                             | 159.18                             | 1                    | 209.0                                | 1.9                        | 5                             |
| SMAJ150                  | SL                  | 150.00                             | 167.00                             | 204.11                             | 1                    | 269.0                                | 1.5                        | 5                             |
| SMAJ150A                 | SM                  | 150.00                             | 167.00                             | 184.58                             | 1                    | 243.0                                | 1.6                        | 5                             |
| SMAJ160                  | SN                  | 160.00                             | 178.00                             | 217.58                             | 1                    | 287.0                                | 1.4                        | 5                             |
| SMAJ160A                 | SP                  | 160.00                             | 178.00                             | 198.74                             | 1                    | 259.0                                | 1.5                        | 5                             |
| SMAJ170                  | SQ                  | 170.00                             | 189.00                             | 231.00                             | 1                    | 304.0                                | 1.3                        | 5                             |
| SMAJ170A                 | SR                  | 170.00                             | 189.00                             | 208.89                             | 1                    | 275.0                                | 1.4                        | 5                             |

"C" Suffix Designates Bi-directional Devices  
 "A" Suffix Designates 5% Tolerance Devices  
 No Suffix Designates 10% Tolerance Devices

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**SMAJ SERIES**  
400W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Technical Data  
Data Sheet N0223, Rev. -

*Green Products*

**BI-DIRECTIONAL 400 WATT SURFACE MOUNT TVS**

| BI-DIRECTIONAL PART NO. | DEVICE MARKING CODE | REVERSE STAND-OFF VOLTAGE VRWM (V) | BREAKDOWN VOLTAGE VBR (V) MIN. @1T | BREAKDOWN VOLTAGE VBR (V) MAX. @1T | TEST CURRENT IT (mA) | MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V) | PEAK PULSE CURRENT Ipp (A) | REVERSE LEAKAGE @VRWM IR (uA) |
|-------------------------|---------------------|------------------------------------|------------------------------------|------------------------------------|----------------------|--------------------------------------|----------------------------|-------------------------------|
| SMAJ50C                 | TD                  | 5.00                               | 6.40                               | 7.82                               | 10                   | 9.8                                  | 41.8                       | 1600                          |
| SMAJ50CA                | TE                  | 5.00                               | 6.40                               | 7.07                               | 10                   | 9.2                                  | 43.5                       | 1600                          |
| SMAJ60C                 | TF                  | 6.00                               | 6.67                               | 8.15                               | 10                   | 11.4                                 | 35.1                       | 1600                          |
| SMAJ60CA                | TG                  | 6.00                               | 6.67                               | 7.37                               | 10                   | 10.3                                 | 38.8                       | 1600                          |
| SMAJ65C                 | TH                  | 6.50                               | 7.22                               | 8.82                               | 10                   | 12.3                                 | 32.5                       | 1000                          |
| SMAJ65CA                | TK                  | 6.50                               | 7.22                               | 7.98                               | 10                   | 11.2                                 | 35.7                       | 1000                          |
| SMAJ70C                 | TL                  | 7.00                               | 7.78                               | 9.51                               | 10                   | 13.3                                 | 30.1                       | 400                           |
| SMAJ70CA                | TM                  | 7.00                               | 7.78                               | 8.60                               | 10                   | 12.0                                 | 33.3                       | 400                           |
| SMAJ75C                 | TN                  | 7.50                               | 8.33                               | 10.18                              | 1                    | 14.3                                 | 28.0                       | 200                           |
| SMAJ75CA                | TP                  | 7.50                               | 8.33                               | 9.21                               | 1                    | 12.9                                 | 31.0                       | 200                           |
| SMAJ80C                 | TQ                  | 8.00                               | 8.99                               | 10.99                              | 1                    | 15.0                                 | 26.5                       | 100                           |
| SMAJ80CA                | TR                  | 8.00                               | 8.99                               | 9.94                               | 1                    | 13.6                                 | 29.4                       | 100                           |
| SMAJ85C                 | TS                  | 8.50                               | 9.44                               | 11.54                              | 1                    | 15.9                                 | 25.1                       | 20                            |
| SMAJ85CA                | TT                  | 8.50                               | 9.44                               | 10.43                              | 1                    | 14.4                                 | 27.7                       | 20                            |
| SMAJ90C                 | TU                  | 9.00                               | 10.00                              | 12.22                              | 1                    | 18.9                                 | 23.6                       | 10                            |
| SMAJ90CA                | TV                  | 9.00                               | 10.00                              | 11.05                              | 1                    | 15.4                                 | 26.0                       | 10                            |
| SMAJ10C                 | TW                  | 10.00                              | 11.10                              | 13.57                              | 1                    | 18.8                                 | 21.2                       | 5                             |
| SMAJ10CA                | TX                  | 10.00                              | 11.10                              | 12.27                              | 1                    | 17.0                                 | 23.5                       | 5                             |
| SMAJ11C                 | TY                  | 11.00                              | 12.20                              | 14.91                              | 1                    | 20.1                                 | 20.0                       | 5                             |
| SMAJ11CA                | TZ                  | 11.00                              | 12.20                              | 13.48                              | 1                    | 18.2                                 | 22.0                       | 5                             |
| SMAJ12C                 | UD                  | 12.00                              | 13.30                              | 16.28                              | 1                    | 22.0                                 | 18.1                       | 5                             |
| SMAJ12CA                | UE                  | 12.00                              | 13.30                              | 14.70                              | 1                    | 19.9                                 | 20.1                       | 5                             |
| SMAJ13C                 | UF                  | 13.00                              | 14.40                              | 17.60                              | 1                    | 23.8                                 | 16.8                       | 5                             |
| SMAJ13CA                | UG                  | 13.00                              | 14.40                              | 15.92                              | 1                    | 21.5                                 | 18.6                       | 5                             |
| SMAJ14C                 | UH                  | 14.00                              | 15.60                              | 19.07                              | 1                    | 25.8                                 | 15.5                       | 5                             |
| SMAJ14CA                | UK                  | 14.00                              | 15.60                              | 17.24                              | 1                    | 23.2                                 | 17.2                       | 5                             |
| SMAJ15C                 | UL                  | 15.00                              | 16.70                              | 20.41                              | 1                    | 28.9                                 | 14.8                       | 5                             |
| SMAJ15CA                | UM                  | 15.00                              | 16.70                              | 18.46                              | 1                    | 24.4                                 | 16.4                       | 5                             |
| SMAJ16C                 | UN                  | 16.00                              | 17.80                              | 21.76                              | 1                    | 28.8                                 | 13.8                       | 5                             |
| SMAJ16CA                | UP                  | 16.00                              | 17.80                              | 19.67                              | 1                    | 26.0                                 | 15.3                       | 5                             |
| SMAJ17C                 | UQ                  | 17.00                              | 18.90                              | 23.10                              | 1                    | 30.5                                 | 13.1                       | 5                             |
| SMAJ17CA                | UR                  | 17.00                              | 18.90                              | 20.89                              | 1                    | 27.6                                 | 14.5                       | 5                             |
| SMAJ18C                 | US                  | 18.00                              | 20.00                              | 24.44                              | 1                    | 32.2                                 | 12.4                       | 5                             |
| SMAJ18CA                | UT                  | 18.00                              | 20.00                              | 22.11                              | 1                    | 29.2                                 | 13.7                       | 5                             |
| SMAJ20C                 | UU                  | 20.00                              | 22.20                              | 27.13                              | 1                    | 35.8                                 | 11.1                       | 5                             |
| SMAJ20CA                | UV                  | 20.00                              | 22.20                              | 24.54                              | 1                    | 32.4                                 | 12.3                       | 5                             |
| SMAJ22C                 | UW                  | 22.00                              | 24.40                              | 29.62                              | 1                    | 39.4                                 | 10.1                       | 5                             |
| SMAJ22CA                | UX                  | 22.00                              | 24.40                              | 26.97                              | 1                    | 35.5                                 | 11.2                       | 5                             |
| SMAJ24C                 | UY                  | 24.00                              | 26.70                              | 32.63                              | 1                    | 43.0                                 | 9.3                        | 5                             |
| SMAJ24CA                | UZ                  | 24.00                              | 26.70                              | 29.51                              | 1                    | 38.9                                 | 10.3                       | 5                             |
| SMAJ26C                 | VD                  | 26.00                              | 28.90                              | 35.32                              | 1                    | 46.6                                 | 8.6                        | 5                             |
| SMAJ26CA                | VE                  | 26.00                              | 28.90                              | 31.94                              | 1                    | 42.1                                 | 9.5                        | 5                             |
| SMAJ28C                 | VF                  | 28.00                              | 31.10                              | 38.01                              | 1                    | 50.0                                 | 8.0                        | 5                             |
| SMAJ28CA                | VG                  | 28.00                              | 31.10                              | 34.37                              | 1                    | 45.4                                 | 8.8                        | 5                             |
| SMAJ30C                 | VH                  | 30.00                              | 33.30                              | 40.70                              | 1                    | 53.5                                 | 7.5                        | 5                             |
| SMAJ30CA                | VK                  | 30.00                              | 33.30                              | 36.81                              | 1                    | 48.4                                 | 8.3                        | 5                             |
| SMAJ33C                 | VL                  | 33.00                              | 36.70                              | 44.86                              | 1                    | 59.0                                 | 6.8                        | 5                             |
| SMAJ33CA                | VM                  | 33.00                              | 36.70                              | 40.56                              | 1                    | 53.3                                 | 7.5                        | 5                             |
| SMAJ36C                 | VN                  | 36.00                              | 40.00                              | 48.89                              | 1                    | 64.3                                 | 6.2                        | 5                             |
| SMAJ36CA                | VP                  | 36.00                              | 40.00                              | 44.21                              | 1                    | 58.1                                 | 6.9                        | 5                             |
| SMAJ40C                 | VQ                  | 40.00                              | 44.40                              | 54.27                              | 1                    | 71.4                                 | 5.6                        | 5                             |
| SMAJ40CA                | VR                  | 40.00                              | 44.40                              | 49.07                              | 1                    | 64.5                                 | 6.2                        | 5                             |
| SMAJ43C                 | VS                  | 43.00                              | 47.80                              | 58.42                              | 1                    | 78.7                                 | 5.2                        | 5                             |
| SMAJ43CA                | VT                  | 43.00                              | 47.80                              | 52.83                              | 1                    | 69.4                                 | 5.7                        | 5                             |
| SMAJ45C                 | VU                  | 45.00                              | 50.00                              | 61.11                              | 1                    | 80.3                                 | 5.0                        | 5                             |
| SMAJ45CA                | VV                  | 45.00                              | 50.00                              | 55.26                              | 1                    | 72.7                                 | 5.5                        | 5                             |
| SMAJ48C                 | VW                  | 48.00                              | 53.30                              | 65.14                              | 1                    | 85.5                                 | 4.7                        | 5                             |
| SMAJ48CA                | VX                  | 48.00                              | 53.30                              | 59.91                              | 1                    | 77.4                                 | 5.2                        | 5                             |
| SMAJ51C                 | VY                  | 51.00                              | 56.70                              | 69.30                              | 1                    | 91.1                                 | 4.4                        | 5                             |
| SMAJ51CA                | VZ                  | 51.00                              | 56.70                              | 62.67                              | 1                    | 82.4                                 | 4.9                        | 5                             |
| SMAJ54C                 | WD                  | 54.00                              | 60.00                              | 73.33                              | 1                    | 96.3                                 | 4.2                        | 5                             |
| SMAJ54CA                | WE                  | 54.00                              | 60.00                              | 66.32                              | 1                    | 87.1                                 | 4.6                        | 5                             |
| SMAJ58C                 | WF                  | 58.00                              | 64.40                              | 78.71                              | 1                    | 103.0                                | 3.9                        | 5                             |
| SMAJ58CA                | WG                  | 58.00                              | 64.40                              | 71.18                              | 1                    | 93.6                                 | 4.3                        | 5                             |
| SMAJ60C                 | WH                  | 60.00                              | 66.70                              | 81.52                              | 1                    | 107.0                                | 3.7                        | 5                             |
| SMAJ60CA                | WK                  | 60.00                              | 66.70                              | 73.72                              | 1                    | 96.8                                 | 4.1                        | 5                             |
| SMAJ64C                 | WL                  | 64.00                              | 71.10                              | 86.90                              | 1                    | 114.0                                | 3.5                        | 5                             |
| SMAJ64CA                | WM                  | 64.00                              | 71.10                              | 78.58                              | 1                    | 103.0                                | 3.9                        | 5                             |
| SMAJ70C                 | WN                  | 70.00                              | 77.80                              | 95.09                              | 1                    | 125.0                                | 3.2                        | 5                             |
| SMAJ70CA                | WP                  | 70.00                              | 77.80                              | 85.99                              | 1                    | 113.0                                | 3.5                        | 5                             |
| SMAJ75C                 | WQ                  | 75.00                              | 83.30                              | 101.81                             | 1                    | 134.0                                | 3.0                        | 5                             |
| SMAJ75CA                | WR                  | 75.00                              | 83.30                              | 92.07                              | 1                    | 121.0                                | 3.3                        | 5                             |
| SMAJ78C                 | WS                  | 78.00                              | 86.70                              | 105.97                             | 1                    | 139.0                                | 2.9                        | 5                             |
| SMAJ78CA                | WT                  | 78.00                              | 86.70                              | 95.83                              | 1                    | 128.0                                | 2.2                        | 5                             |
| SMAJ85C                 | WU                  | 85.00                              | 94.40                              | 115.38                             | 1                    | 151.0                                | 2.6                        | 5                             |
| SMAJ85CA                | WV                  | 85.00                              | 94.40                              | 104.34                             | 1                    | 137.0                                | 2.9                        | 5                             |
| SMAJ90C                 | WW                  | 90.00                              | 100.00                             | 122.22                             | 1                    | 160.0                                | 2.5                        | 5                             |
| SMAJ90CA                | WX                  | 90.00                              | 100.00                             | 110.53                             | 1                    | 148.0                                | 2.7                        | 5                             |
| SMAJ100C                | WY                  | 100.00                             | 111.00                             | 135.67                             | 1                    | 179.0                                | 2.2                        | 5                             |
| SMAJ100CA               | WZ                  | 100.00                             | 111.00                             | 122.68                             | 1                    | 162.0                                | 2.5                        | 5                             |
| SMAJ110C                | XD                  | 110.00                             | 122.00                             | 149.11                             | 1                    | 196.0                                | 2.0                        | 5                             |
| SMAJ110CA               | XE                  | 110.00                             | 122.00                             | 134.84                             | 1                    | 177.0                                | 2.3                        | 5                             |
| SMAJ120C                | XF                  | 120.00                             | 133.00                             | 162.56                             | 1                    | 214.0                                | 1.9                        | 5                             |
| SMAJ120CA               | XG                  | 120.00                             | 133.00                             | 147.00                             | 1                    | 193.0                                | 2.0                        | 5                             |
| SMAJ130C                | XH                  | 130.00                             | 144.00                             | 176.00                             | 1                    | 231.0                                | 1.7                        | 5                             |
| SMAJ130CA               | XK                  | 130.00                             | 144.00                             | 159.16                             | 1                    | 209.0                                | 1.9                        | 5                             |
| SMAJ150C                | XL                  | 150.00                             | 167.00                             | 204.11                             | 1                    | 269.0                                | 1.5                        | 5                             |
| SMAJ150CA               | XM                  | 150.00                             | 167.00                             | 184.58                             | 1                    | 243.0                                | 1.6                        | 5                             |
| SMAJ160C                | XN                  | 160.00                             | 178.00                             | 217.56                             | 1                    | 287.0                                | 1.4                        | 5                             |
| SMAJ160CA               | XP                  | 160.00                             | 178.00                             | 196.74                             | 1                    | 259.0                                | 1.5                        | 5                             |
| SMAJ170C                | XG                  | 170.00                             | 189.00                             | 231.00                             | 1                    | 304.0                                | 1.3                        | 5                             |
| SMAJ170CA               | XR                  | 170.00                             | 189.00                             | 208.89                             | 1                    | 275.0                                | 1.4                        | 5                             |

"C" Suffix Designates Bi-directional Devices

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