

| SURFACE MOUNT<br>UNIDIRECTIONAL AND BIDIRECTIONAL<br>TRANSIENT VOLTAGE SUPPRESSORS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    | REVERSE VOLTAGE    - 5.0 to 170 Volts<br>POWER DISSIPATION   - 400 Watts                                                                                                                                                                                                                                                                                                                                                                        |       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| <div>FEATURES</div> <ul style="list-style-type: none"><li>● Rating to 200V VBR</li><li>● For surface mounted applications</li><li>● Reliable low cost construction utilizing molded plastic technique</li><li>● Plastic material has UL recognition 94V-0</li><li>● Typical IR less than 1μA above 10V</li><li>● Fast response time:typically less than 1.0ns for Uni-direction,less than 5.0ns fo Bi-direction,from 0 Volts to BV min</li></ul> <div>MECHANICAL DATA</div> <ul style="list-style-type: none"><li>● Case : Molded Plastic</li><li>● Polarity:by cathode band denotes uni-directional device<br/>none cathode band denotes bi-directional device</li><li>● Weight : 0.002 ounces, 0.053 grams</li></ul> |                    | <div>SMA</div> <p>Top View Dimensions:<br/>Left side: .062(1.60) and .055(1.40)<br/>Right side: .114(2.90) and .098(2.50)<br/>Bottom: .181(4.60) and .157(4.00)</p> <p>Side View Dimensions:<br/>Top: .103(2.62) and .079(2.00)<br/>Bottom: .060(1.52) and .030(0.76)<br/>Right side: .012(.305) and .006(.152)<br/>Bottom: .208(5.28) and .188(4.80)<br/>Far right: .008(.203) and .002(.051)</p> <p>Dimensions in inches and(millimeters)</p> |       |
| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |
| Rating at 25°C ambient temperature unless otherwise specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |
| Single phase, half wave ,60Hz, resistive or inductive load.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |
| For capacitive load, derate current by 20%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |
| CHARACTERISTICS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | SYMBOL             | VALUE                                                                                                                                                                                                                                                                                                                                                                                                                                           | UNIT  |
| Peak Power Dissipation at T <sub>A</sub> =25°C<br>TP=1ms (NOTE1,2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | P <sub>PK</sub>    | Minimum 400                                                                                                                                                                                                                                                                                                                                                                                                                                     | WATTS |
| Peak Forward Surge Current<br>8.3ms Single Half Sine-Wave<br>Super Imposed on Rated Load (JEDEC Method)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | I <sub>FSM</sub>   | 40                                                                                                                                                                                                                                                                                                                                                                                                                                              | AMPS  |
| Steady State Power Dissipation at T <sub>L</sub> =75°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | P <sub>M(AV)</sub> | 1.0                                                                                                                                                                                                                                                                                                                                                                                                                                             | WATTS |
| Maximum Instantaneous Forward Voltage<br>at 35A for Unidirectional Devices Only (NOTE3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | V <sub>F</sub>     | 3.5                                                                                                                                                                                                                                                                                                                                                                                                                                             | VOLTS |
| Operating Temperature Range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | T <sub>J</sub>     | -55 to + 150                                                                                                                                                                                                                                                                                                                                                                                                                                    | °C    |
| Storage Temperature Range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | T <sub>STG</sub>   | -55 to + 175                                                                                                                                                                                                                                                                                                                                                                                                                                    | °C    |
| NOTES:1. Non-repetitive current pulse ,per Fig. 3 and derated above T <sub>A</sub> =25°C per Fig. 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |
| 2. Thermal Resistance junction to Lead.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |
| 3. 8.3ms single half-wave duty cycle=4 pulses per minutes maximum (uni-directional units only).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |

# RATING AND CHARACTERISTIC CURVES

## SMAJ SERIES

FIG.1-PULSE DERATING CURVE

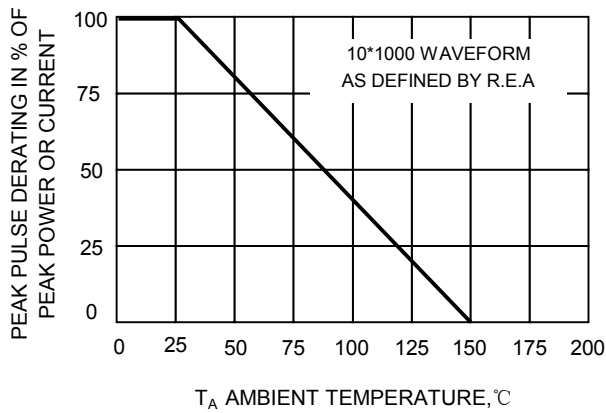


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

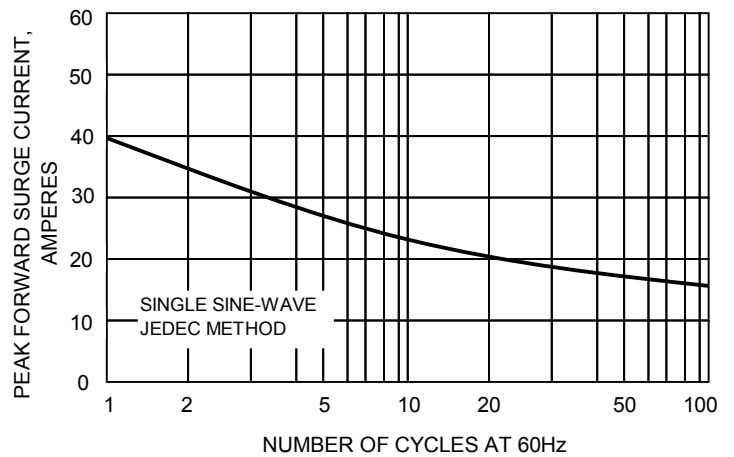


FIG.3-PULSE WAVEFORM

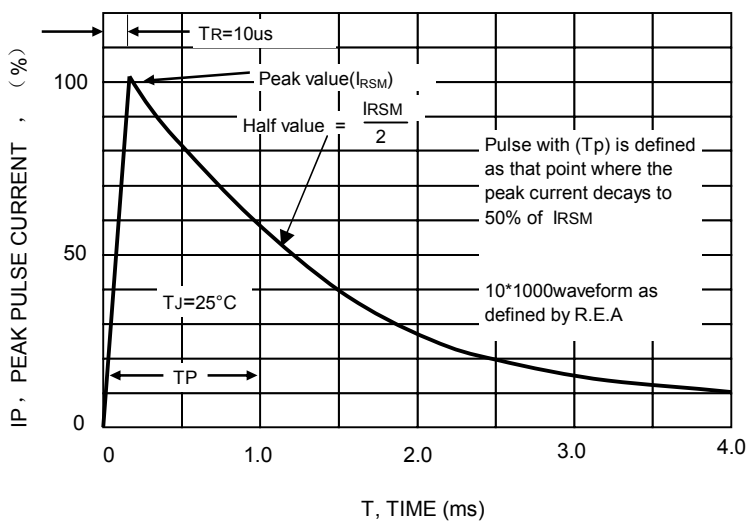


FIG.4-TYPICAL JUNCTION CAPACITANCE

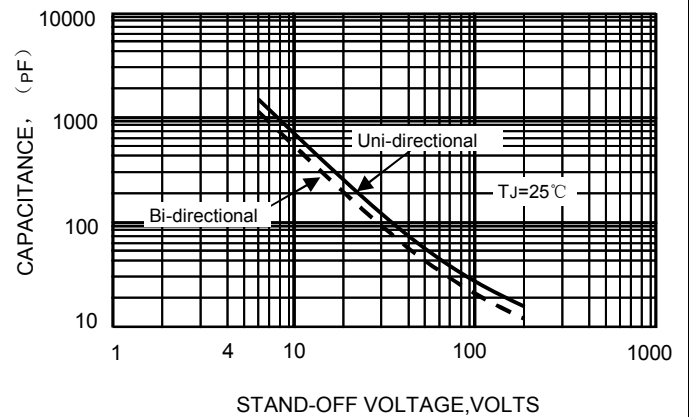


FIG.5-PULSE RATING CURVE

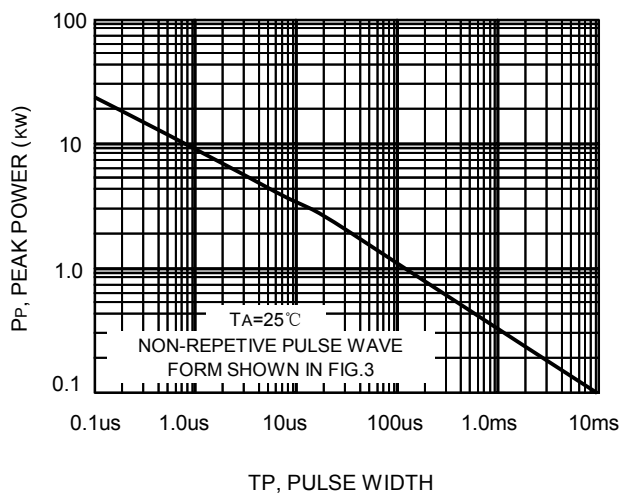
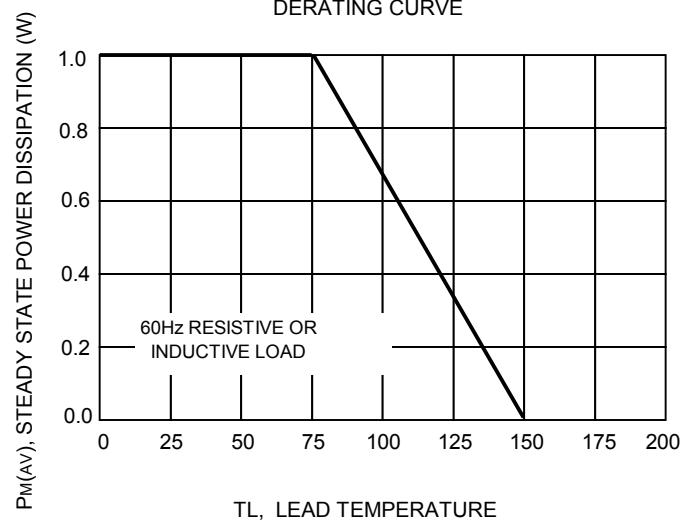


FIG.6-STEADY STATE POWER DERATING CURVE





## SMAJ SERIES

| Device<br>Uni-<br>directional | Device<br>Bi-<br>directional | Device Marking<br>code |      | Working Peak<br>Reverse Voltage | Breakdown<br>Voltage<br>VBR Volts |        |        | Maximum<br>Reverse Voltage<br>at IRSM<br>(Clamping<br>Voltage) | Maximum<br>Reverse Surge<br>Current | Maximum<br>Reverse<br>Leakage at<br>VRWM |
|-------------------------------|------------------------------|------------------------|------|---------------------------------|-----------------------------------|--------|--------|----------------------------------------------------------------|-------------------------------------|------------------------------------------|
|                               |                              | (UNI)                  | (BI) |                                 | VRWM (volts)                      | Min(V) | Max(V) | @ IT(mA)                                                       |                                     |                                          |
| SMAJ5.0                       | SMAJ5.0C                     | HD                     | TD   | 5.0                             | 6.40                              | 7.30   | 10     | 9.6                                                            | 41.6                                | 800/1600                                 |
| SMAJ5.0A                      | SMAJ5.0CA                    | HE                     | TE   | 5.0                             | 6.40                              | 7.00   | 10     | 9.2                                                            | 43.5                                | 800/1600                                 |
| SMAJ6.0                       | SMAJ6.0C                     | HF                     | TF   | 6.0                             | 6.67                              | 8.15   | 10     | 11.4                                                           | 35.1                                | 800/1600                                 |
| SMAJ6.0A                      | SMAJ6.0CA                    | HG                     | TG   | 6.0                             | 6.67                              | 7.37   | 10     | 10.3                                                           | 38.8                                | 800/1600                                 |
| SMAJ6.5                       | SMAJ6.5C                     | HH                     | TH   | 6.5                             | 7.22                              | 8.82   | 10     | 12.3                                                           | 32.5                                | 500/1000                                 |
| SMAJ6.5A                      | SMAJ6.5CA                    | HK                     | TK   | 6.5                             | 7.22                              | 7.98   | 10     | 11.2                                                           | 35.7                                | 500/1000                                 |
| SMAJ7.0                       | SMAJ7.0C                     | HL                     | TL   | 7.0                             | 7.78                              | 9.51   | 10     | 13.3                                                           | 30.1                                | 200/400                                  |
| SMAJ7.0A                      | SMAJ7.0CA                    | HM                     | TM   | 7.0                             | 7.78                              | 8.60   | 10     | 12.0                                                           | 33.3                                | 200/400                                  |
| SMAJ7.5                       | SMAJ7.5C                     | HN                     | TN   | 7.5                             | 8.33                              | 10.30  | 1.0    | 14.3                                                           | 28.0                                | 100/200                                  |
| SMAJ7.5A                      | SMAJ7.5CA                    | HP                     | TP   | 7.5                             | 8.33                              | 9.21   | 1.0    | 12.9                                                           | 31.0                                | 100/200                                  |
| SMAJ8.0                       | SMAJ8.0C                     | HQ                     | TQ   | 8.0                             | 8.89                              | 10.90  | 1.0    | 15.0                                                           | 26.5                                | 50/100                                   |
| SMAJ8.0A                      | SMAJ8.0CA                    | HR                     | TR   | 8.0                             | 8.89                              | 9.83   | 1.0    | 13.6                                                           | 29.4                                | 50/100                                   |
| SMAJ8.5                       | SMAJ8.5C                     | HS                     | TS   | 8.5                             | 9.44                              | 11.50  | 1.0    | 15.9                                                           | 25.1                                | 10/20                                    |
| SMAJ8.5A                      | SMAJ8.5CA                    | HT                     | TT   | 8.5                             | 9.44                              | 10.40  | 1.0    | 14.4                                                           | 27.7                                | 10/20                                    |
| SMAJ9.0                       | SMAJ9.0C                     | HU                     | TU   | 9.0                             | 10.00                             | 12.20  | 1.0    | 16.9                                                           | 23.6                                | 5/10                                     |
| SMAJ9.0A                      | SMAJ9.0CA                    | HV                     | TV   | 9.0                             | 10.00                             | 11.10  | 1.0    | 15.4                                                           | 26.0                                | 5/10                                     |
| SMAJ10                        | SMAJ10C                      | HW                     | TW   | 10.0                            | 11.10                             | 13.60  | 1.0    | 18.8                                                           | 21.2                                | 5/10                                     |
| SMAJ10A                       | SMAJ10CA                     | HX                     | TX   | 10.0                            | 11.10                             | 12.30  | 1.0    | 17.0                                                           | 23.5                                | 5/10                                     |
| SMAJ11                        | SMAJ11C                      | HY                     | TY   | 11.0                            | 12.20                             | 14.90  | 1.0    | 20.1                                                           | 20.0                                | 5.0                                      |
| SMAJ11A                       | SMAJ11CA                     | HZ                     | TZ   | 11.0                            | 12.20                             | 13.50  | 1.0    | 18.2                                                           | 22.0                                | 5.0                                      |
| SMAJ12                        | SMAJ12C                      | ID                     | UD   | 12.0                            | 13.30                             | 16.30  | 1.0    | 22.0                                                           | 18.1                                | 5.0                                      |
| SMAJ12A                       | SMAJ12CA                     | IE                     | UE   | 12.0                            | 13.30                             | 14.70  | 1.0    | 19.9                                                           | 20.1                                | 5.0                                      |
| SMAJ13                        | SMAJ13C                      | IF                     | UF   | 13.0                            | 14.40                             | 17.60  | 1.0    | 23.8                                                           | 16.8                                | 5.0                                      |
| SMAJ13A                       | SMAJ13CA                     | IG                     | UG   | 13.0                            | 14.40                             | 15.90  | 1.0    | 21.5                                                           | 18.6                                | 5.0                                      |
| SMAJ14                        | SMAJ14C                      | IH                     | UH   | 14.0                            | 15.60                             | 19.10  | 1.0    | 25.8                                                           | 15.5                                | 5.0                                      |
| SMAJ14A                       | SMAJ14CA                     | IK                     | UK   | 14.0                            | 15.60                             | 17.20  | 1.0    | 23.2                                                           | 17.2                                | 5.0                                      |
| SMAJ15                        | SMAJ15C                      | IL                     | UL   | 15.0                            | 16.70                             | 20.40  | 1.0    | 26.9                                                           | 14.8                                | 5.0                                      |
| SMAJ15A                       | SMAJ15CA                     | IM                     | UM   | 15.0                            | 16.70                             | 18.50  | 1.0    | 24.4                                                           | 16.4                                | 5.0                                      |
| SMAJ16                        | SMAJ16C                      | IN                     | UN   | 16.0                            | 17.80                             | 21.80  | 1.0    | 28.8                                                           | 13.8                                | 5.0                                      |
| SMAJ16A                       | SMAJ16CA                     | IP                     | UP   | 16.0                            | 17.80                             | 19.70  | 1.0    | 26.0                                                           | 15.3                                | 5.0                                      |
| SMAJ17                        | SMAJ17C                      | IQ                     | UQ   | 17.0                            | 18.90                             | 23.10  | 1.0    | 30.5                                                           | 13.1                                | 5.0                                      |
| SMAJ17A                       | SMAJ17CA                     | IR                     | UR   | 17.0                            | 18.90                             | 20.90  | 1.0    | 27.6                                                           | 14.5                                | 5.0                                      |
| SMAJ18                        | SMAJ18C                      | IS                     | US   | 18.0                            | 20.00                             | 24.40  | 1.0    | 32.2                                                           | 12.4                                | 5.0                                      |
| SMAJ18A                       | SMAJ18CA                     | IT                     | UT   | 18.0                            | 20.00                             | 22.10  | 1.0    | 29.2                                                           | 13.7                                | 5.0                                      |
| SMAJ20                        | SMAJ20C                      | IU                     | UU   | 20.0                            | 22.20                             | 27.10  | 1.0    | 35.8                                                           | 11.1                                | 5.0                                      |
| SMAJ20A                       | SMAJ20CA                     | IV                     | UV   | 20.0                            | 22.20                             | 24.50  | 1.0    | 32.4                                                           | 12.3                                | 5.0                                      |
| SMAJ22                        | SMAJ22C                      | IW                     | UW   | 22.0                            | 24.40                             | 29.80  | 1.0    | 39.4                                                           | 10.1                                | 5.0                                      |
| SMAJ22A                       | SMAJ22CA                     | IX                     | UX   | 22.0                            | 24.40                             | 26.90  | 1.0    | 35.5                                                           | 11.2                                | 5.0                                      |
| SMAJ24                        | SMAJ24C                      | IY                     | UY   | 24.0                            | 26.70                             | 32.60  | 1.0    | 43.0                                                           | 9.3                                 | 5.0                                      |
| SMAJ24A                       | SMAJ24CA                     | IZ                     | UZ   | 24.0                            | 26.70                             | 29.50  | 1.0    | 38.9                                                           | 10.3                                | 5.0                                      |
| SMAJ26                        | SMAJ26C                      | JD                     | VD   | 26.0                            | 28.90                             | 35.30  | 1.0    | 46.6                                                           | 8.6                                 | 5.0                                      |
| SMAJ26A                       | SMAJ26CA                     | JE                     | VE   | 26.0                            | 28.90                             | 31.90  | 1.0    | 42.1                                                           | 9.5                                 | 5.0                                      |
| SMAJ28                        | SMAJ28C                      | JF                     | VF   | 28.0                            | 31.10                             | 38.00  | 1.0    | 50.0                                                           | 8.0                                 | 5.0                                      |
| SMAJ28A                       | SMAJ28CA                     | JG                     | VG   | 28.0                            | 31.10                             | 34.40  | 1.0    | 45.4                                                           | 8.8                                 | 5.0                                      |
| SMAJ30                        | SMAJ30C                      | JH                     | VH   | 30.0                            | 33.30                             | 40.70  | 1.0    | 53.5                                                           | 7.5                                 | 5.0                                      |
| SMAJ30A                       | SMAJ30CA                     | JK                     | VK   | 30.0                            | 33.30                             | 36.80  | 1.0    | 48.4                                                           | 8.3                                 | 5.0                                      |
| SMAJ33                        | SMAJ33C                      | JL                     | VL   | 33.0                            | 36.70                             | 44.90  | 1.0    | 59.0                                                           | 6.8                                 | 5.0                                      |
| SMAJ33A                       | SMAJ33CA                     | JM                     | VM   | 33.0                            | 36.70                             | 40.60  | 1.0    | 53.3                                                           | 7.5                                 | 5.0                                      |

# SMAJ SERIES

| Device Uni-directional | Device Bi-directional | Device Marking code |      | Working Peak Reverse Voltage | Breakdown Voltage VBR Volts |        |          | Maximum Reverse Voltage at IRSM (Clamping Voltage) | Maximum Reverse Surge Current | Maximum Reverse Leakage at VRWM |
|------------------------|-----------------------|---------------------|------|------------------------------|-----------------------------|--------|----------|----------------------------------------------------|-------------------------------|---------------------------------|
|                        |                       | (UNI)               | (BI) |                              | Min(V)                      | Max(V) | @ IT(mA) |                                                    |                               |                                 |
| SMAJ36                 | SMAJ36C               | JN                  | VN   | 36.0                         | 40.0                        | 48.9   | 1.0      | 64.3                                               | 6.2                           | 5.0                             |
| SMAJ36A                | SMAJ36CA              | JP                  | VP   | 36.0                         | 40.0                        | 44.2   | 1.0      | 58.1                                               | 6.9                           | 5.0                             |
| SMAJ40                 | SMAJ40C               | JQ                  | VQ   | 40.0                         | 44.4                        | 54.3   | 1.0      | 71.4                                               | 5.6                           | 5.0                             |
| SMAJ40A                | SMAJ40CA              | JR                  | VR   | 40.0                         | 44.4                        | 49.1   | 1.0      | 64.5                                               | 6.2                           | 5.0                             |
| SMAJ43                 | SMAJ43C               | JS                  | VS   | 43.0                         | 47.8                        | 58.4   | 1.0      | 76.7                                               | 5.2                           | 5.0                             |
| SMAJ43A                | SMAJ43CA              | JT                  | VT   | 43.0                         | 47.8                        | 52.8   | 1.0      | 69.4                                               | 5.7                           | 5.0                             |
| SMAJ45                 | SMAJ45C               | JU                  | VU   | 45.0                         | 50.0                        | 61.1   | 1.0      | 80.3                                               | 5.0                           | 5.0                             |
| SMAJ45A                | SMAJ45CA              | JV                  | VV   | 45.0                         | 50.0                        | 55.3   | 1.0      | 72.7                                               | 5.5                           | 5.0                             |
| SMAJ48                 | SMAJ48C               | JW                  | VW   | 48.0                         | 53.3                        | 65.1   | 1.0      | 85.5                                               | 4.7                           | 5.0                             |
| SMAJ48A                | SMAJ48CA              | JX                  | VX   | 48.0                         | 53.3                        | 58.9   | 1.0      | 77.4                                               | 5.2                           | 5.0                             |
| SMAJ51                 | SMAJ51C               | JY                  | VY   | 51.0                         | 56.7                        | 69.3   | 1.0      | 91.1                                               | 4.4                           | 5.0                             |
| SMAJ51A                | SMAJ51CA              | JZ                  | VZ   | 51.0                         | 56.7                        | 62.7   | 1.0      | 82.4                                               | 4.9                           | 5.0                             |
| SMAJ54                 | SMAJ54C               | RD                  | WD   | 54.0                         | 60.0                        | 73.3   | 1.0      | 96.3                                               | 4.2                           | 5.0                             |
| SMAJ54A                | SMAJ54CA              | RE                  | WE   | 54.0                         | 60.0                        | 66.3   | 1.0      | 87.1                                               | 4.6                           | 5.0                             |
| SMAJ58                 | SMAJ58C               | RF                  | WF   | 58.0                         | 64.4                        | 78.7   | 1.0      | 103.0                                              | 3.9                           | 5.0                             |
| SMAJ58A                | SMAJ58CA              | RG                  | WG   | 58.0                         | 64.4                        | 71.2   | 1.0      | 93.6                                               | 4.3                           | 5.0                             |
| SMAJ60                 | SMAJ60C               | RH                  | WH   | 60.0                         | 66.7                        | 81.5   | 1.0      | 107.0                                              | 3.7                           | 5.0                             |
| SMAJ60A                | SMAJ60CA              | RK                  | WK   | 60.0                         | 66.7                        | 73.7   | 1.0      | 96.8                                               | 4.1                           | 5.0                             |
| SMAJ64                 | SMAJ64C               | RL                  | WL   | 64.0                         | 71.1                        | 86.4   | 1.0      | 114.0                                              | 3.5                           | 5.0                             |
| SMAJ64A                | SMAJ64CA              | RM                  | WM   | 64.0                         | 71.1                        | 78.6   | 1.0      | 103.0                                              | 3.9                           | 5.0                             |
| SMAJ70                 | SMAJ70C               | RN                  | WN   | 70.0                         | 77.8                        | 95.1   | 1.0      | 125.0                                              | 3.2                           | 5.0                             |
| SMAJ70A                | SMAJ70CA              | RP                  | WP   | 70.0                         | 77.8                        | 86.0   | 1.0      | 113.0                                              | 3.5                           | 5.0                             |
| SMAJ75                 | SMAJ75C               | RQ                  | WQ   | 75.0                         | 83.3                        | 102.0  | 1.0      | 134.0                                              | 3.0                           | 5.0                             |
| SMAJ75A                | SMAJ75CA              | RR                  | WR   | 75.0                         | 83.3                        | 92.1   | 1.0      | 121.0                                              | 3.3                           | 5.0                             |
| SMAJ78                 | SMAJ78C               | RS                  | WS   | 78.0                         | 86.7                        | 106.0  | 1.0      | 139.0                                              | 2.9                           | 5.0                             |
| SMAJ78A                | SMAJ78CA              | RT                  | WT   | 78.0                         | 86.7                        | 95.8   | 1.0      | 126.0                                              | 3.2                           | 5.0                             |
| SMAJ85                 | SMAJ85C               | RU                  | WU   | 85.0                         | 94.4                        | 115.0  | 1.0      | 151.0                                              | 2.6                           | 5.0                             |
| SMAJ85A                | SMAJ85CA              | RV                  | WV   | 85.0                         | 94.4                        | 104.0  | 1.0      | 137.0                                              | 2.9                           | 5.0                             |
| SMAJ90                 | SMAJ90C               | RW                  | WW   | 90.0                         | 100.0                       | 122.0  | 1.0      | 160.0                                              | 2.5                           | 5.0                             |
| SMAJ90A                | SMAJ90CA              | RX                  | WX   | 90.0                         | 100.0                       | 111.0  | 1.0      | 146.0                                              | 2.7                           | 5.0                             |
| SMAJ100                | SMAJ100C              | RY                  | WY   | 100.0                        | 111.0                       | 136.0  | 1.0      | 179.0                                              | 2.2                           | 5.0                             |
| SMAJ100A               | SMAJ100CA             | RZ                  | WZ   | 100.0                        | 111.0                       | 123.0  | 1.0      | 162.0                                              | 2.5                           | 5.0                             |
| SMAJ110                | SMAJ110C              | SD                  | XD   | 110.0                        | 122.0                       | 149.0  | 1.0      | 196.0                                              | 2.0                           | 5.0                             |
| SMAJ110A               | SMAJ110CA             | SE                  | XE   | 110.0                        | 122.0                       | 135.0  | 1.0      | 177.0                                              | 2.3                           | 5.0                             |
| SMAJ120                | SMAJ120C              | SF                  | XF   | 120.0                        | 133.0                       | 163.0  | 1.0      | 214.0                                              | 1.9                           | 5.0                             |
| SMAJ120A               | SMAJ120CA             | SG                  | XG   | 120.0                        | 133.0                       | 147.0  | 1.0      | 193.0                                              | 2.0                           | 5.0                             |
| SMAJ130                | SMAJ130C              | SH                  | XH   | 130.0                        | 144.0                       | 176.0  | 1.0      | 231.0                                              | 1.7                           | 5.0                             |
| SMAJ130A               | SMAJ130CA             | SK                  | XK   | 130.0                        | 144.0                       | 159.0  | 1.0      | 209.0                                              | 1.9                           | 5.0                             |
| SMAJ150                | SMAJ150C              | SL                  | XL   | 150.0                        | 167.0                       | 204.0  | 1.0      | 268.0                                              | 1.5                           | 5.0                             |
| SMAJ150A               | SMAJ150CA             | SM                  | XM   | 150.0                        | 167.0                       | 185.0  | 1.0      | 243.0                                              | 1.6                           | 5.0                             |
| SMAJ160                | SMAJ160C              | SN                  | XN   | 160.0                        | 178.0                       | 218.0  | 1.0      | 287.0                                              | 1.4                           | 5.0                             |
| SMAJ160A               | SMAJ160CA             | SP                  | XP   | 160.0                        | 178.0                       | 197.0  | 1.0      | 259.0                                              | 1.5                           | 5.0                             |
| SMAJ170                | SMAJ170C              | SQ                  | XQ   | 170.0                        | 189.0                       | 231.0  | 1.0      | 304.0                                              | 1.3                           | 5.0                             |
| SMAJ170A               | SMAJ170CA             | SR                  | XR   | 170.0                        | 189.0                       | 209.0  | 1.0      | 275.0                                              | 1.4                           | 5.0                             |

NOTE: For bidirectional use C or CA suffix for types SMAJ5.0 thru types SMAJ170(ex. SMAJ5.0C, SMAJ170CA).

Electrical characteristics apply in both directions.

The later codes(/TD thru /XR) denote by bidirectional material.