



Features

- Glass passivated chip
- 1500 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard

Mechanical Data

- Case: DO214AB/(SMC) Molded plastic
- Lead: Solderable per MIL-STD-750, method 2026
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any

Maximum Ratings & Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter | Symbols | Value | Unit |
|--|----------------|----------------|------|
| Peak power dissipation with a 10/1000 us waveform ⁽¹⁾ | P_{PP} | 1500 | W |
| Peak pulse current with a 10/1000 us waveform ⁽¹⁾ | I_{PP} | See Next Table | A |
| Power dissipation on infinite heatsink at $T_L = 75\text{ }^\circ\text{C}$ | P_D | 5.0 | W |
| Peak forward surge current, 8.3 ms single half sinewave unidirectional only ⁽²⁾ | I_{FSM} | 200 | A |
| Maximum instantaneous forward voltage at 100 A for unidirectional only ⁽³⁾ | V_F | 3.5/6.5 | V |
| Operating junction and storage temperature range | T_J, T_{STG} | -55 to +150 | °C |

Note:

1) Non-repetitive current pulse per Fig.5 and derated above $T_A = 25\text{ }^\circ\text{C}$ per Fig.1 ;

2) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum ;

3) $V_F < 3.5\text{V}$ for devices of $V_{BR} < 200\text{V}$ and $V_F < 6.5\text{V}$ for devices of $V_{BR} > 201\text{V}$.



SMCJxx(C)A Series

| Part Number | | Device Marking Code | | Reverse Stand-off Voltage | Breakdown Voltage $V_{BR} @ I_T$ | | Test Current | Max. Clamping Voltage @ I_{PP} | Max. Peak Pulse Current | Max. Reverse Leakage @ V_{RWM} |
|-------------|-----------|---------------------|-----|---------------------------|----------------------------------|---------|--------------|----------------------------------|-------------------------|----------------------------------|
| UNI-POLAR | BI-POLAR | UNI | BI | $V_{RWM}(V)$ | Min.(V) | Max.(V) | $I_T(mA)$ | $V_{C MAX.}(V)$ | $I_{PP}(A)$ | $I_R(\mu A)$ |
| SMCJ5.0A | SMCJ5.0CA | GDE | BDE | 5.0 | 6.40 | 7.00 | 10 | 9.2 | 163.0 | 800 |
| SMCJ6.0A | SMCJ6.0CA | GDG | BDG | 6.0 | 6.67 | 7.37 | 10 | 10.3 | 145.6 | 800 |
| SMCJ6.5A | SMCJ6.5CA | GDK | BDK | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 133.9 | 500 |
| SMCJ7.0A | SMCJ7.0CA | GDM | BDM | 7.0 | 7.78 | 8.60 | 10 | 12.0 | 125.0 | 200 |
| SMCJ7.5A | SMCJ7.5CA | GDP | BDP | 7.5 | 8.33 | 9.21 | 1 | 12.9 | 116.3 | 100 |
| SMCJ8.0A | SMCJ8.0CA | GDR | BDR | 8.0 | 8.89 | 9.83 | 1 | 13.6 | 110.3 | 50 |
| SMCJ8.5A | SMCJ8.5CA | GDT | BDT | 8.5 | 9.44 | 10.40 | 1 | 14.4 | 104.2 | 20 |
| SMCJ9.0A | SMCJ9.0CA | GDV | BDV | 9.0 | 10.00 | 11.10 | 1 | 15.4 | 97.40 | 10 |
| SMCJ10A | SMCJ10CA | GDX | BDX | 10.0 | 11.10 | 12.30 | 1 | 17.0 | 88.24 | 5 |
| SMCJ11A | SMCJ11CA | GDZ | BDZ | 11.0 | 12.20 | 13.50 | 1 | 18.2 | 82.42 | 1 |
| SMCJ12A | SMCJ12CA | GEE | BEE | 12.0 | 13.30 | 14.70 | 1 | 19.9 | 75.38 | 1 |
| SMCJ13A | SMCJ13CA | GEG | BEG | 13.0 | 14.40 | 15.90 | 1 | 21.5 | 69.77 | 1 |
| SMCJ14A | SMCJ14CA | GEK | BEK | 14.0 | 15.60 | 17.20 | 1 | 23.2 | 64.66 | 1 |
| SMCJ15A | SMCJ15CA | GEM | BEM | 15.0 | 16.70 | 18.50 | 1 | 24.4 | 61.48 | 1 |
| SMCJ16A | SMCJ16CA | GEP | BEP | 16.0 | 17.80 | 19.70 | 1 | 26.0 | 57.69 | 1 |
| SMCJ17A | SMCJ17CA | GER | BER | 17.0 | 18.90 | 20.90 | 1 | 27.6 | 54.35 | 1 |
| SMCJ18A | SMCJ18CA | GET | BET | 18.0 | 20.00 | 22.10 | 1 | 29.2 | 51.37 | 1 |
| SMCJ20A | SMCJ20CA | GEV | BEV | 20.0 | 22.20 | 24.50 | 1 | 32.4 | 46.30 | 1 |
| SMCJ22A | SMCJ22CA | GEX | BEX | 22.0 | 24.40 | 26.90 | 1 | 35.5 | 42.25 | 1 |
| SMCJ24A | SMCJ24CA | GEZ | BEZ | 24.0 | 26.70 | 29.50 | 1 | 38.9 | 38.56 | 1 |
| SMCJ26A | SMCJ26CA | GFE | BFE | 26.0 | 28.90 | 31.90 | 1 | 42.1 | 35.63 | 1 |
| SMCJ28A | SMCJ28CA | GFG | BFG | 28.0 | 31.10 | 34.40 | 1 | 45.4 | 33.04 | 1 |
| SMCJ30A | SMCJ30CA | GFK | BFK | 30.0 | 33.50 | 36.80 | 1 | 48.4 | 30.99 | 1 |
| SMCJ33A | SMCJ33CA | GFM | BFM | 33.0 | 36.70 | 40.60 | 1 | 53.3 | 28.14 | 1 |
| SMCJ36A | SMCJ36CA | GFP | BFP | 36.0 | 40.00 | 44.20 | 1 | 58.1 | 25.82 | 1 |
| SMCJ40A | SMCJ40CA | GFR | BFR | 40.0 | 44.40 | 49.10 | 1 | 64.5 | 23.26 | 1 |
| SMCJ43A | SMCJ43CA | GFT | BFT | 43.0 | 47.80 | 52.80 | 1 | 69.4 | 21.61 | 1 |
| SMCJ45A | SMCJ45CA | GFV | BFV | 45.0 | 50.00 | 55.30 | 1 | 72.7 | 20.63 | 1 |
| SMCJ48A | SMCJ48CA | GFX | BFX | 48.0 | 53.30 | 58.90 | 1 | 77.4 | 19.38 | 1 |
| SMCJ51A | SMCJ51CA | GFZ | BFZ | 51.0 | 56.70 | 62.70 | 1 | 82.4 | 18.20 | 1 |
| SMCJ54A | SMCJ54CA | GGE | BGE | 54.0 | 60.00 | 66.30 | 1 | 87.1 | 17.22 | 1 |
| SMCJ58A | SMCJ58CA | GGG | BGG | 58.0 | 64.40 | 71.20 | 1 | 93.6 | 16.03 | 1 |
| SMCJ60A | SMCJ60CA | GGK | BGK | 60.0 | 66.70 | 73.70 | 1 | 96.8 | 15.50 | 1 |
| SMCJ64A | SMCJ64CA | GGM | BGM | 64.0 | 71.10 | 78.60 | 1 | 103.0 | 14.56 | 1 |
| SMCJ70A | SMCJ70CA | GGP | BGP | 70.0 | 77.80 | 86.00 | 1 | 113.0 | 13.27 | 1 |
| SMCJ75A | SMCJ75CA | GGR | BGR | 75.0 | 83.30 | 92.10 | 1 | 121.0 | 12.40 | 1 |
| SMCJ78A | SMCJ78CA | GGT | BGT | 78.0 | 86.70 | 95.80 | 1 | 126.0 | 11.90 | 1 |
| SMCJ85A | SMCJ85CA | GGV | BGV | 85.0 | 94.4 | 104.0 | 1 | 137.0 | 10.95 | 1 |
| SMCJ90A | SMCJ90CA | GGX | BGX | 90.0 | 100.0 | 111.0 | 1 | 146.0 | 10.27 | 1 |
| SMCJ100A | SMCJ100CA | GGZ | BGZ | 100.0 | 111.0 | 123.0 | 1 | 162.0 | 9.26 | 1 |
| SMCJ110A | SMCJ110CA | GHE | BHE | 110.0 | 122.0 | 135.0 | 1 | 177.0 | 8.47 | 1 |
| SMCJ120A | SMCJ120CA | GHG | BHG | 120.0 | 133.0 | 147.0 | 1 | 193.0 | 7.77 | 1 |
| SMCJ130A | SMCJ130CA | GHK | BHK | 130.0 | 144.0 | 159.0 | 1 | 209.0 | 7.18 | 1 |
| SMCJ150A | SMCJ150CA | GHM | BHM | 150.0 | 167.0 | 185.0 | 1 | 243.0 | 6.17 | 1 |
| SMCJ160A | SMCJ160CA | GHP | BHP | 160.0 | 178.0 | 197.0 | 1 | 259.0 | 5.79 | 1 |
| SMCJ170A | SMCJ170CA | GHR | BHR | 170.0 | 189.0 | 209.0 | 1 | 275.0 | 5.45 | 1 |
| SMCJ180A | SMCJ180CA | GHT | BHT | 180.0 | 201.0 | 222.0 | 1 | 292.0 | 5.14 | 1 |
| SMCJ190A | SMCJ190CA | GHU | BHU | 190.0 | 209.0 | 243.0 | 1 | 308.0 | 4.87 | 1 |
| SMCJ200A | SMCJ200CA | GHV | BHV | 200.0 | 224.0 | 247.0 | 1 | 324.0 | 4.63 | 1 |
| SMCJ210A | SMCJ210CA | GHW | BHW | 210.0 | 231.0 | 268.0 | 1 | 340.0 | 4.41 | 1 |
| SMCJ220A | SMCJ220CA | GHX | BHX | 220.0 | 246.0 | 272.0 | 1 | 356.0 | 4.21 | 1 |
| SMCJ250A | SMCJ250CA | GHZ | BHZ | 250.0 | 279.0 | 309.0 | 1 | 405.0 | 3.70 | 1 |
| SMCJ300A | SMCJ300CA | GJE | BJE | 300.0 | 335.0 | 371.0 | 1 | 486.0 | 3.09 | 1 |
| SMCJ350A | SMCJ350CA | GJG | BJG | 350.0 | 391.0 | 432.0 | 1 | 567.0 | 2.65 | 1 |
| SMCJ400A | SMCJ400CA | GJK | BJK | 400.0 | 447.0 | 494.0 | 1 | 648.0 | 2.31 | 1 |
| SMCJ440A | SMCJ440CA | GJM | BJM | 440.0 | 492.0 | 543.0 | 1 | 713.0 | 2.10 | 1 |
| SMCJ480A | SMCJ480CA | GJP | BJP | 480.0 | 536.0 | 593.0 | 1 | 750.0 | 2.00 | 1 |
| SMCJ510A | SMCJ510CA | GJQ | BJQ | 510.0 | 570.0 | 630.0 | 1 | 758.0 | 1.98 | 1 |
| SMCJ520A | SMCJ520CA | GJR | BJR | 520.0 | 578.0 | 640.0 | 1 | 762.0 | 1.97 | 1 |
| SMCJ550A | SMCJ550CA | GJT | BJT | 550.0 | 615.0 | 680.0 | 1 | 860.0 | 1.74 | 1 |

Ratings and Characteristics Curves (TA=25°C unless otherwise noted)



Fig. 1 - Pulse Derating Curve

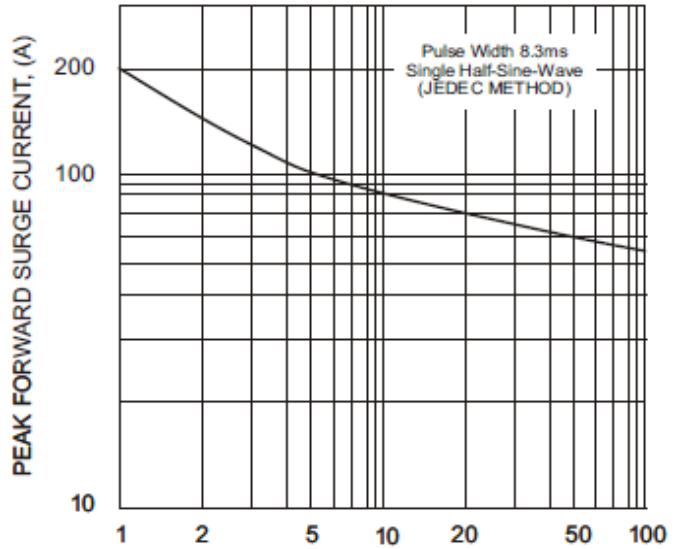


Fig. 2 - Maximum Non-Repetitive Surge Current



Fig. 3 - Steady State Power Derating Curve



Fig.4 Peak Pulse Power Rating

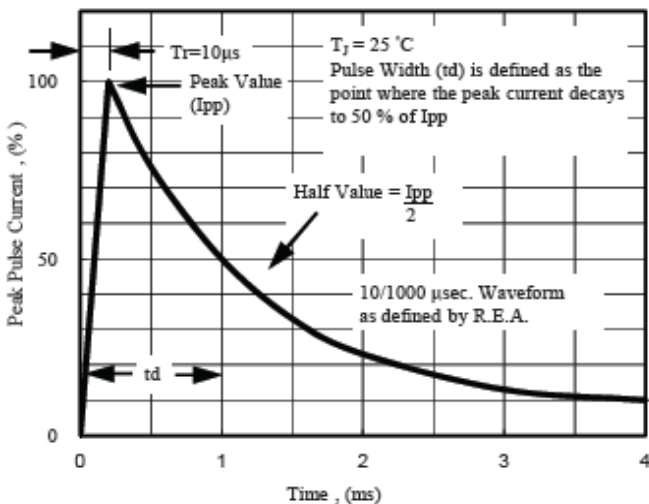


Fig. 5 - Pulse Waveform

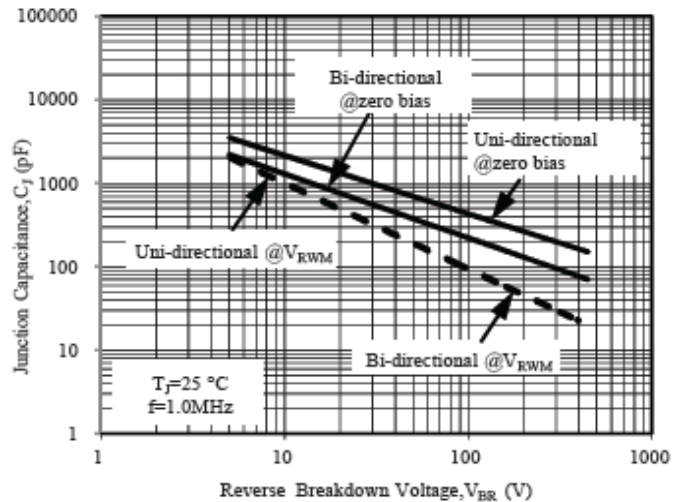


Fig. 6 - Typical Junction Capacitance

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