## Maximum Ratings (@$T_A$ = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power Dissipation (Note 5) | $P_{PK}$ | 3000 | W |
| Peak Forward Surge Current, 8.3ms<br>Single Half Sine Wave Superimposed on Rated Load (Notes 6 & 7) | $I_{FSM}$ | 300 | A |

## Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | -55 to +175 | °C |

## Electrical Characteristics (@$T_A$ = +25°C unless otherwise specified.)

| Part Number | Reverse Standoff Voltage | Breakdown Voltage $V_{BR}$ @ $I_T$ (Note 8) | | Test Current | Max. Reverse Leakage @ $V_{RWM}$ | Max Clamping Voltage @ $I_{PP}$ | Max Peak Pulse Current $I_{PP}$ | Typical Total Capacitance (Note 10) | Marking Code |
|---|---|---|---|---|---|---|---|---|---|
| See Notes 1 & 9 | $V_{RWM}$ (V) | Min (V) | Max (V) | $I_T$(mA) | $I_R$ (µA) | $V_C$ (V) | (A) | $C_T$ (pF) | |
| 3.0SMCJ5.0A | 5.0 | 6.40 | 7.07 | 10 | 1000 | 9.2 | 326.1 | 8,000 | HDE |
| 3.0SMCJ14A | 14.0 | 15.60 | 17.2 | 1.0 | 5.0 | 23.2 | 129.3 | 3,500 | HEK |
| 3.0SMCJ20A | 20.0 | 22.20 | 24.5 | 1.0 | 5.0 | 32.4 | 92.6 | 3,300 | HEV |
| 3.0SMCJ22A | 22.0 | 24.40 | 27.0 | 1.0 | 5.0 | 35.5 | 84.5 | 3,000 | HEX |
| 3.0SMCJ24A | 24.0 | 26.70 | 29.5 | 1.0 | 5.0 | 38.9 | 77.1 | 3,000 | HEZ |
| 3.0SMCJ28A | 28.0 | 31.10 | 34.4 | 1.0 | 5.0 | 45.4 | 66.1 | 1,800 | HFG |
| 3.0SMCJ30A | 30.0 | 33.30 | 36.8 | 1.0 | 5.0 | 48.4 | 62.0 | 1,700 | HFK |
| 3.0SMCJ58A | 58.0 | 64.40 | 71.2 | 1.0 | 5.0 | 93.6 | 32.1 | 1,500 | HGG |

Notes:
5. Non-repetitive current pulse, per Figure 4 and derated above $T_A$ = +25°C per Figure 1.
6. Mounted on 8.00mm$^2$ (0.013mm thick) land areas.
7. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
8. $V_{BR}$ measured with IT current pulse = 10 ~ 15 ms.
9. Additional voltages may be available upon request. Please contact the Diodes Incorporated sales department for assistance.
10. $V_R$ = 0V, f = 1MHz

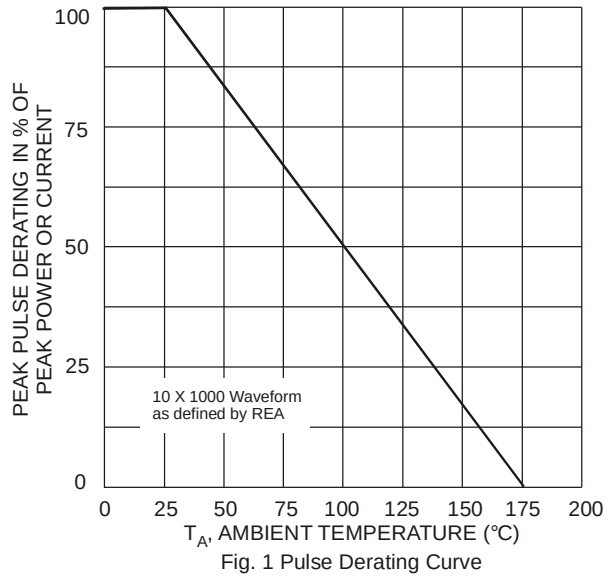


Fig. 1 Pulse Derating Curve

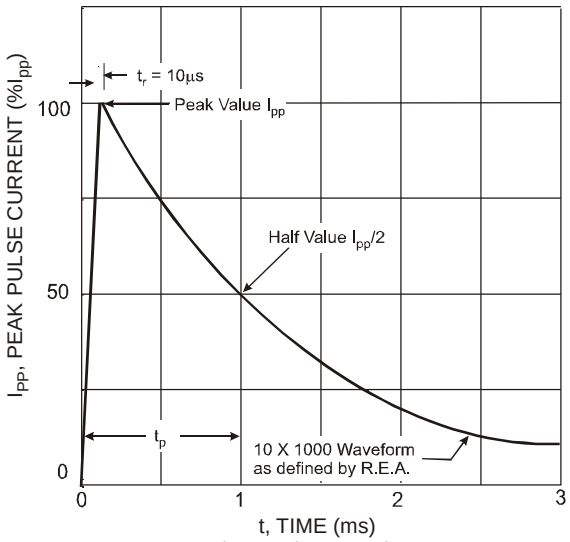


Fig. 2 Pulse Waveform

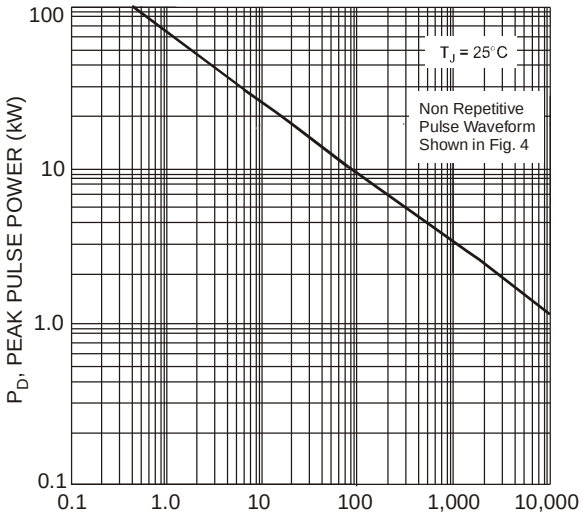


Fig. 3 Pulse Rating Curve

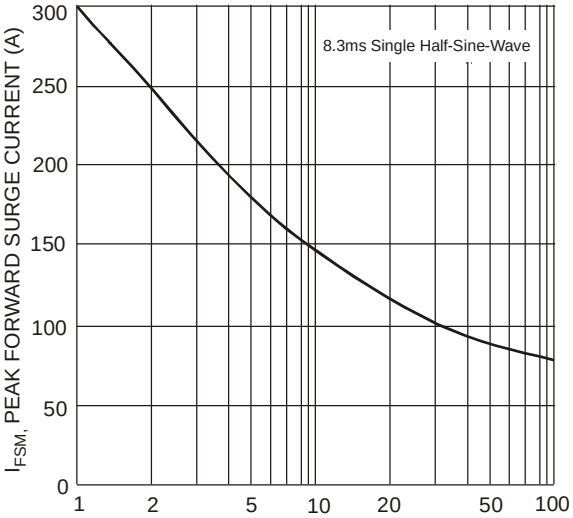
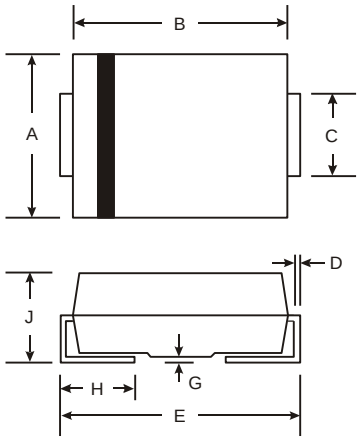


Fig. 4 Maximum Non-Repetitive Surge Current

## Package Outline Dimensions

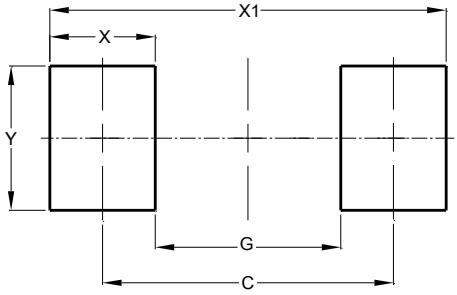
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.




| SMC | | |
|---|---|---|
| **Dim** | **Min** | **Max** |
| **A** | 5.59 | 6.22 |
| **B** | 6.60 | 7.11 |
| **C** | 2.75 | 3.18 |
| **D** | 0.15 | 0.31 |
| **E** | 7.75 | 8.13 |
| **G** | 0.10 | 0.20 |
| **H** | 0.76 | 1.52 |
| **J** | 2.00 | 2.50 |
| **All Dimensions in mm** | | |

## Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.




| Dimensions | Value (in mm) |
|---|---|
| **C** | 6.90 |
| **G** | 4.40 |
| **X** | 2.50 |
| **X1** | 9.40 |
| **Y** | 3.30 |

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