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

| Characteristic | Symbol | Value | Unit | Conditions |
|---|---|---|---|---|
| Peak Pulse Power Dissipation | $P_{PP}$ | 84 | W | 8/20µs, per Figure 2 |
| Peak Pulse Current | $I_{PP}$ | 6 | A | 8/20µs, per Figure 2 |
| ESD Protection – Contact Discharge | $V_{ESD\ Contact}$ | ±30 | kV | IEC 61000-4-2 Standard |
| ESD Protection – Air Discharge | $V_{ESD\ Air}$ | ±30 | kV | IEC 61000-4-2 Standard |

## Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Package Power Dissipation (Note 6) | $P_D$ | 275 | mW |
| Thermal Resistance, Junction to Ambient (Note 6) | $R_{\theta JA}$ | 454 | °C/W |
| Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | -65 to +150 | °C |

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

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Conditions |
|---|---|---|---|---|---|---|
| Reverse Standoff Voltage | $V_{RWM}$ | - | - | 5 | V | - |
| Channel Leakage Current (Note 7) | $I_{RM}$ | - | 10 | 100 | nA | $V_{RWM}$ = 5V |
| Clamping Voltage, Positive Transients | $V_{CL}$ | -<br>-<br>-<br>- | 7.0<br>8.7<br>10.5<br>11.5 | 9.0<br>10.7<br>12.0<br>14.0 | V | $I_{PP}$ = 1A, tp = 8/20µS<br>$I_{PP}$ = 3A, tp = 8/20µS<br>$I_{PP}$ = 5A, tp = 8/20µS<br>$I_{PP}$ = 6A, tp = 8/20µS |
| Breakdown Voltage | $V_{BR}$ | 6 | 7 | 8 | V | $I_R$ = 1mA |
| Differential Resistance | $R_{DIF}$ | - | 0.2 | - | Ω | $I_R$ = 1A, tp = 8/20µS |
| Channel Input Capacitance | $C_{IN}$ | - | 15 | 20 | pF | $V_R$ = 0V, f = 1MHz |

Notes: 6. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at http://www.diodes.com.
7. Short duration pulse test used to minimize self-heating effect.

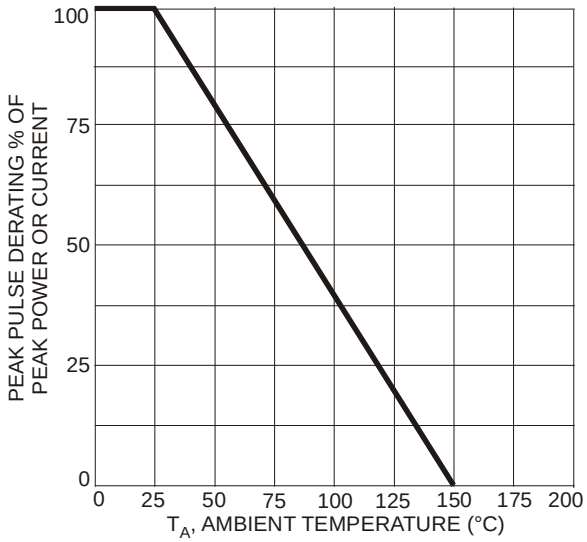


Fig. 1 Power Dissipation vs. Ambient Temperature

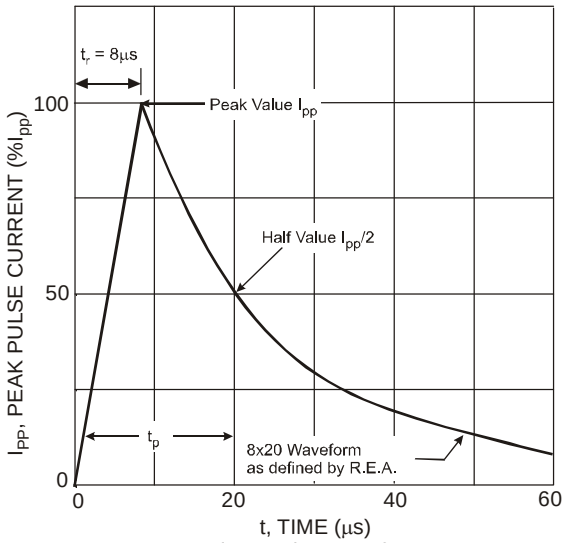


Fig. 2 Pulse Waveform

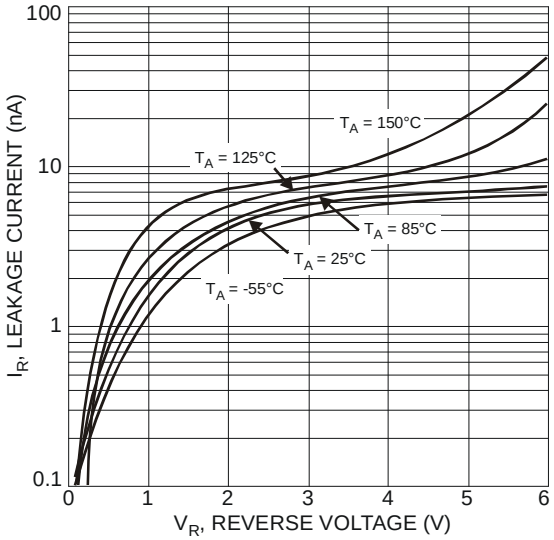



Fig. 3 Typical Reverse Characteristics

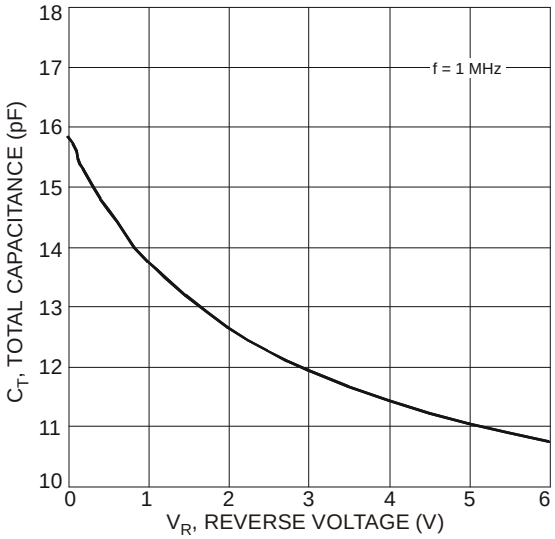



Fig. 4 Typical Total Capacitance vs. Reverse Voltage

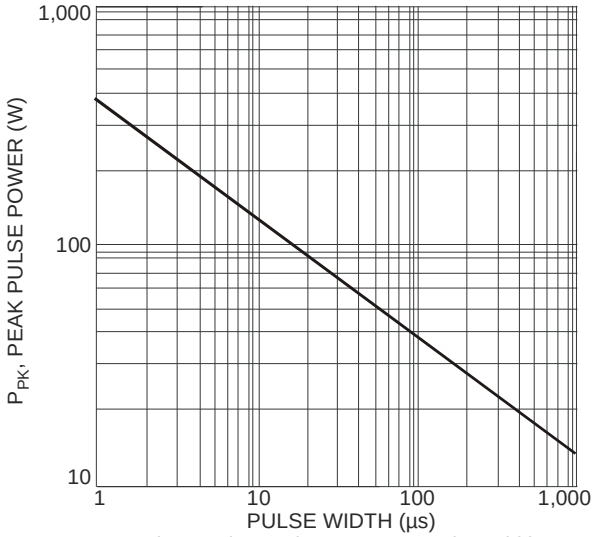
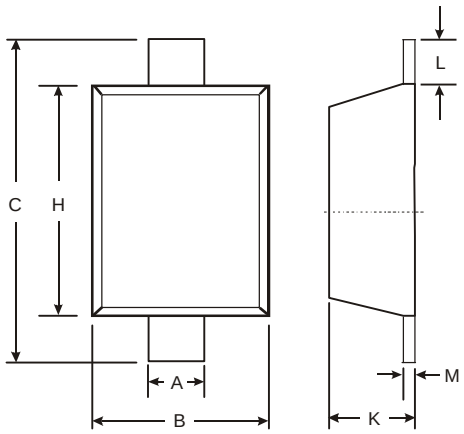



Fig. 5 Pulse Rating Curve vs. Pulse Width
Power is defined as $P_{PK} = V_C \times I_{PP}$

## Package Outline Dimensions

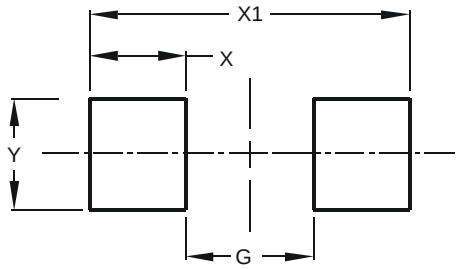
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.




| SOD523 | | |
|---|---|---|
| **Dim** | **Min** | **Max** |
| **A** | 0.25 | 0.35 |
| **B** | 0.70 | 0.90 |
| **C** | 1.50 | 1.70 |
| **H** | 1.10 | 1.30 |
| **K** | 0.55 | 0.65 |
| **L** | 0.10 | 0.30 |
| **M** | 0.10 | 0.12 |
| **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) |
|---|---|
| G | 0.80 |
| X | 0.60 |
| X1 | 2.00 |
| Y | 0.70 |