



THE DATASHEET OF
SD05-7



Features

- 350 Watts Peak Pulse Power ($t_p = 8 \times 20 \mu s$)
- IEC 61000-4-2 (ESD): Air – 15kV, Contact – 8kV
- IEC 61000-4-2 (ESD), HBM – 16kV
- IEC61000-4-4 (EFT): Level 4, 40A
- IEC61000-4-5 (Lightning): 24A
- Unidirectional Configuration
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOD323
- Case Material: Molded Plastic, "Green" Molding Compound, Note 3. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating) Solderable per MIL-STD-202, Method 208 ③
- Polarity: Cathode Band
- Weight: 0.005 grams (approximate)

SOD323



Top View


 1 = Cathode
2 = Anode

Device Schematic

Ordering Information (Note 4)

| Part Number | Case | Packaging |
|-------------|--------|------------------|
| SD05-7 | SOD323 | 3000/Tape & Reel |

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>

Marking Information



ZA = Product type marking code

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------|-------------|--------------|
| Peak Pulse Power ($t_p = 8 \times 20 \mu s$) (Note 5) $T_A = +25^\circ C$ | P_{pk} | 350 | W |
| Thermal Resistance, Junction to Ambient (Note 5) $T_A = +25^\circ C$ | $R_{\theta JA}$ | 625 | $^\circ C/W$ |
| Operating and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^\circ C$ |

Electrical Characteristics (@ $T_A = +25^\circ C$, unless otherwise specified.)

| Reverse Standoff Voltage | Breakdown Voltage $V_{BR} @ I_T$ | | Test Current I_T (mA) | Max. Reverse Leakage @ V_{RWM} (Note 6) I_R (μA) | Max. Clamping Voltage @ $I_{PP} = 5A$ (Note 7) V_C (V) | Max. Clamping Voltage $V_C @ I_{PP}$ (Note 7) | | Total Max Capacitance C_T $V_R = 0V$ $f = 1MHz$ (pF) | |
|--------------------------|----------------------------------|---------|-------------------------|---|--|---|--------------|--|-----|
| | Min (V) | Max (V) | | | | V_C (V) | I_{PP} (A) | | |
| V_{RWM} (V) | 5 | 6.2 | 7.3 | 1.0 | 10 | 9.8 | 14.5 | 24 | 350 |

- Notes:
5. Device mounted on FR-4 PC board with suggested pad layout, which can be found on our website at <http://www.diodes.com> Measured across pin 1 and pin 2.
 6. Short duration pulse test used to minimize self-heating effect.
 7. Clamping voltage value is based on an $8 \times 20 \mu s$ peak pulse current (I_{pp}) waveform.

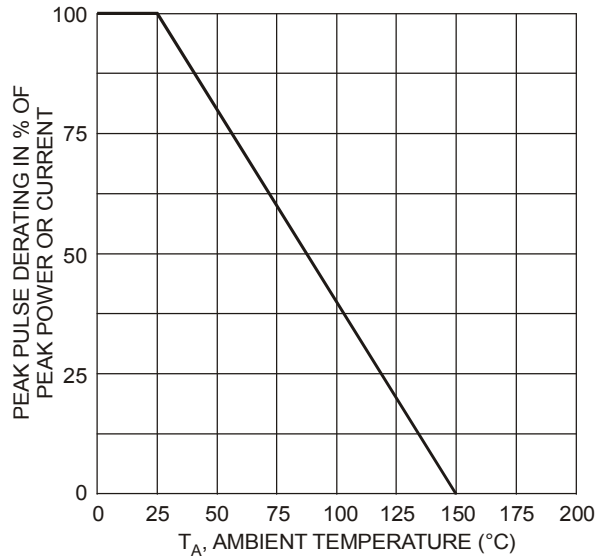


Fig. 1 Pulse Derating Curve

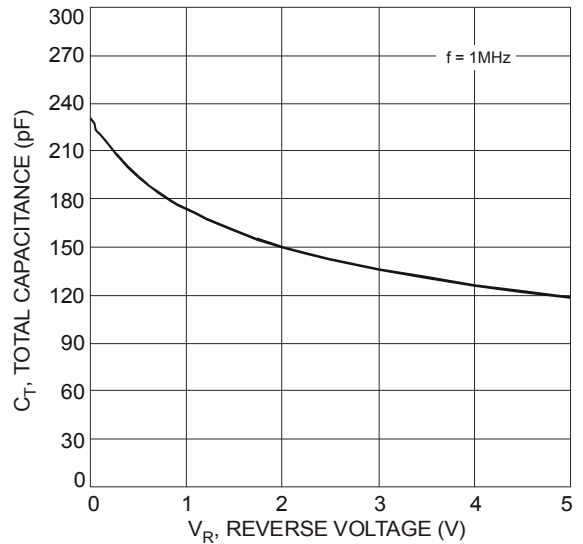


Fig. 2 Typical Total Capacitance vs. Reverse Voltage

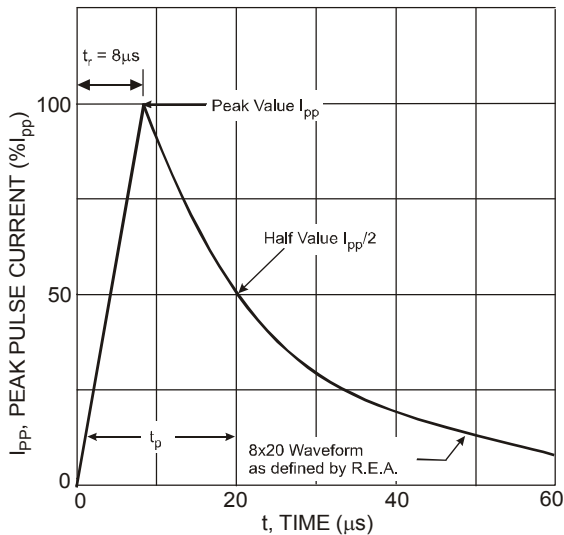


Fig. 3 Pulse Waveform

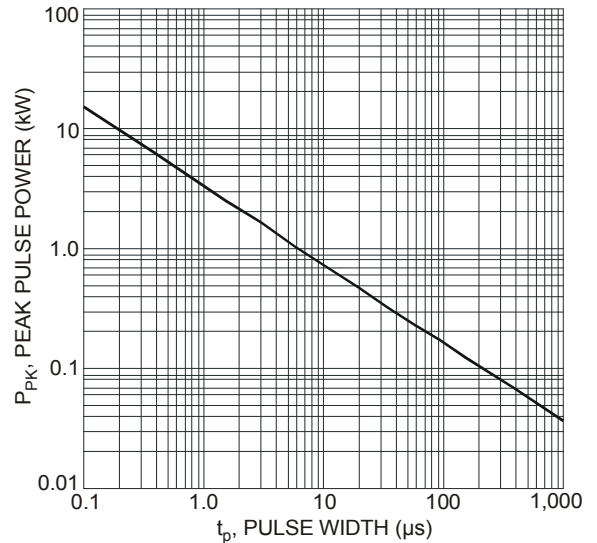


Fig. 4 Pulse Rating Curve

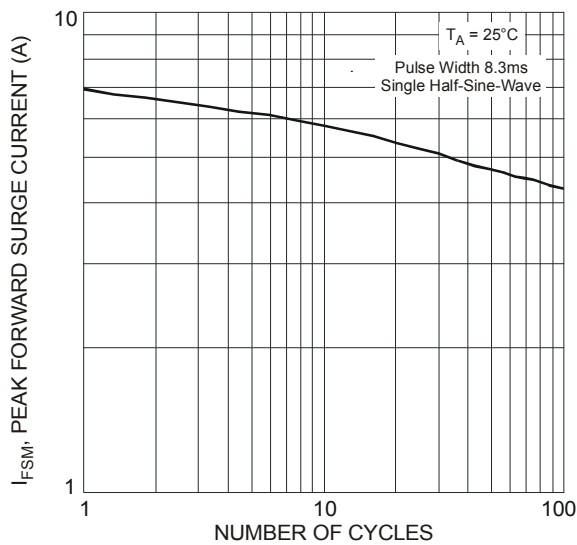
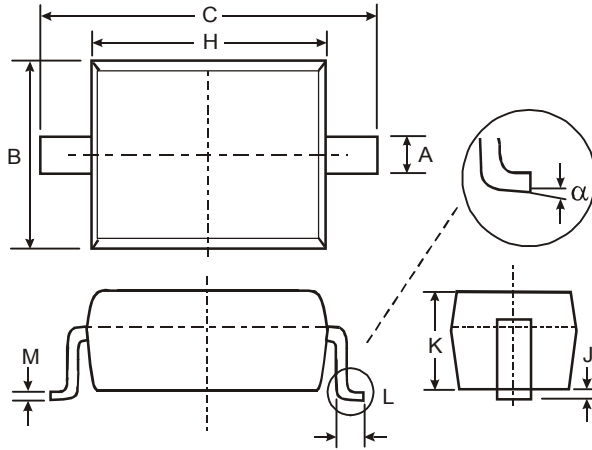


Fig. 5 Maximum Non-Repetitive Surge Current

Package Outline Dimensions

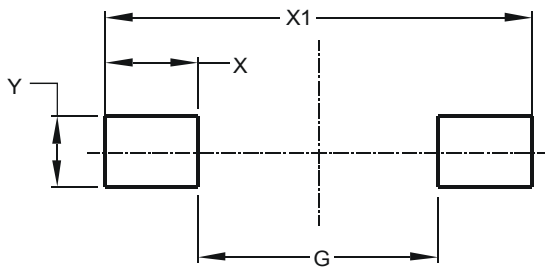
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



| SOD323 | | |
|----------------------|------|------|
| Dim | Min | Max |
| A | 0.25 | 0.35 |
| B | 1.20 | 1.40 |
| C | 2.30 | 2.70 |
| H | 1.60 | 1.80 |
| J | 0.00 | 0.10 |
| K | 1.0 | 1.1 |
| L | 0.20 | 0.40 |
| M | 0.10 | 0.15 |
| α | 0° | 8° |
| 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 | 1.520 |
| X | 0.590 |
| X1 | 2.700 |
| Y | 0.450 |

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