

Features

- 350 Watts Peak Pulse Power (tp = 8x20µs)
- IEC 61000-4-2 (ESD): Air – 30kV, Contact – 30kV
- IEC 61000-4-2 (ESD), HBM – 16kV
- IEC 61000-4-4, 40A
- IEC 61000-4-5 (Lightning), 15A
- Typically Used at Computer Interface Protection, Data Line and Power Line Protection
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**

Mechanical Data

- Case: SOD323
- Case Material: Molded Plastic, "Green" Molding Compound. 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 208③
- Weight: 0.004 grams (Approximate)

SOD323



Top View



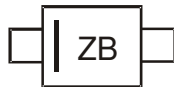
Device Schematic

Ordering Information (Note 4)

| Product | Compliance | Marking | Reel size(inches) | Tape width(mm) | Quantity per reel |
|---------|------------|---------|-------------------|----------------|-------------------|
| SD12-7 | Standard | ZB | 7 | 8 | 3,000/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



ZB = Product Type Marking Code
Line Denotes Pin 1

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

| Characteristic | Symbol | Value | Unit | Conditions |
|------------------------------------|--------------------------|-------|------|------------------------|
| Peak Pulse Current | I _{PP} | 15 | A | 8/20μs, Per Figure 3 |
| ESD Protection – Contact Discharge | V _{ESD_Contact} | ±30 | kV | Standard IEC 61000-4-2 |
| ESD Protection – Air Discharge | V _{ESD_Air} | ±30 | kV | Standard IEC 61000-4-2 |
| ESD Protection – Human Body Model | V _{ESD_HBM} | ±16 | kV | Standard IEC 61000-4-2 |
| Electrical Fast Transients (EFT) | — | 40 | A | Standard IEC 61000-4-4 |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|------------------|-------------|------|
| Package Power Dissipation (Note 5) | P _D | 350 | mW |
| Thermal Resistance, Junction to Ambient (Note 5) | R _{θJA} | 500 | °C/W |
| Operating Temperature Range | T _J | -55 to +150 | °C |
| Storage Temperature Range | T _{STG} | -55 to +150 | °C |

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

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Conditions |
|------------------------------------|------------------|------|-----|-------|------|--|
| Reverse Working Voltage | V _{RWM} | — | — | 12.0 | V | — |
| Reverse Current (Note 6) | I _R | — | — | 1 | μA | V _R = V _{RWM} = 12.0V |
| Reverse Breakdown Voltage (Note 6) | V _{BR} | 13.3 | — | 15.75 | V | I _R = 1mA |
| Reverse Clamping Voltage | V _{CL} | — | — | 19 | V | I _{PP} = 5A, t _p = 8/20μs |
| | | — | — | 25 | | I _{PP} = 15A, t _p = 8/20μs |
| Capacitance | C _T | — | — | 150 | pF | V _R = 0V, f = 1MHz |

Notes: 5. 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>.
 6. Short duration pulse test used to minimize self-heating effect.

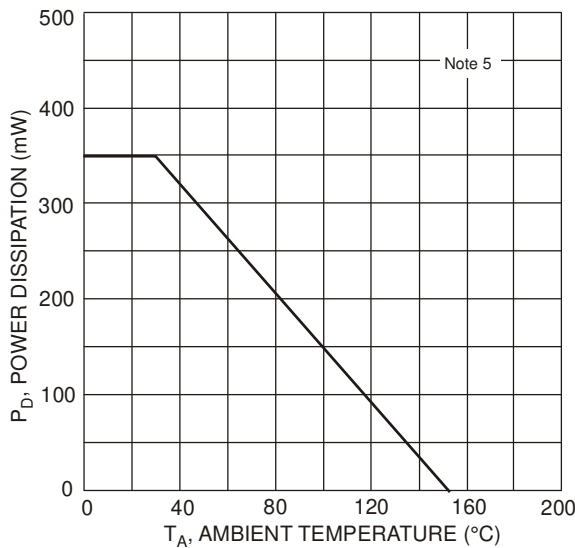


Figure 1 Power Derating Curve

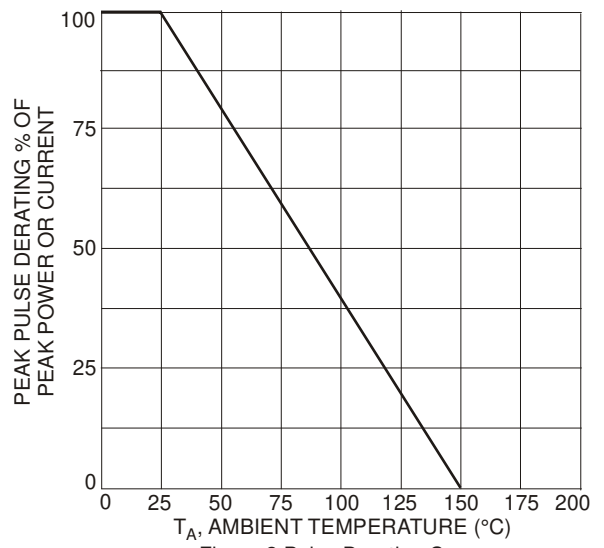


Figure 2 Pulse Derating Curve

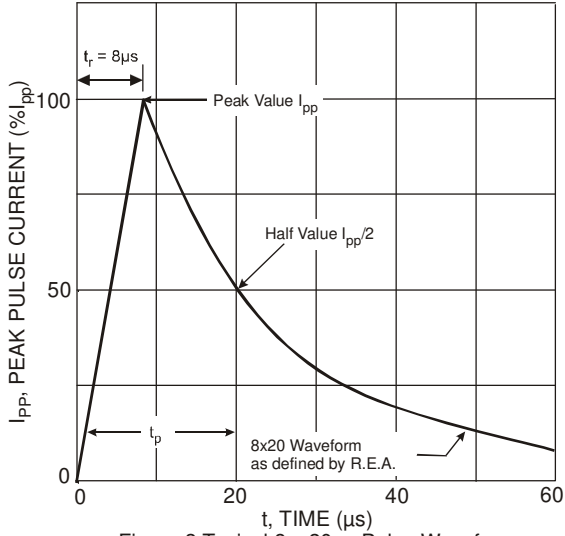


Figure 3 Typical 8 x 20µs Pulse Waveform

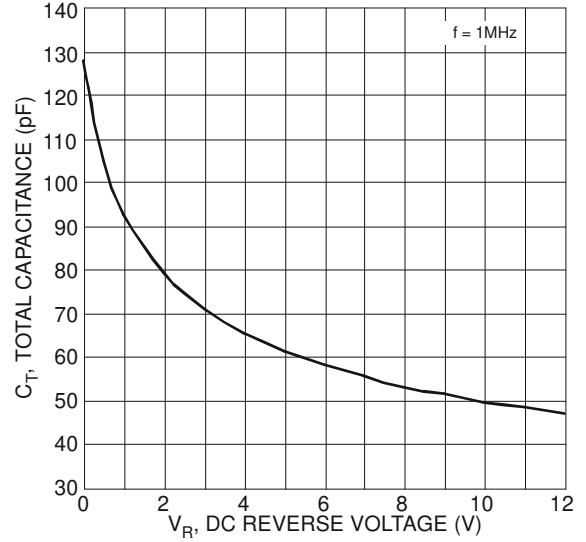


Figure 4 Typical Capacitance

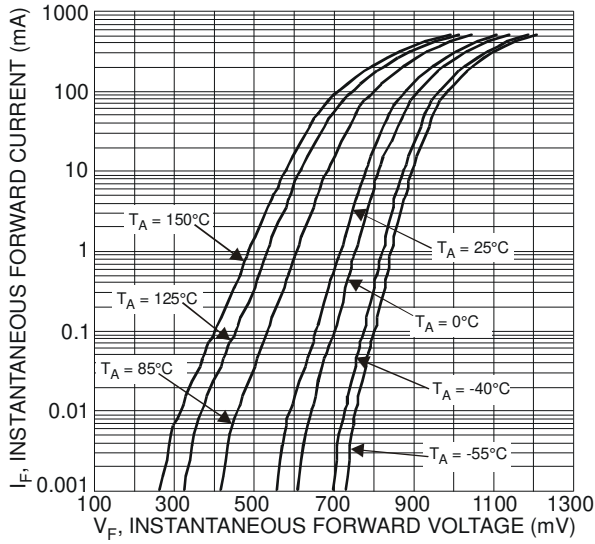


Figure 5 Typical Forward Characteristics

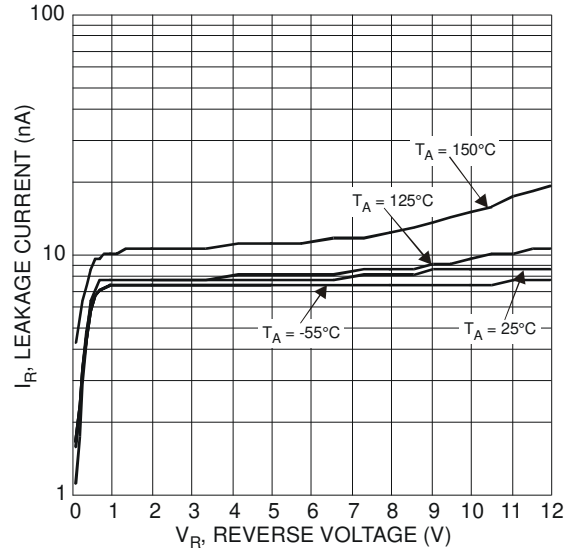


Figure 6 Typical Reverse Characteristics

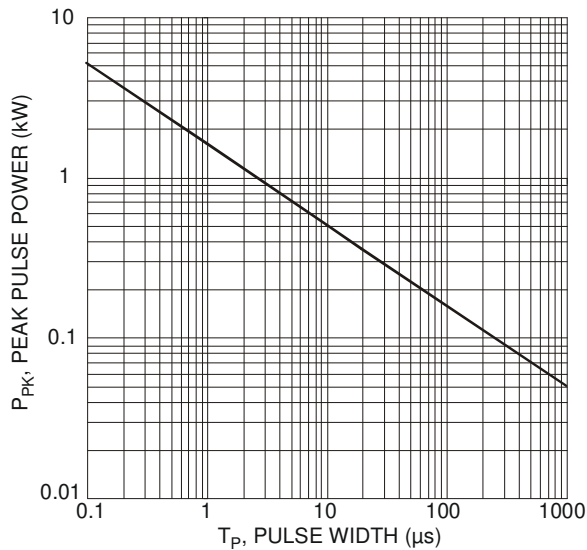
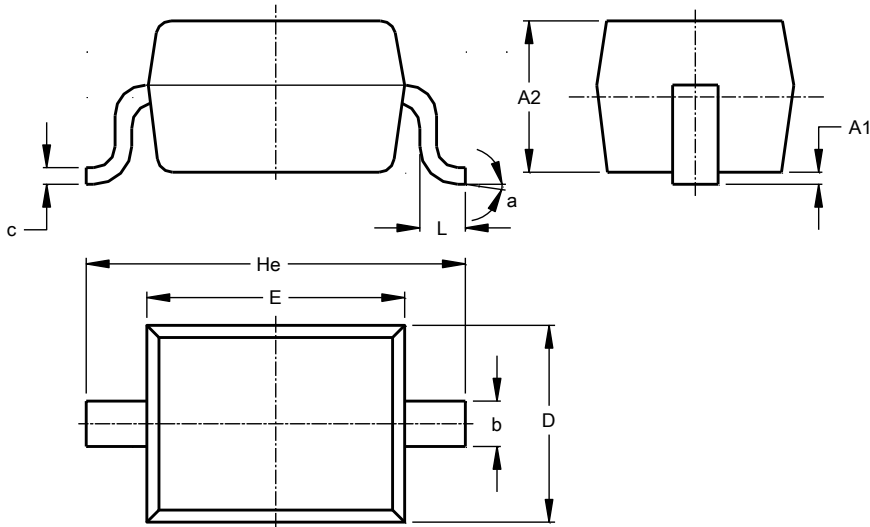


Figure 7 Pulse Rating Curve

Package Outline Dimensions

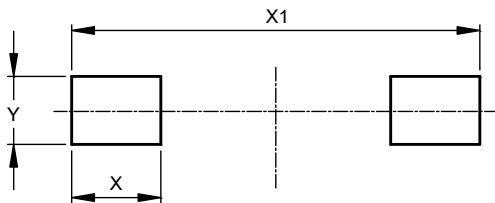
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



| SOD323 | | | |
|-----------------------------|------|------|------|
| Dim | Min | Max | Typ |
| A1 | -- | 0.10 | 0.05 |
| A2 | 1.00 | 1.10 | 1.05 |
| b | 0.25 | 0.35 | 0.30 |
| c | 0.10 | 0.15 | 0.11 |
| D | 1.20 | 1.40 | 1.30 |
| E | 1.60 | 1.80 | 1.70 |
| He | 2.30 | 2.70 | 2.50 |
| L | 0.20 | 0.40 | 0.30 |
| a | 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) |
|------------|---------------|
| X | 0.590 |
| X1 | 2.700 |
| Y | 0.450 |

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