


Features

- Provides ESD Protection per IEC 61000-4-2 Standard: Air ±30kV, Contact ±25kV
- 1 Channel of ESD Protection
- Ideal for 60V MOSFET Protection
- High Peak Pulse Current per IEC 61000-4-5 Standard
- **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 208 
- Weight: 0.004 grams (approximate)

SOD323

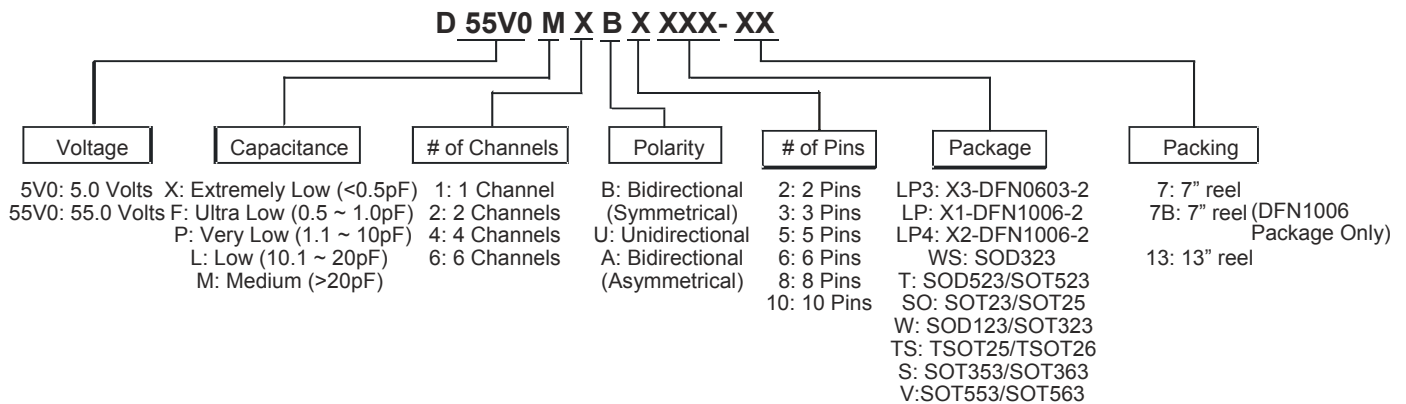


Bottom View



Device Schematic

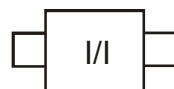
Ordering Information (Note 4)



| Product | Compliance | Marking | Reel size(inches) | Tape width(mm) | Quantity per reel |
|---------------|------------|---------|-------------------|----------------|-------------------|
| D55V0M1B2WS-7 | Standard | I/I | 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



I/I = Product Type Marking Code

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit | Conditions |
|------------------------------------|--------------------|----------|------|-----------------------------------|
| Peak Pulse Power Dissipation | P_{PP} | 200 | W | 8/20 μs , Per Figure 2 |
| Peak Pulse Current | I_{PP} | 2 | A | 8/20 μs , Per Figure 2 |
| ESD Protection – Contact Discharge | $V_{ESD_Contact}$ | ± 25 | 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 5) | P_D | 250 | mW |
| Thermal Resistance, Junction to Ambient (Note 5) | $R_{\theta JA}$ | 500 | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range | T_J, T_{STG} | -65 to +150 | $^\circ\text{C}$ |

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

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Conditions |
|----------------------------------|-----------|-----|-----|-----------|------|--|
| Reverse Standoff Voltage | V_{RWM} | — | — | 55 | V | - |
| Channel Leakage Current (Note 6) | I_{RM} | — | — | 100 | nA | $V_{RWM} = 55\text{V}$ |
| Clamping Voltage | V_{CL} | — | — | 86 100 | V | $I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$ $I_{PP} = 2\text{A}, t_p = 8/20\mu\text{s}$ |
| Breakdown Voltage | V_{BR} | 57 | — | — | V | $I_R = 1\text{mA}$ |
| Channel Input Capacitance | C_T | — | 14 | 25 | pF | $V_R = 0\text{V}, f = 1\text{MHz}$ |

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

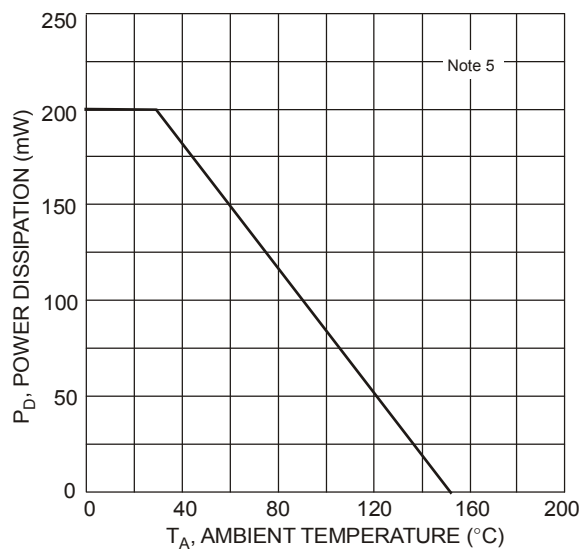


Figure 1 Power Derating Curve

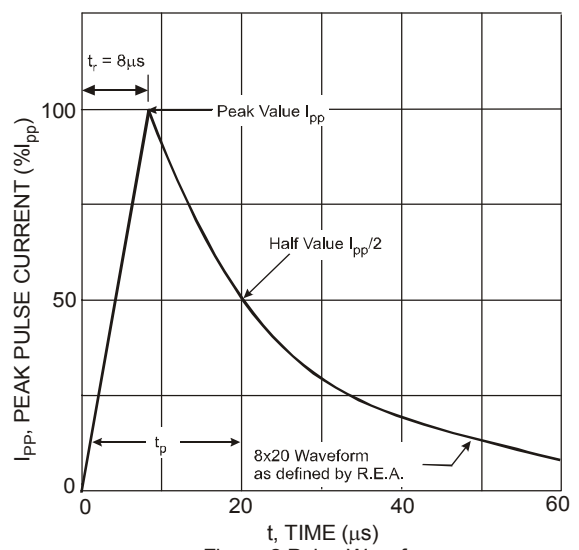


Figure 2 Pulse Waveform

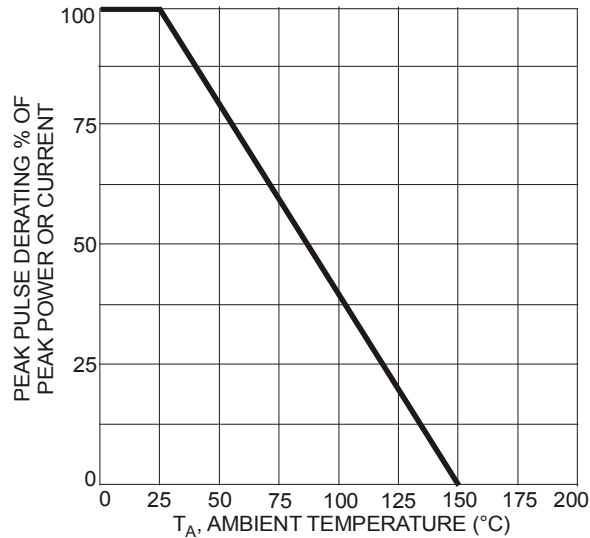


Figure 3 Power Dissipation vs. Ambient Temperature

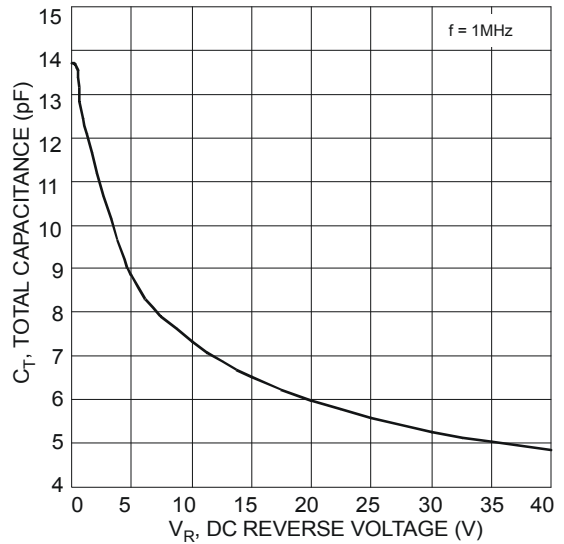


Figure 4 Total Capacitance vs. Reverse Voltage

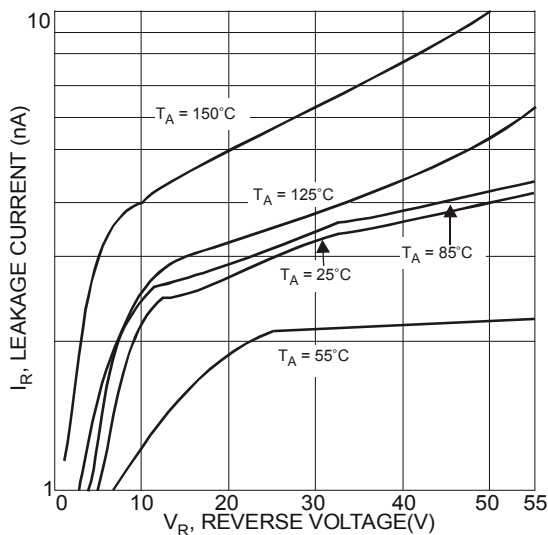
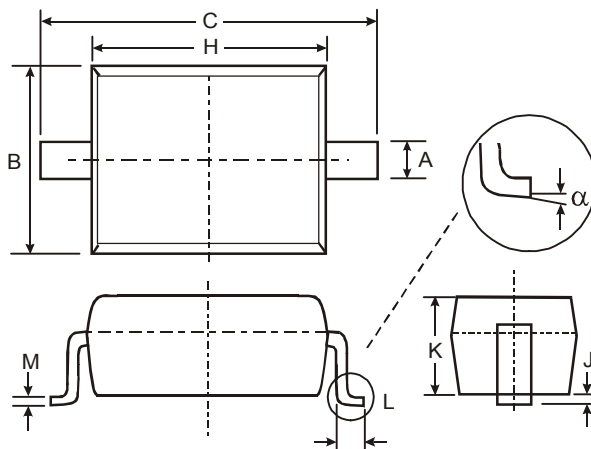


Figure 5 Typical Reverse Characteristics

Package Outline Dimensions

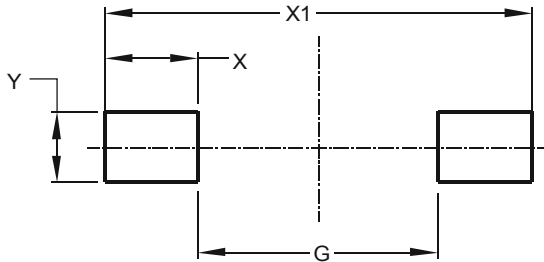
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



| 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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