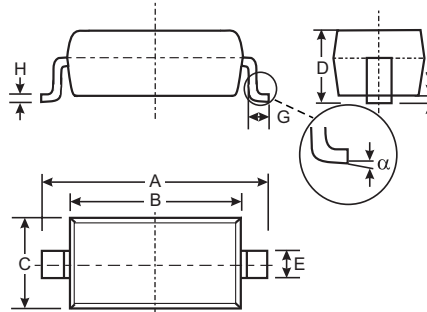


### Features

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- Negligible Reverse Recovery Time
- Very Low Reverse Capacitance
- Available in Lead Free/RoHS Compliant Version (Note 3)

### Mechanical Data

- Case: SOD-123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Leads: Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe). Please see Ordering Information, Note 5, on Page 2
- Polarity: Cathode Band
- Marking: Date Code & Type Code, See Page 2
- Type Codes: SD101AW S1 or SK  
SD101BW S2 or SK  
SD101CW S3 or SK
- Ordering Information: See Page 2
- Weight: 0.01 grams (approx.)



| SOD-123              |              |      |
|----------------------|--------------|------|
| Dim                  | Min          | Max  |
| A                    | 3.55         | 3.85 |
| B                    | 2.55         | 2.85 |
| C                    | 1.40         | 1.70 |
| D                    | —            | 1.35 |
| E                    | 0.45         | 0.65 |
|                      | 0.55 Typical |      |
| G                    | 0.25         | —    |
| H                    | 0.11 Typical |      |
| J                    | —            | 0.10 |
| $\alpha$             | 0°           | 8°   |
| All Dimensions in mm |              |      |

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic  | Symbol          | SD101AW     | SD101BW | SD101CW | Unit                      |
|---|-----------------|-------------|---------|---------|---------------------------|
| Peak Repetitive Reverse Voltage   | $V_{RRM}$       | 60          | 50      | 40      | V                         |
| Working Peak Reverse Voltage  | $V_{RWM}$       |             |         |         |                           |
| DC Blocking Voltage   | $V_R$           |             |         |         |                           |
| RMS Reverse Voltage   | $V_{R(RMS)}$    | 42          | 35      | 28      | V                         |
| Forward Continuous Current (Note 1)   | $I_{FM}$        | 15          |         |         | mA                        |
| Non-Repetitive Peak Forward Surge Current @ $t \leq 1.0\text{s}$<br>@ $t = 10\mu\text{s}$ | $I_{FSM}$       | 50<br>2.0   |         |         | mA<br>A                   |
| Power Dissipation (Note 1)  | $P_d$           | 400         |         |         | mW                        |
| Thermal Resistance, Junction to Ambient Air (Note 1)                                      | $R_{\theta JA}$ | 300         |         |         | $^\circ\text{C}/\text{W}$ |
| Operating and Storage Temperature Range   | $T_j, T_{STG}$  | -65 to +125 |         |         | $^\circ\text{C}$          |

### Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                     | Symbol   | Min            | Max  | Unit | Test Condition  |
|------------------------------------|--|----------------|--|------|---|
| Reverse Breakdown Voltage (Note 2) | SD101AW<br>SD101BW<br>SD101CW<br>$V_{(BR)R}$                               | 60<br>50<br>40 | —  | V    | $I_R = 10\mu\text{A}$<br>$I_R = 10\mu\text{A}$<br>$I_R = 10\mu\text{A}$   |
| Forward Voltage Drop               | SD101AW<br>SD101BW<br>SD101CW<br>SD101AW<br>SD101BW<br>SD101CW<br>$V_{FM}$ | —              | 0.41<br>0.40<br>0.39<br>1.00<br>0.95<br>0.90 | V    | $I_F = 1.0\text{mA}$<br>$I_F = 1.0\text{mA}$<br>$I_F = 1.0\text{mA}$<br>$I_F = 15\text{mA}$<br>$I_F = 15\text{mA}$<br>$I_F = 15\text{mA}$ |
| Peak Reverse Current (Note 2)      | SD101AW<br>SD101BW<br>SD101CW<br>$I_{RM}$                                  | —              | 200  | nA   | $V_R = 50\text{V}$<br>$V_R = 40\text{V}$<br>$V_R = 30\text{V}$  |
| Total Capacitance                  | SD101AW<br>SD101BW<br>SD101CW<br>$C_T$                                     | —              | 2.0<br>2.1<br>2.2                            | pF   | $V_R = 0\text{V}, f = 1.0\text{MHz}$  |
| Reverse Recovery Time              | $t_{rr}$   | —              | 1.0  | ns   | $I_F = I_R = 5.0\text{mA}$ ,<br>$I_{rr} = 0.1 \times I_R, R_L = 100\Omega$  |

Notes: 1. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.  
2. Short duration test pulse used to minimize self-heating effect.  
3. No purposefully added lead.

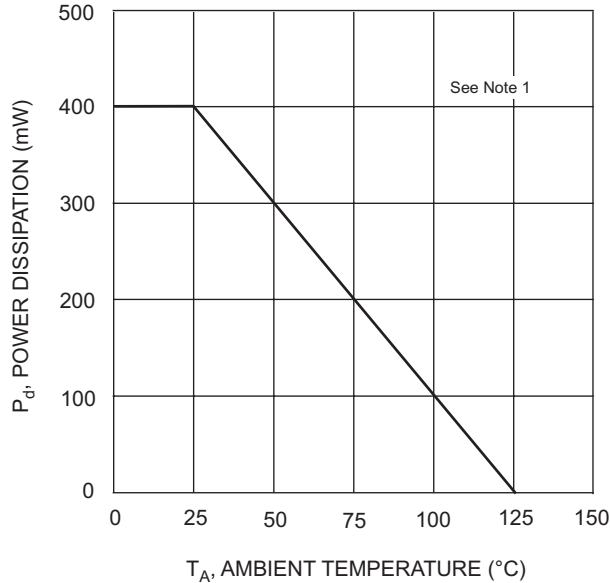


Fig. 1 Power Derating Curve

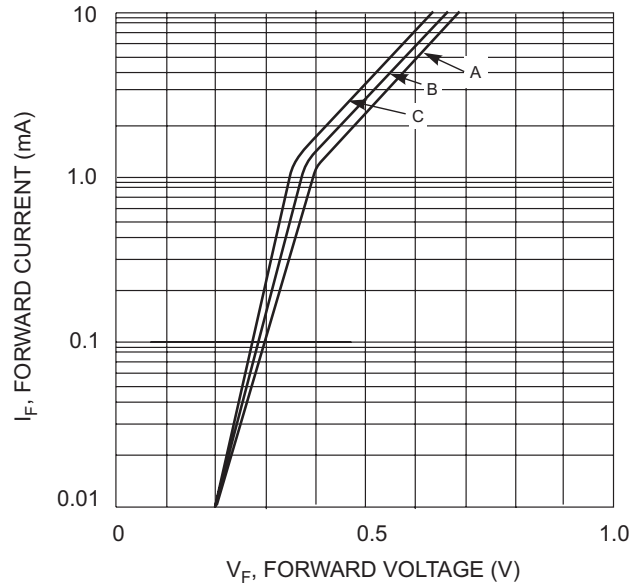


Fig. 2 Typical Forward Characteristic

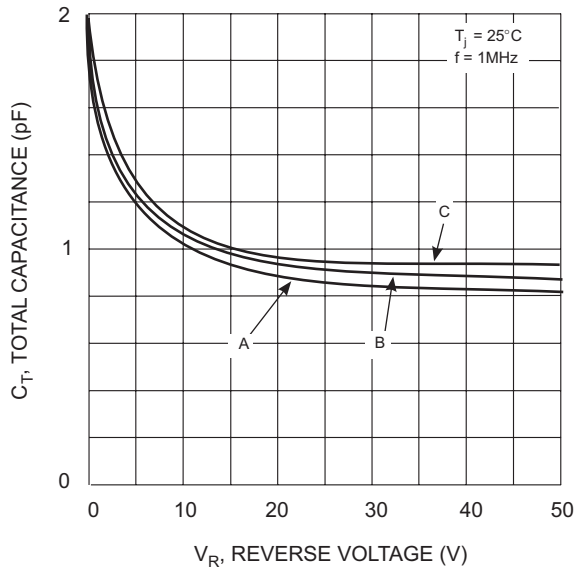


Fig. 3 Typical Total Capacitance vs Reverse Voltage

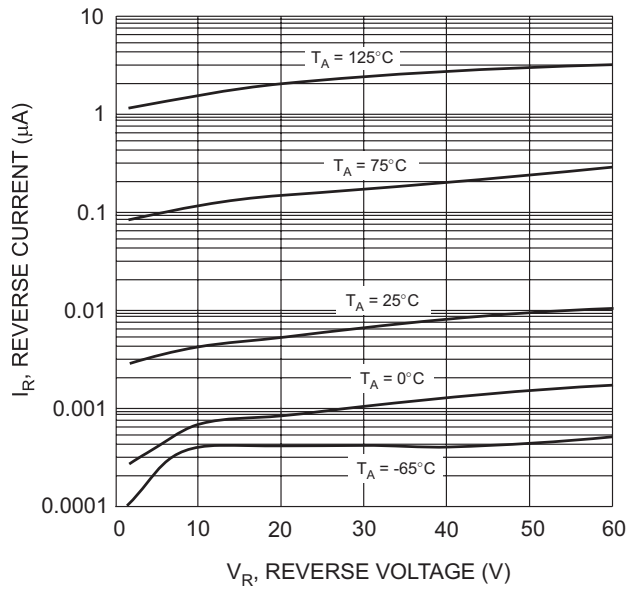


Fig. 4 Typical Reverse Characteristics

**Ordering Information** (Note 4)

| Device     | Packaging | Shipping             |
|------------|-----------|----------------------|
| SD101xW-7  | SOD-123   | 3000/Tape and Reel   |
| SD101xW-13 | SOD-123   | 10,000/Tape and Reel |

- Note: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.  
 5. For Lead Free/RoHS Compliant version part numbers, please add "-F" suffix to the part numbers above. Example: SD101CW-7-F.

**Marking Information**



XX = Product Type Marking Code, See Page 1  
 YM = Date Code Marking  
 Y = Year (ex: N = 2002)  
 M = Month (ex: 9 = September)

Date Code Key

| Year | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | J    | K    | L    | M    | N    | P    | R    | S    | T    | U    | V    | W    |

| Month | Jan | Feb | March | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code  | 1   | 2   | 3     | 4   | 5   | 6   | 7   | 8   | 9   | O   | N   | D   |