

SCHOTTKY BARRIER SWITCHING DIODE

Features

- Low Forward Voltage Drop
- **Guard Ring Construction for Transient Protection**
- Negligible Reverse Recovery Time
- Very Low Reverse Capacitance
- Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 2 and 3)

Mechanical Data

- Case: SOD-123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Leads: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe)
- Polarity: Cathode Band
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.01 grams (approximate)



Top View

Maximum Ratings @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | SD101AW | SD101BW | SD101CW | Unit |
|--|--|---------|-----------|---------|---------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | 60 | 50 | 40 | V |
| 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 @ $t \le 1.0s$ @ $t = 10\mu s$ | I _{FSM} | | 50 2.0 | | mA A |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|-----------------|-------------|------|
| Power Dissipation (Note 1) | P _D | 400 | mW |
| Thermal Resistance, Junction to Ambient Air (Note 1) | $R_{\theta JA}$ | 300 | °C/W |
| Operating and Storage Temperature Range | TJ, TSTG | -65 to +125 | °C |

Notes:

- 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.
- No purposefully added lead. Halogen and Antimony Free.

 Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code

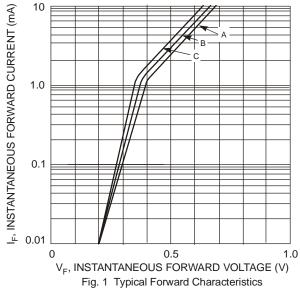
 To Bellevingers V9 are built with Non-Green Molding Compound and may contain Halogens or Sb₂O₃ Fire Retardants.

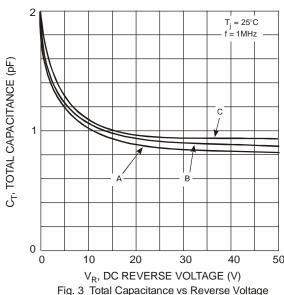


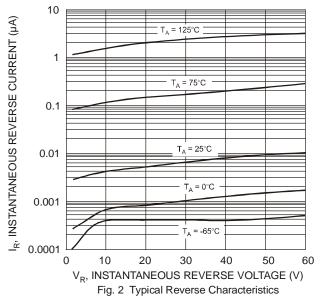
Electrical Characteristics @T_A = 25°C unless otherwise specified

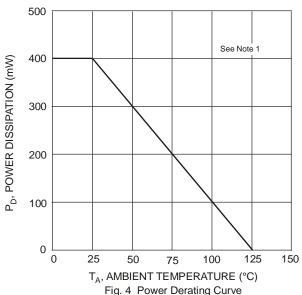
| Characteristic | Symbol | Min | Max | Unit | Test Condition | |
|------------------------------------|--|--------------------|----------------|--|----------------|---|
| Reverse Breakdown Voltage (Note 4) | SD101AW SD101BW SD101CW | V _{(BR)R} | 60 50 40 | _ | V | $\begin{split} I_R &= 10 \mu A \\ I_R &= 10 \mu A \\ I_R &= 10 \mu A \end{split}$ |
| Forward Voltage Drop | SD101AW SD101BW SD101CW SD101AW SD101BW SD101CW | V _{FM} | _ | 0.41 0.40 0.39 1.00 0.95 0.90 | V | IF = 1.0mA IF = 1.0mA IF = 1.0mA IF = 15mA IF = 15mA |
| Peak Reverse Current (Note 4) | SD101AW SD101BW SD101CW | I _{RM} | _ | 200 | nA | $V_R = 50V$ $V_R = 40V$ $V_R = 30V$ |
| Total Capacitance | SD101AW SD101BW SD101CW | Ст | _ | 2.0 2.1 2.2 | pF | V _R = 0V, f = 1.0MHz |
| Reverse Recovery Time | | t _{rr} | _ | 1.0 | ns | $I_F = I_R = 5.0 \text{mA},$ $I_{rr} = 0.1 \times I_R, R_L = 100 \Omega$ |

Notes: 4. Short duration pulse test used to minimize self-heating effect.









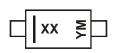


Ordering Information (Note 5)

| Part Number | Case | Packaging |
|--------------|---------|----------------------|
| SD101xW-7-F | SOD-123 | 3000/Tape and Reel |
| SD101xW-13-F | SOD-123 | 10,000/Tape and Reel |

Notes: 5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



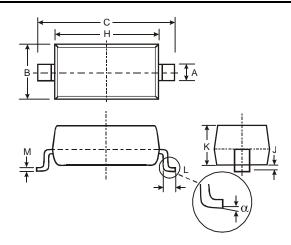
xx = Product Type Marking Code S1 or SK = SD101AW S2 or SK = SD101BW S3 or SK = SD101CW YM = Date Code Marking

Y = Year (ex: T = 2006) M = Month (ex: 9 = September)

Date Code Key

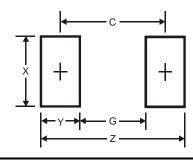
| Year | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | J | K | L | М | N | Р | R | S | Т | U | V | W | Χ | Υ | Z | Α | В | С |
| Month | Ja | ın | Feb | N | lar | Apr | М | ay | Jun | Jı | ıl | Aug | Sej | 0 | Oct | Nov | , | Dec |
| Code | 1 | | 2 | | 3 | 4 | | 5 | 6 | 7 | 7 | 8 | 9 | | 0 | N | | D |

Package Outline Dimensions



| SOD-123 | | | | | | | |
|---------|-----------|---------|--|--|--|--|--|
| Dim | Min | Max | | | | | |
| Α | 0.55 Typ | | | | | | |
| В | 1.40 | 1.70 | | | | | |
| C | 3.55 | 3.85 | | | | | |
| H | 2.55 2.85 | | | | | | |
| 7 | 0.00 0.10 | | | | | | |
| K | 1.00 1.35 | | | | | | |
| L | 0.25 0.40 | | | | | | |
| М | 0.10 | 0.15 | | | | | |
| α | 0 | 8° | | | | | |
| All Dir | nensions | s in mm | | | | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 4.9 |
| G | 2.5 |
| Х | 0.7 |
| Υ | 1.2 |
| С | 3.7 |

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