# 8.0A SCHOTTKY BARRIER RECTIFIERS

## Product Summary @$T_A$ = +25°C

| $V_{RRM}$ (V) | $I_O$ (A) | $V_{FMAX}$ (V) | $I_{RMAX}$ (µA) |
|---|---|---|---|
| 30, 40, 60 | 8 | 0.7 | 100 |

## Features and Benefits

- High Current Capability and Low Forward Voltage Drop
- High Surge Capacity
- Guard Ring for Transient Protection
- Low Power Loss, High Efficiency
- **Lead Free Finish, RoHS Compliant (Note 1 & 2)**

## Description and Applications

8.0 A Schottky Barrier Rectifier in DO-201AD package, offers high current capability and low forward voltage drop, designed with Guard Ring for Transient Protection and high surge capacity.

## Mechanical Data

- Case: DO-201AD
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish - Bright Tin. Solderable per MIL-STD-202, Method 208 e3
- Polarity: Cathode band
- Mounting Position: Any
- Weight: 1.1 grams (approximate)

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

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance load, derate current by 20%.

| Characteristic | Symbol | SD830 | SD840 | SD860 | Unit |
|---|---|---|---|---|---|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_{RM}$ | 30 | 40 | 60 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 21 | 28 | 42 | V |
| Average Rectified Output Current (See Figure 1) | $I_O$ | 8 | | | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$ | 175 | | | A |

## Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Typical Thermal Resistance Junction to Lead (Note 3) $T_A$ = +25°C | $R_{\theta JL}$ | 30 | °C/W |
| Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | -65 to +150 | °C |

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

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|---|---|---|---|---|---|---|
| Forward Voltage Drop | $V_F$ | – | 0.55 | 0.7 | V | $I_F$ = 8A, $T_J$ = +25°C |
| Leakage Current | $I_R$ | – | – | 1.0<br>50 | mA<br>mA | $V_R$ = $V_{RRM}$, $T_J$ = +25°C<br>$V_R$ = $V_{RRM}$, $T_J$ = +100°C |
| Typical Junction Capacitance (Note 4) | $C_J$ | – | 550 | – | pF | $V_R$ = 4V, f=1.0 MHz |

Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exempltions applied.
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. Thermal resistance from junction to lead vertical PC board mounting, 9.5mm lead length.
4. Measured at 1.0MHz and applied reverse voltage of 4.0V.

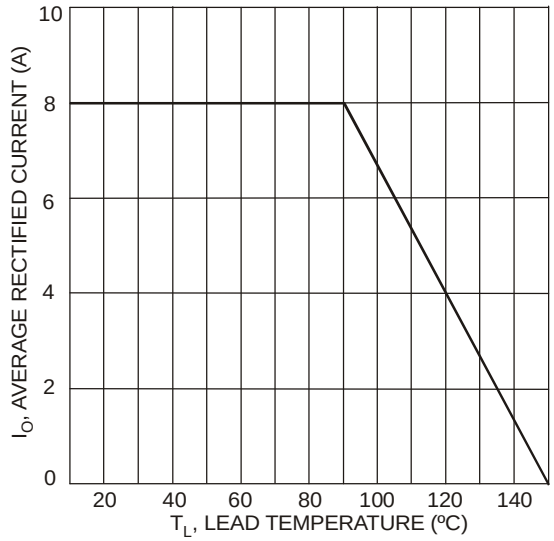



Fig. 1 Forward Current Derating Curve

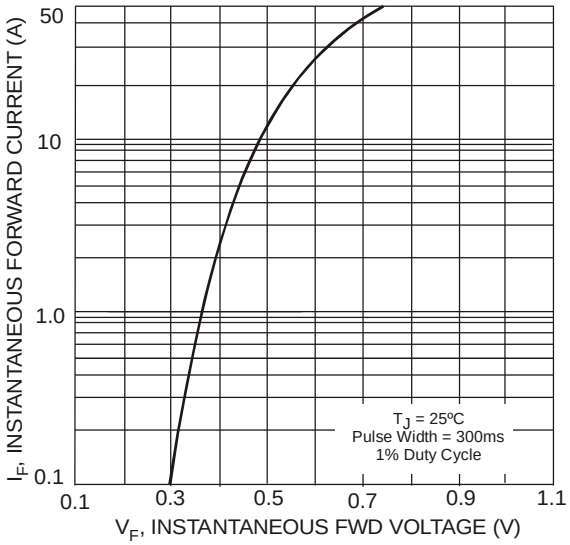



Fig. 2 Typical Forward Characteristics

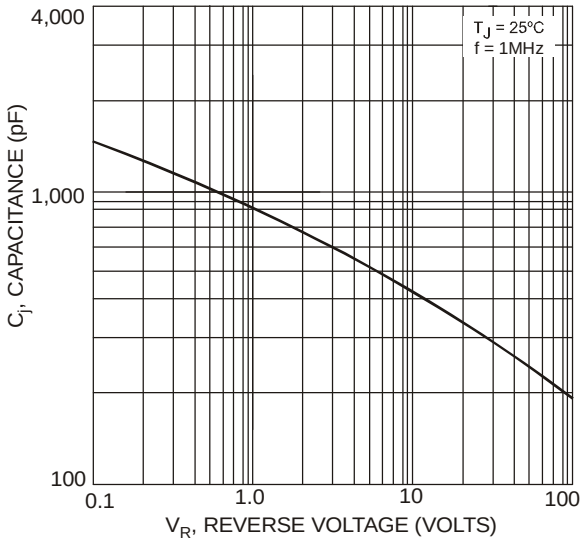



Fig. 3 Typical Junction Capacitance

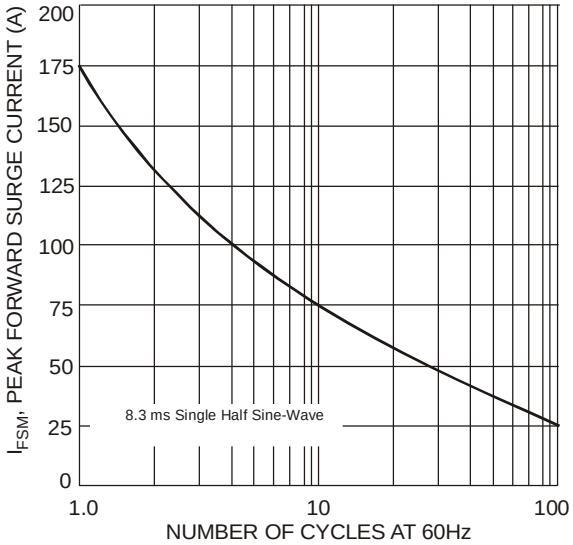
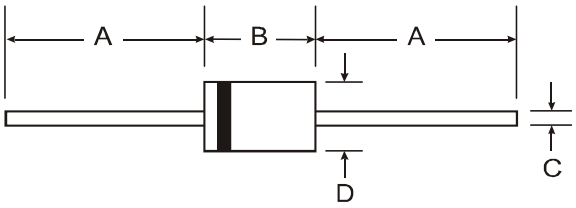



Fig. 4 Max Non-Repetitive Peak Fwd Surge Current

## Package Outline Dimensions

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




| DO-201AD | | |
|---|---|---|
| **Dim** | **Min** | **Max** |
| **A** | 25.40 | - |
| **B** | 7.20 | 9.50 |
| **C** | 1.20 | 1.30 |
| **D** | 4.80 | 5.30 |
| **All Dimensions in mm** | | |

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