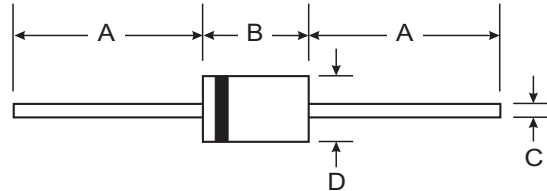


### Features

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- **Lead Free Finish, RoHS Compliant (Note 4)**



### 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. Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Mounting Position: Any
- Marking: Type Number
- Ordering Information: See Last Page
- Weight: 1.1 grams (approximate)

| 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 |       |      |

### Maximum Ratings and Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

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

| Characteristic                                                                                                                              | Symbol                          | 1N5820         | 1N5821         | 1N5822         | Unit          |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------|----------------|----------------|---------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                                                      | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 20             | 30             | 40             | V             |
| RMS Reverse Voltage                                                                                                                         | $V_{R(RMS)}$                    | 14             | 21             | 28             | V             |
| Average Rectified Output Current<br>(Note 1) @ $T_L = 95^{\circ}C$                                                                          | $I_O$                           | 3.0            |                |                | A             |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>single half sine-wave superimposed on rated load<br>(JEDEC Method) @ $T_L = 75^{\circ}C$ | $I_{FSM}$                       | 80             |                |                | A             |
| Forward Voltage (Note 2) @ $I_F = 3.0A$<br>@ $I_F = 9.4A$                                                                                   | $V_{FM}$                        | 0.475<br>0.850 | 0.500<br>0.900 | 0.525<br>0.950 | V             |
| Peak Reverse Current @ $T_A = 25^{\circ}C$<br>at Rated DC Blocking Voltage (Note 2) @ $T_A = 100^{\circ}C$                                  | $I_{RM}$                        | 2.0<br>20      |                |                | mA            |
| Typical Thermal Resistance (Note 3)                                                                                                         | $R_{\theta JA}$                 | 40             |                |                | $^{\circ}C/W$ |
|                                                                                                                                             | $R_{\theta JL}$                 | 10             |                |                |               |
| Operating and Storage Temperature Range                                                                                                     | $T_j, T_{STG}$                  | -65 to +125    |                |                | $^{\circ}C$   |

- Notes:
1. Measured at ambient temperature at a distance of 9.5mm from the case.
  2. Short duration pulse test used to minimize self-heating effect.
  3. Thermal resistance from junction to lead vertical P.C.B. mounted, 0.500" (12.7mm) lead length with 2.5 x 2.5" (63.5 x 63.5mm) copper pad.
  4. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see EU Directive Annex Notes 5 and 7.

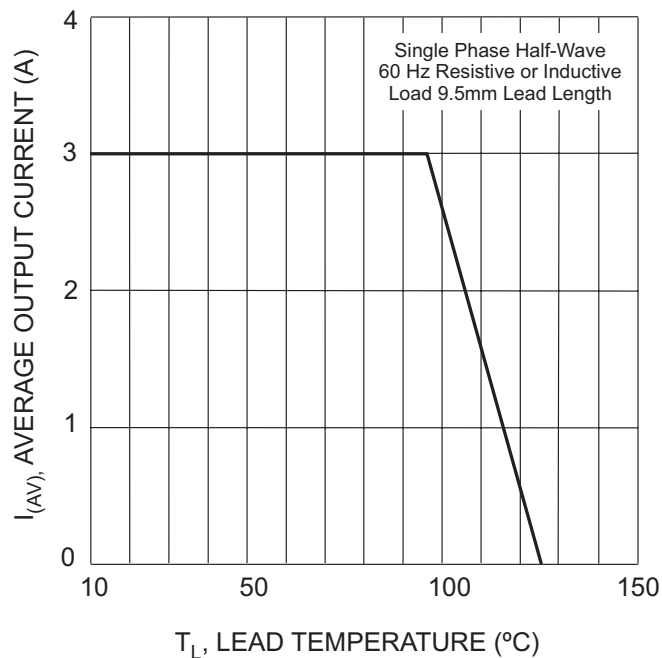


Fig. 1 Forward Current Derating Curve

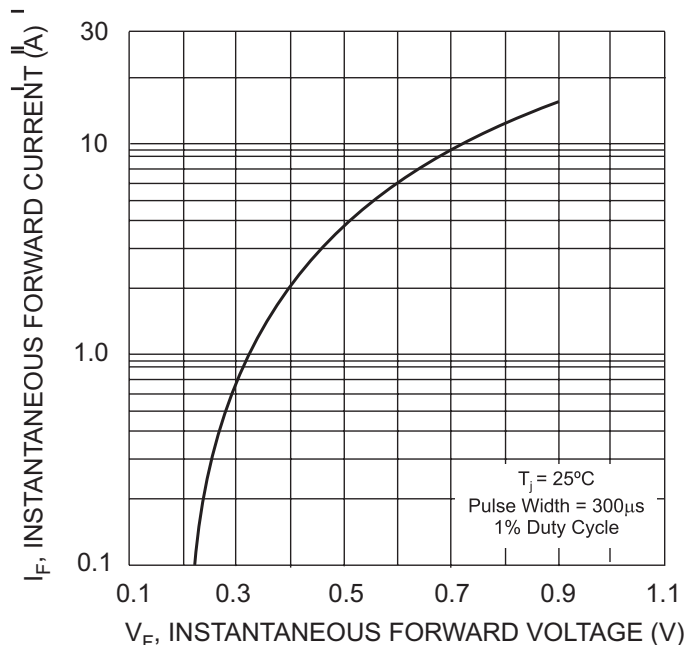


Fig. 2 Typical Forward Voltage Characteristics

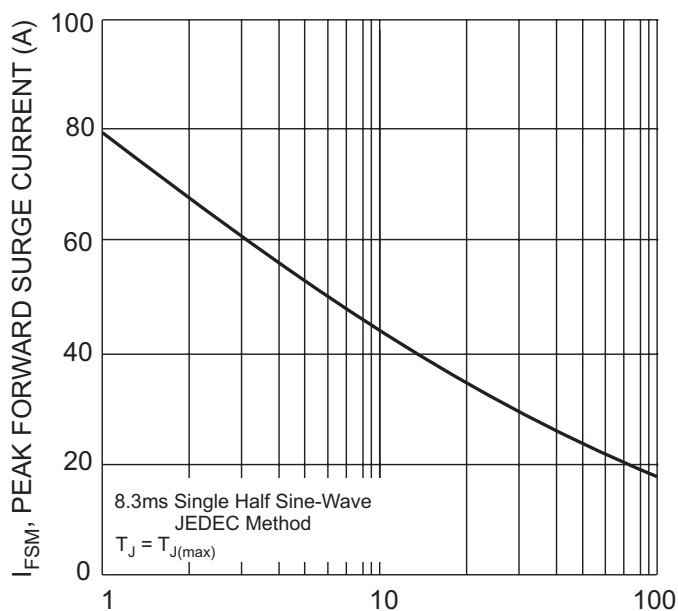


Fig. 3 Peak Forward Surge Current

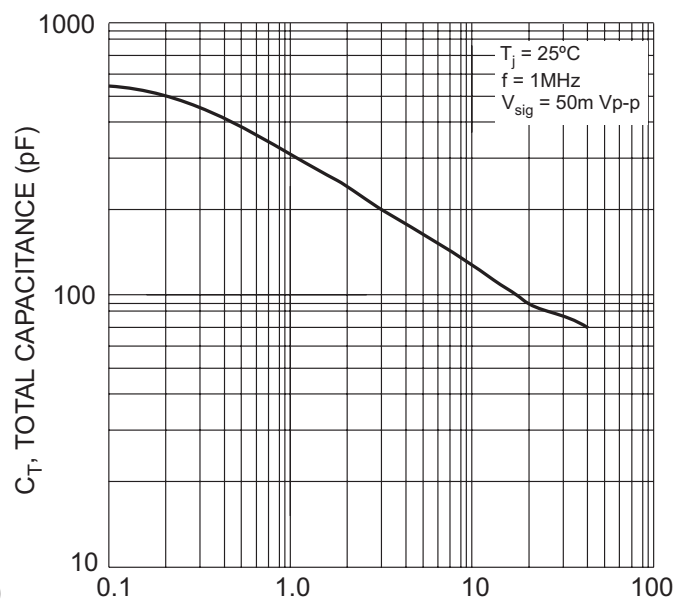


Fig. 4 Typical Total Capacitance

## Ordering Information (Note 5)

| Device   | Packaging | Shipping                  |
|----------|-----------|---------------------------|
| 1N5820-B | DO-201AD  | 500 Bulk                  |
| 1N5820-T | DO-201AD  | 1.2K/Tape & Reel, 13-inch |
| 1N5821-B | DO-201AD  | 500 Bulk                  |
| 1N5821-T | DO-201AD  | 1.2K/Tape & Reel, 13-inch |
| 1N5822-B | DO-201AD  | 500 Bulk                  |
| 1N5822-T | DO-201AD  | 1.2K/Tape & Reel, 13-inch |

Notes: 5. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap2008.pdf>