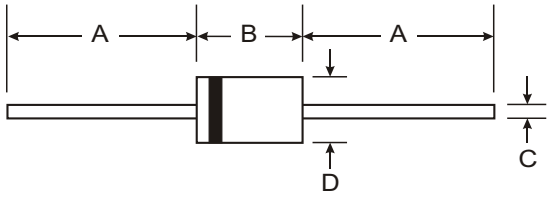
# PR3001G - PR3007G

## 3.0A FAST RECOVERY GLASS PASSIVATED RECTIFIER

## Features

- Glass Passivated Die Construction
- Fast Switching for High Efficiency
- Surge Overload Rating to 125A Peak
- Low Reverse Leakage Current
- **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 Tin. Plated Leads Solderable per MIL-STD-202, Method 208 (e3)
- Polarity: Cathode Band
- Marking: Type Number
- Ordering Information: See Last Page
- Weight: 1.12 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 @ $T_A$ = 25 C unless otherwise specified

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

| Characteristic | Symbol | PR 3001G | PR 3002G | PR 3003G | PR 3004G | PR 3005G | PR 3006G | PR 3007G | Unit |
|---|---|---|---|---|---|---|---|---|---|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage (Note 5) | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Average Rectified Output Current (Note 1) @ $T_A$ = 55 C | $I_O$ | 3.0 | | | | | | | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load | $I_{FSM}$ | 125 | | | | | | | A |
| Forward Voltage @ $I_F$ = 3.0A | $V_{FM}$ | 1.3 | | | | | | | V |
| Peak Reverse Current @ $T_A$ = 25 C<br>at Rated DC Blocking Voltage (Note 5) @ $T_A$ = 125 C | $I_{RM}$ | 5.0<br>100 | | | | | | | A |
| Reverse Recovery Time (Note 3) | $t_{rr}$ | 150 | | | 250 | | 500 | | ns |
| Typical Total Capacitance (Note 2) | $C_T$ | 50 | | | | | | | pF |
| Typical Thermal Resistance Junction to Ambient | $R_{JA}$ | 32 | | | | | | | °C/W |
| Operating and Storage Temperature Range | $T_j$, $T_{STG}$ | -65 to +150 | | | | | | | C |

Notes:
1. Valid provided that leads are maintained at ambient temperature at a distance of 9.5mm from the case.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
3. Measured with $I_F$ = 0.5A, $I_R$ = 1A, $I_{rr}$ = 0.25A. See figure 5.
4. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied, see *EU Directive Annex Notes 5 and 7*.
5. Short duration pulse test used to minimize self-heating effect.

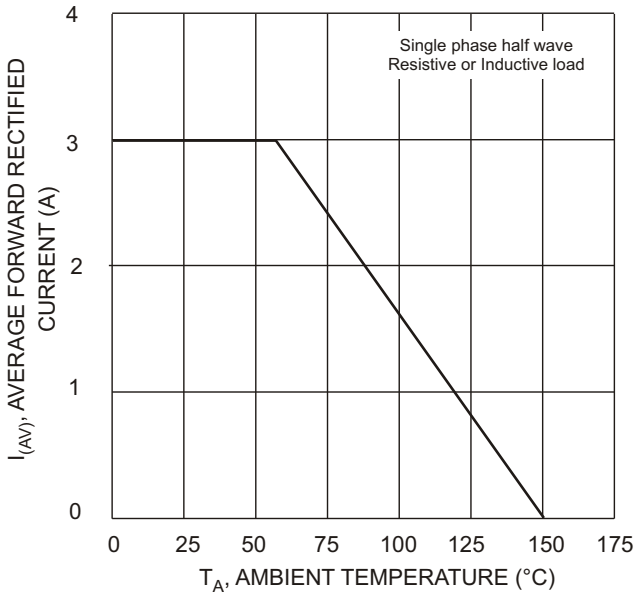



Fig. 1 Forward Derating Curve

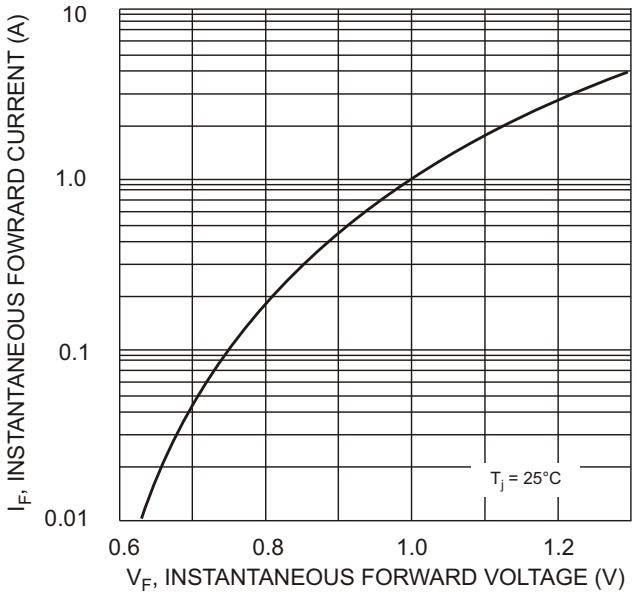



Fig. 2 Typical Forward Characteristics

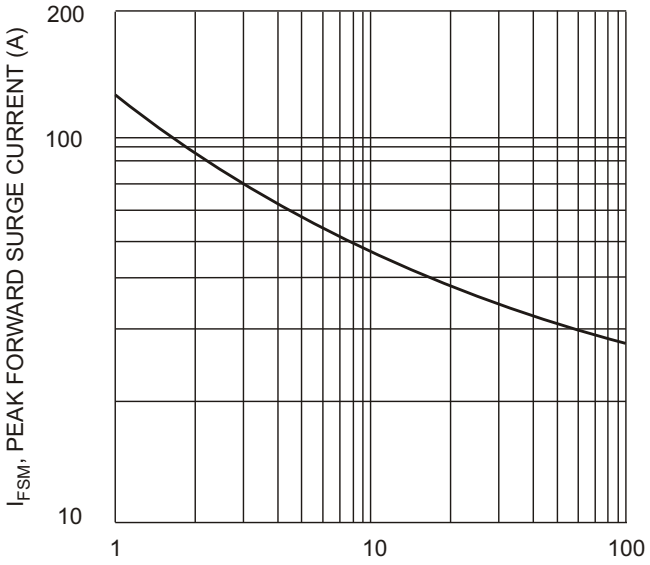



Fig. 3 Peak Forward Surge Current

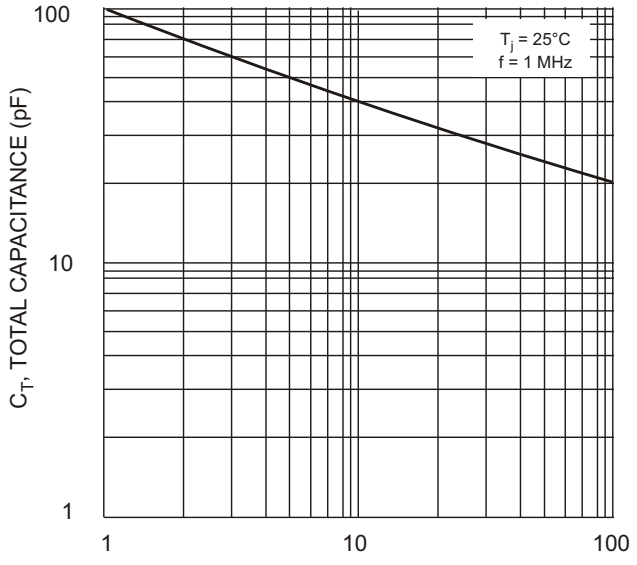
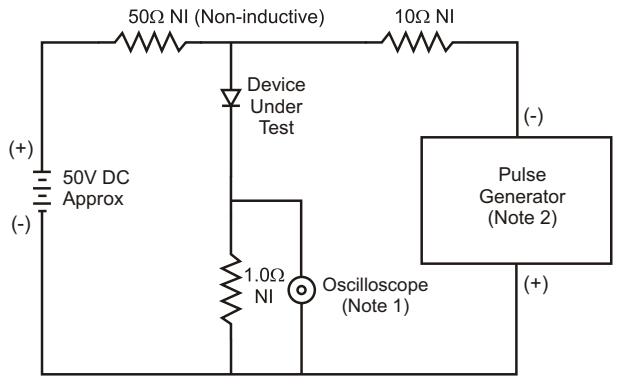



Fig. 4 Typical Total Capacitance




Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
2. Rise Time = 10ns max. Input Impedance = 50Ω.

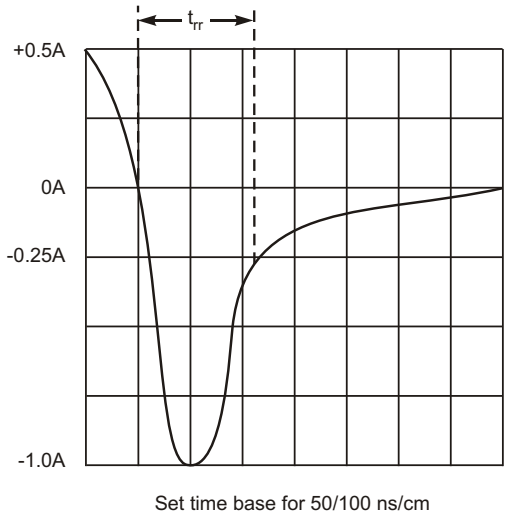



Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

## Ordering Information (Note 6)

| Device | Packaging | Shipping |
|---|---|---|
| PR3001G-B | DO-201AD | 500/Bulk |
| PR3001G-T | DO-201AD | 1.2K/Tape & Reel, 13-inch |
| PR3002G-B | DO-201AD | 500/Bulk |
| PR3002G-T | DO-201AD | 1.2K/Tape & Reel, 13-inch |
| PR3003G-B | DO-201AD | 500/Bulk |
| PR3003G-T | DO-201AD | 1.2K/Tape & Reel, 13-inch |
| PR3004G-B | DO-201AD | 500/Bulk |
| PR3004G-T | DO-201AD | 1.2K/Tape & Reel, 13-inch |
| PR3005G-B | DO-201AD | 500/Bulk |
| PR3005G-T | DO-201AD | 1.2K/Tape & Reel, 13-inch |
| PR3006G-B | DO-201AD | 500/Bulk |
| PR3006G-T | DO-201AD | 1.2K/Tape & Reel, 13-inch |
| PR3007G-B | DO-201AD | 500/Bulk |
| PR3007G-T | DO-201AD | 1.2K/Tape & Reel, 13-inch |

Notes: 6. For packaging details, visit our website at http://www.diodes.com/datasheets/ap02008.pdf