

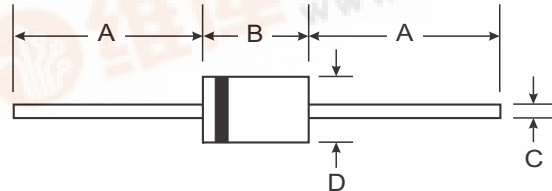


# PR1501G/S - PR1507G/S

## 1.5A FAST RECOVERY GLASS PASSIVATED RECTIFIER

### Features

- Glass Passivated Die Construction
- Fast Switching for High Efficiency
- Surge Overload Rating to 50A Peak
- Low Reverse Leakage Current
- **Lead Free Finish, RoHS Compliant (Note 4)**



### Mechanical Data

- Case: DO-41, DO-15
- 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
- DO-41 Weight: 0.35 grams (approximate)
- DO-15 Weight: 0.40 grams (approximate)

| Dim                  | DO-41 |       | DO-15 |       |
|----------------------|-------|-------|-------|-------|
|                      | Min   | Max   | Min   | Max   |
| A                    | 25.40 | —     | 25.40 | —     |
| B                    | 4.06  | 5.21  | 5.50  | 7.62  |
| C                    | 0.71  | 0.864 | 0.686 | 0.889 |
| D                    | 2.00  | 2.72  | 2.60  | 3.60  |
| All Dimensions in mm |       |       |       |       |

"GS" Suffix Designates DO-41 Package  
"G" Suffix Designates DO-15 Package

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

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

| Characteristic   | Symbol                          | PR1501<br>G/GS | PR1502<br>G/GS | PR1503<br>G/GS | PR1504<br>G/GS | PR1505<br>G/GS | PR1506<br>G/GS | PR1507<br>G/GS | 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 @ $T_A = 55^\circ\text{C}$<br>(Note 1)  | $I_O$                           | 1.5            |                |                |                |                |                |                | A                  |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave Superimposed on Rated Load                  | $I_{FSM}$                       | 50             |                |                |                |                |                |                | A                  |
| Forward Voltage @ $I_F = 1.5\text{A}$  | $V_{FM}$                        | 1.3            |                |                |                |                |                |                | V                  |
| Peak Reverse Current @ $T_A = 25^\circ\text{C}$<br>at Rated DC Blocking Voltage (Note 5) @ $T_A = 100^\circ\text{C}$ | $I_{RM}$                        | 5.0<br>200     |                |                |                |                |                |                | $\mu\text{A}$      |
| Reverse Recovery Time (Note 3)   | $t_{rr}$                        | 150            |                |                |                | 250            | 500            |                | ns                 |
| Typical Total Capacitance (Note 2)   | $C_T$                           | 25             |                |                |                |                |                |                | pF                 |
| Typical Thermal Resistance Junction to Ambient   | $R_{\theta JA}$                 | 65             |                |                |                |                |                |                | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range  | $T_j, T_{STG}$                  | -65 to +150    |                |                |                |                |                |                | $^\circ\text{C}$   |

- 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  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $t_{rr} = 0.2\text{A}$ . 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.



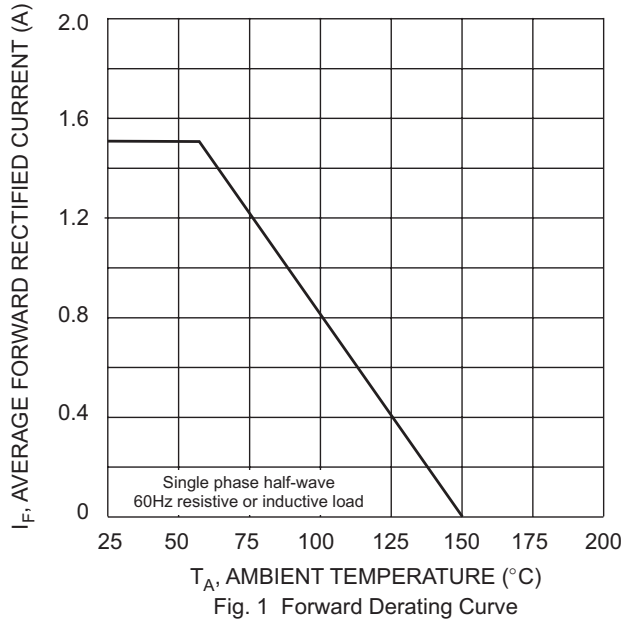


Fig. 1 Forward Derating Curve

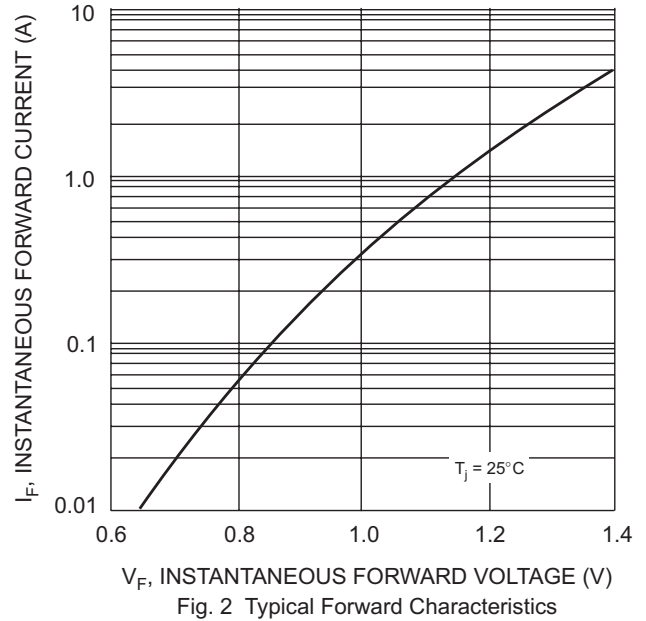


Fig. 2 Typical Forward Characteristics

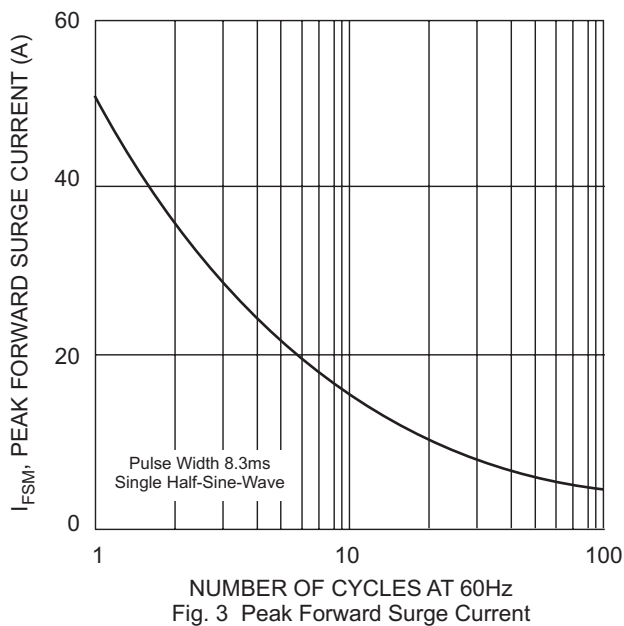


Fig. 3 Peak Forward Surge Current

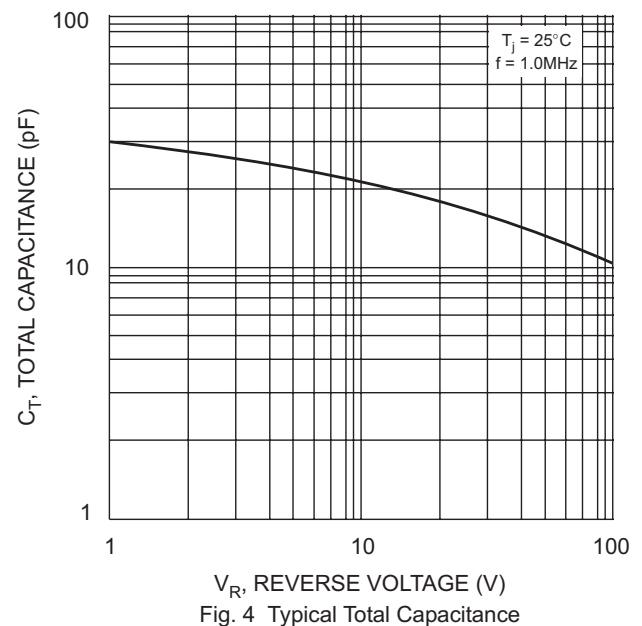
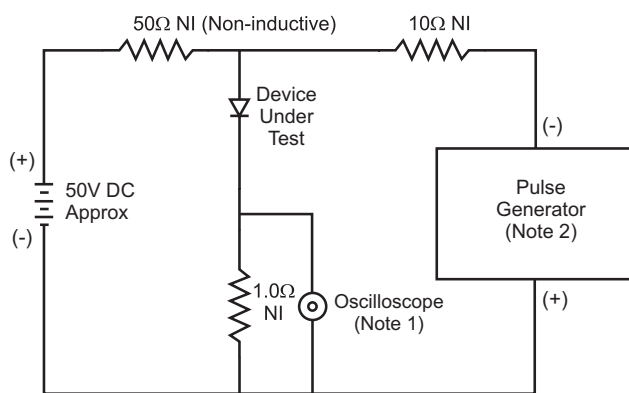


Fig. 4 Typical Total Capacitance



Notes:

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

Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

## Ordering Information (Note 6)

| Device     | Packaging | Shipping                |
|------------|-----------|-------------------------|
| PR1501G-B  | DO-15     | 1K/Bulk                 |
| PR1501G-T  | DO-15     | 4K/Tape & Reel, 13-inch |
| PR1502G-B  | DO-15     | 1K/Bulk                 |
| PR1502G-T  | DO-15     | 4K/Tape & Reel, 13-inch |
| PR1503G-B  | DO-15     | 1K/Bulk                 |
| PR1503G-T  | DO-15     | 4K/Tape & Reel, 13-inch |
| PR1504G-B  | DO-15     | 1K/Bulk                 |
| PR1504G-T  | DO-15     | 4K/Tape & Reel, 13-inch |
| PR1505G-B  | DO-15     | 1K/Bulk                 |
| PR1505G-T  | DO-15     | 4K/Tape & Reel, 13-inch |
| PR1506G-B  | DO-15     | 1K/Bulk                 |
| PR1506G-T  | DO-15     | 4K/Tape & Reel, 13-inch |
| PR1507G-B  | DO-15     | 1K/Bulk                 |
| PR1507G-T  | DO-15     | 4K/Tape & Reel, 13-inch |
| PR1501GS-A | DO-41     | 5K/Ammo Pack            |
| PR1501GS-B | DO-41     | 1K/Bulk                 |
| PR1501GS-T | DO-41     | 5K/Tape & Reel, 13-inch |
| PR1502GS-A | DO-41     | 5K/Ammo Pack            |
| PR1502GS-B | DO-41     | 1K/Bulk                 |
| PR1502GS-T | DO-41     | 5K/Tape & Reel, 13-inch |
| PR1503GS-A | DO-41     | 5K/Ammo Pack            |
| PR1503GS-B | DO-41     | 1K/Bulk                 |
| PR1503GS-T | DO-41     | 5K/Tape & Reel, 13-inch |
| PR1504GS-A | DO-41     | 5K/Ammo Pack            |
| PR1504GS-B | DO-41     | 1K/Bulk                 |
| PR1504GS-T | DO-41     | 5K/Tape & Reel, 13-inch |
| PR1505GS-A | DO-41     | 5K/Ammo Pack            |
| PR1505GS-B | DO-41     | 1K/Bulk                 |
| PR1505GS-T | DO-41     | 5K/Tape & Reel, 13-inch |
| PR1506GS-A | DO-41     | 5K/Ammo Pack            |
| PR1506GS-B | DO-41     | 1K/Bulk                 |
| PR1506GS-T | DO-41     | 5K/Tape & Reel, 13-inch |
| PR1507GS-A | DO-41     | 5K/Ammo Pack            |
| PR1507GS-B | DO-41     | 1K/Bulk                 |
| PR1507GS-T | DO-41     | 5K/Tape & Reel, 13-inch |

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

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