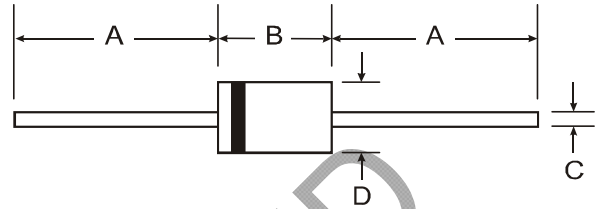


### Features

- 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 Page 3
- 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<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                            | 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                                                                     | V <sub>RRM</sub>                  | 50             | 100            | 200            | 400            | 600            | 800            | 1000           | V    |
| Working Peak Reverse Voltage                                                                        | V <sub>RWM</sub>                  |                |                |                |                |                |                |                |      |
| DC Blocking Voltage (Note 5)                                                                        | V <sub>R</sub>                    |                |                |                |                |                |                |                |      |
| RMS Reverse Voltage                                                                                 | V <sub>R(RMS)</sub>               | 35             | 70             | 140            | 280            | 420            | 560            | 700            | V    |
| Average Rectified Output Current<br>(Note 1) @ T <sub>A</sub> = 55°C                                | I <sub>O</sub>                    | 1.5            |                |                |                |                |                |                | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub>                  | 50             |                |                |                |                |                |                | A    |
| Forward Voltage @ I <sub>F</sub> = 1.5A                                                             | V <sub>FM</sub>                   | 1.3            |                |                |                |                |                |                | V    |
| Peak Reverse Current @ T <sub>A</sub> = 25°C<br>at Rated DC Blocking Voltage (Note 5)               | I <sub>RM</sub>                   | 5.0<br>200     |                |                |                |                |                |                | μA   |
| Reverse Recovery Time (Note 3)                                                                      | t <sub>rr</sub>                   | 150            |                |                |                |                | 250            | 500            | ns   |
| Typical Total Capacitance (Note 2)                                                                  | C <sub>T</sub>                    | 25             |                |                |                |                |                |                | pF   |
| Typical Thermal Resistance Junction to Ambient                                                      | R <sub>θJA</sub>                  | 65             |                |                |                |                |                |                | °C/W |
| Operating and Storage Temperature Range                                                             | T <sub>j</sub> , T <sub>STG</sub> | -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<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>rr</sub> = 0.2 5A. 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.

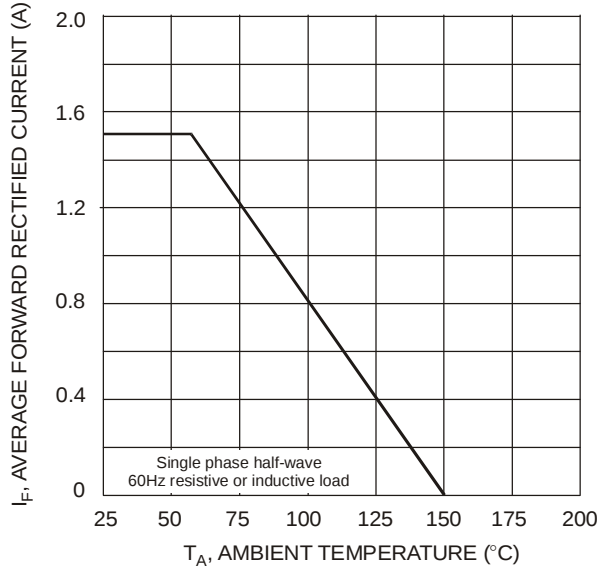


Fig. 1 Forward Derating Curve

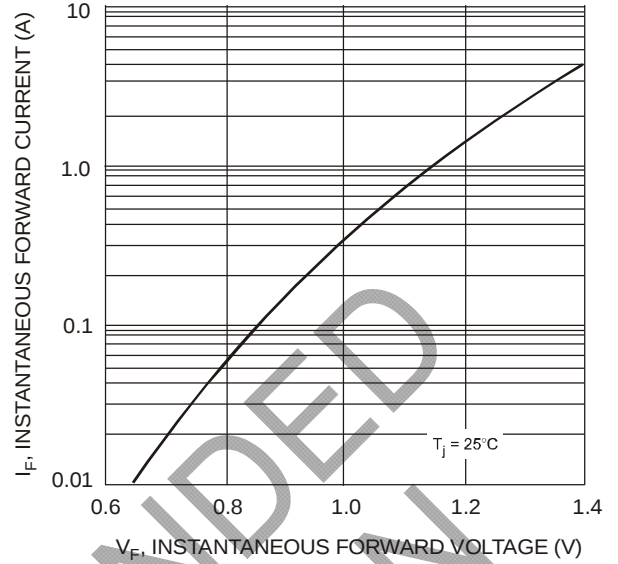


Fig. 2 Typical Forward Characteristics

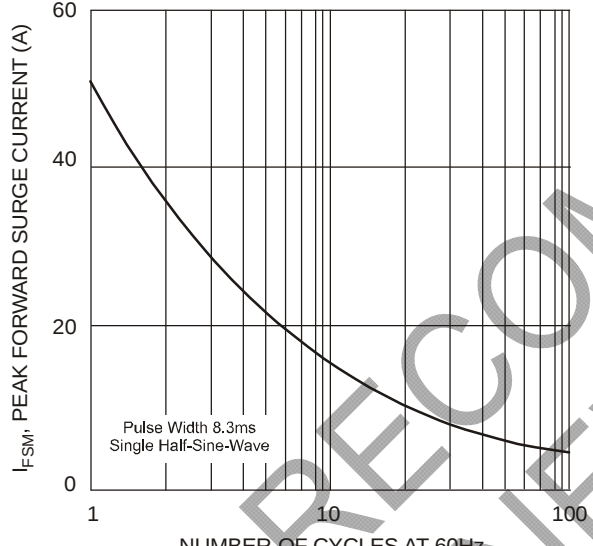


Fig. 3 Peak Forward Surge Current

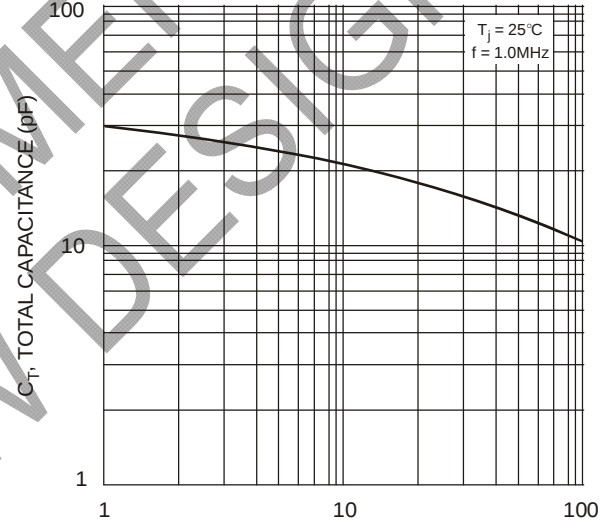
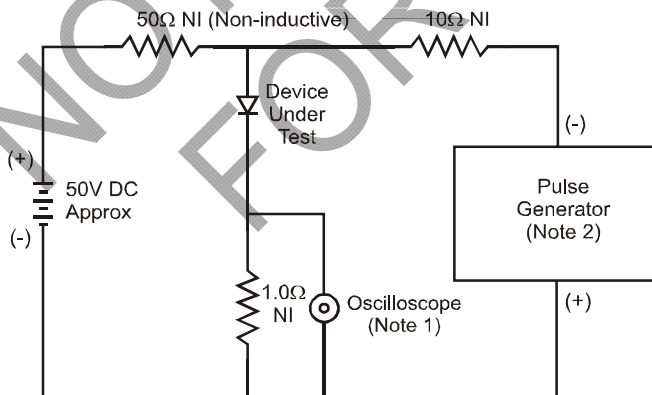


Fig. 4 Typical Total Capacitance



Notes:

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

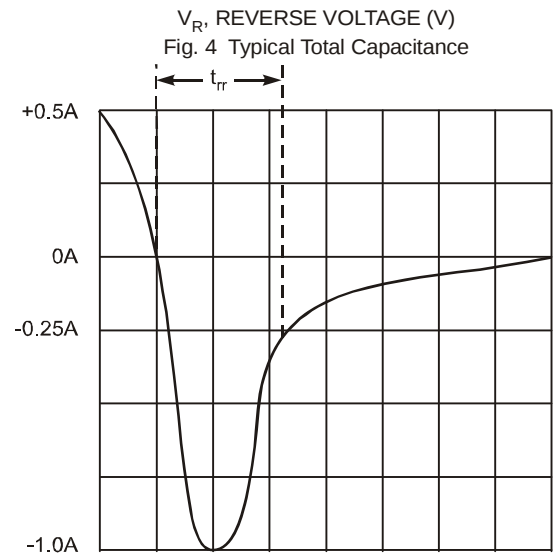


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

## Ordering Information (Note 6)

| Device     | Packaging | Shipping                |
|------------|-----------|-------------------------|
| 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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