# 1.0A FAST RECOVERY GLASS PASSIVATED RECTIFIER

## Features

- Glass Passivated Die Construction
- Fast Switching for High Efficiency
- Surge Overload Rating to 30A Peak
- Low Reverse Leakage Current
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**

## Mechanical Data

- Case: DO-41 Plastic
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish—Tin. Plated Leads Solderable per MIL-STD-202, Method 208 e3
- Polarity: Cathode Band
- Weight: 0.35 grams (Approximate)

Top View

Schematic View

## Ordering Information (Note 3)

| Part Number | Case | Packaging |
|---|---|---|
| PR1001G-T | DO-41 | 5K/Tape & Reel, 13-inch |
| PR1002G-T | DO-41 | 5K/Tape & Reel, 13-inch |
| PR1003G-T | DO-41 | 5K/Tape & Reel, 13-inch |
| PR1004G-T | DO-41 | 5K/Tape & Reel, 13-inch |
| PR1005G-T | DO-41 | 5K/Tape & Reel, 13-inch |
| PR1006G-T | DO-41 | 5K/Tape & Reel, 13-inch |
| PR1007G-T | DO-41 | 5K/Tape & Reel, 13-inch |

Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3).compliant. All applicable RoHS exemptions applied.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

## Marking Information


PR100XG = Product Type Marking Code
X = 1, 2, 3, 4, 5, 6, 7
= Manufacturers' Code Marking
YWW = Date Code Marking
Y = Last Digit of Year (ex: 4 for 2014)
WW = Week Code (01 to 53)

## 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 | PR1001G | PR1002G | PR1003G | PR1004G | PR1005G | PR1006G | PR1007G | Unit |
|---|---|---|---|---|---|---|---|---|---|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage (Note 7) | $V_{RRM}$<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 4) @ $T_A$ = +55°C | $I_O$ | 1.0 | | | | | | | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$ | 30 | | | | | | | A |
| Forward Voltage Drop @ $I_F$ = 1.0A | $V_{FM}$ | 1.3 | | | | | | | V |
| Peak Reverse Current @ $T_A$ = +25°C<br>at Rated DC Blocking Voltage (Note 7) @ $T_A$ = +100°C | $I_{RM}$ | 5.0<br>50 | | | | | | | µA |
| Reverse Recovery Time (Note 6) | $t_{RR}$ | 150 | | | | 250 | 500 | | ns |
| Typical Total Capacitance (Note 5) | $C_T$ | 15 | | | | 8 | | | pF |

## Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Typical Thermal Resistance Junction to Ambient (Note 4) | $R_{\theta JA}$ | 95 | °C/W |
| Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | -65 to +150 | °C |

Notes:
4. Valid provided that leads are maintained at ambient temperature at a distance of 9.5mm from the case.
5. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
6. Measured with $I_F$ = 0.5A, $I_R$ = 1.0A, $I_{RR}$ = 0.25A. See Figure 5.
7. Short duration pulse test used to minimize self-heating effect.

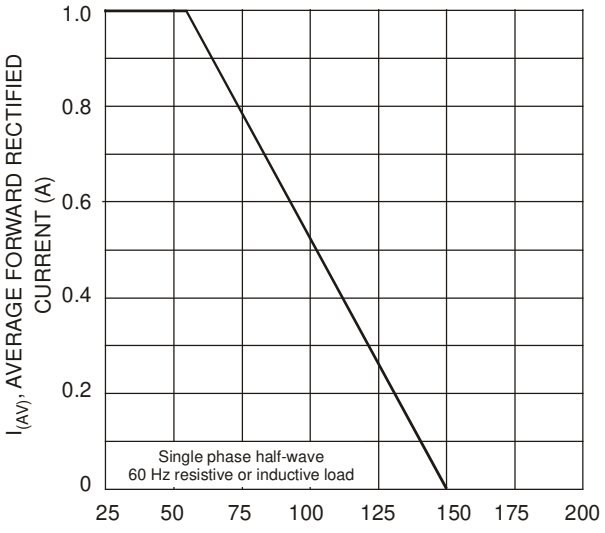



Fig. 1 Forward Derating Curve

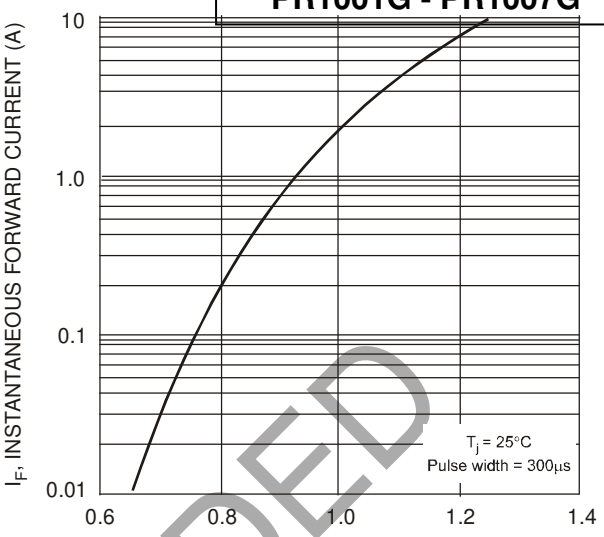



Fig. 2 Typical Forward Characteristics

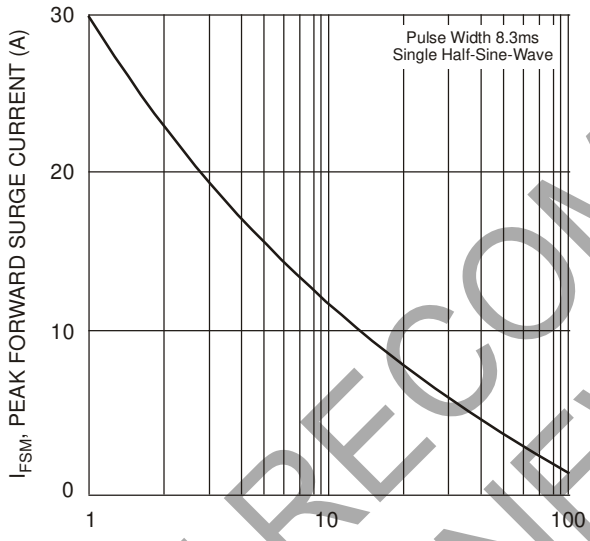



Fig. 3 Peak Forward Surge Current

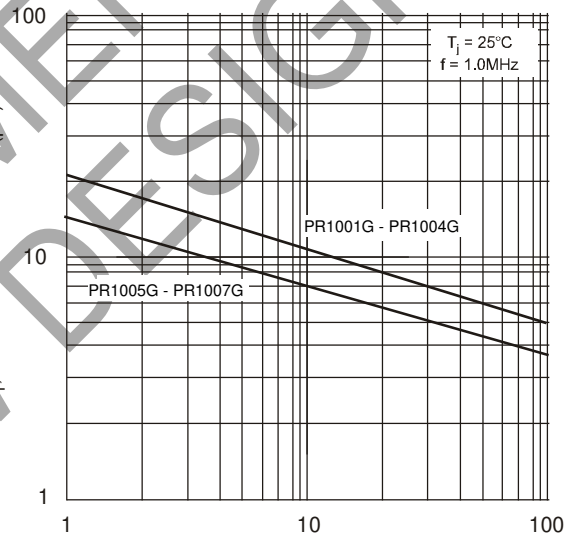
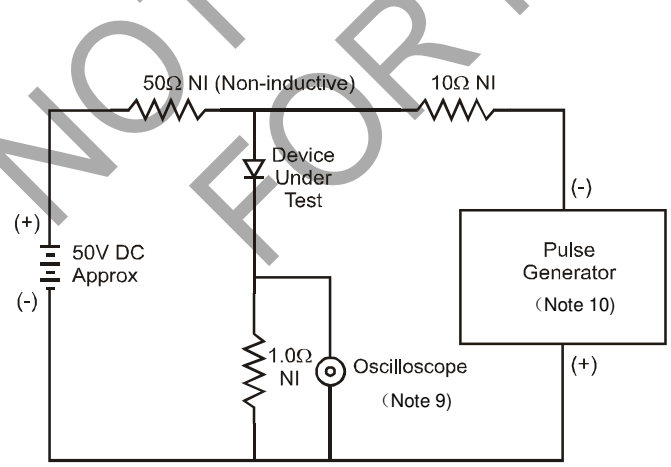
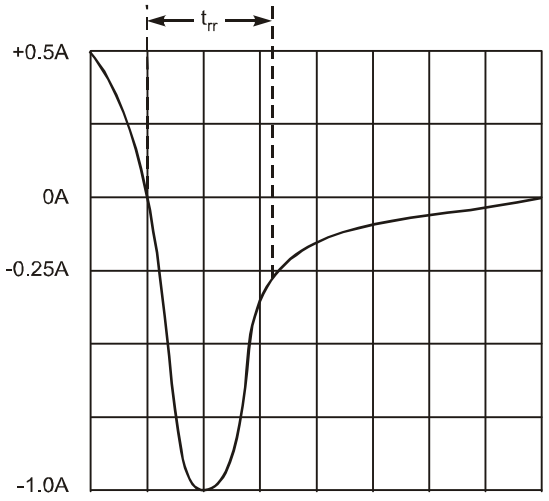



Fig. 4 Typical Total Capacitance



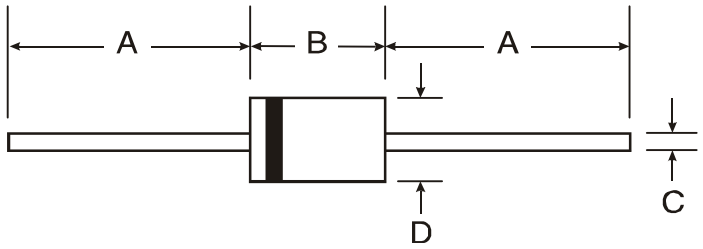

Notes:
9. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF
10. Rise Time = 10ns max. Input Impedance = 50Ω

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

## Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

**DO-41 (Plastic)**




| DO-41 (Plastic) | | |
|---|---|---|
| **Dim** | **Min** | **Max** |
| **A** | 25.40 | — |
| **B** | 4.06 | 5.21 |
| **C** | 0.71 | 0.864 |
| **D** | 2.00 | 2.72 |
| **All Dimensions in mm** | | |

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