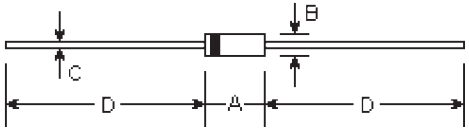
# 1N4001G THRU 1N4007G, BY133G

**GLASS PASSIVATED JUNCTION RECTIFIER**
**Reverse Voltage -** 50 to 1300 Volts
**Forward Current -** 1.0 Ampere

## Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- High temperature metallurgically bonded construction
- Glass passivated cavity-free junction
- Capable of meeting environmental standards of MIL-S-19500
- 1.0 ampere operation at $T_A$=75℃ with no thermal runaway
- Typical $I_R$ less than 0.1 μ A
- High temperature soldering guaranteed: 350℃/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3Kg) tension

DO-41




## Mechanical Data

- **Case:** DO-41 molded plastic over glass body
- **Terminals:** Plated axial leads, solderable per MIL-STD-750, method 2026
- **Polarity:** Color band denotes cathode end
- **Mounting Position:** Any
- **Weight:** 0.012 ounce, 0.335 gram

| DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| DIM | inches | | mm | | Note |
| | Min. | Max. | Min. | Max. | |
| A | 0.165 | 0.205 | 4.2 | 5.2 | |
| B | 0.079 | 0.106 | 2.0 | 2.7 | ϕ |
| C | 0.028 | 0.034 | 0.71 | 0.86 | ϕ |
| D | 1.000 | - | 25.40 | - | |

## Maximum Ratings and Electrical Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified.

| | Symbols | 1N 4001G | 1N 4002G | 1N 4003G | 1N 4004G | 1N 4005G | 1N 4006G | 1N 4007G | BY 133G | Units |
|---|---|---|---|---|---|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | 1300 | Volts |
| Maximum RMS voltage | $V_{RMS}$ | 35 | 70 | 140 | 280 | 420 | 560 | 700 | 910 | Volts |
| Maximum DC blocking voltage | $V_{DC}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | 1300 | Volts |
| Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_A$=75℃ | $I_{(AV)}$ | 1.0 | | | | | | | | Amp |
| Peak forward surge current 8.3mS single half sine-wave superimposed on rated load (MIL-STD-750D 4066 method) | $I_{FSM}$ | 30.0 | | | | | | | | Amps |
| Maximum instantaneous forward voltage at 1.0A | $V_F$ | 1.1 | | | | | | | | Volts |
| Maximum DC reverse current at rated DC blocking voltage $T_A$=25℃ / $T_A$=125℃ | $I_R$ | 5.0<br>50.0 | | | | | | | | μ A |
| Typical reverse recovery time (Note 1) | $T_{rr}$ | 2.0 | | | | | | | | μ S |
| Typical junction capacitance (Note 2) | $C_J$ | 8.0 | | | | | | | | ρ F |
| Typical thermal resistance (Note 3) | $R_{(\cdot)JA}$<br>$R_{(\cdot)JL}$ | 55.0<br>25.0 | | | | | | | | ℃/W |
| Operating junction and storage temperature range | $T_J$, $T_{STG}$ | -65 to +175 | | | | | | | | ℃ |

**Notes:**

(1) Reverse recovery test conditions: $I_F$=0.5A, $I_R$=1.0A, $I_{rr}$=0.25A

(2) Measured at 1.0MHz and applied reverse voltage of 4.0 volts

(3) Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted

## RATINGS AND CHARACTERISTIC CURVES

FIG. 1 - FORWARD CURRENT DERATING CURVE

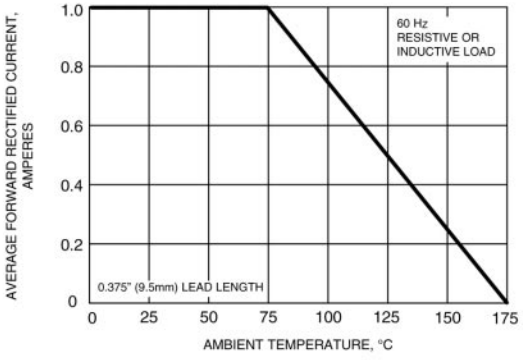



FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

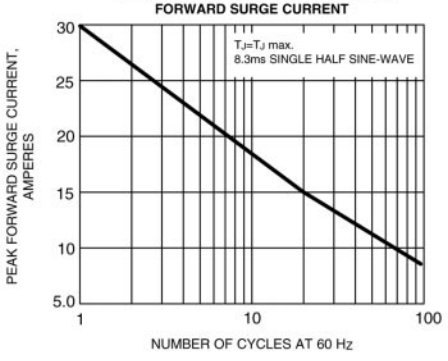



FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

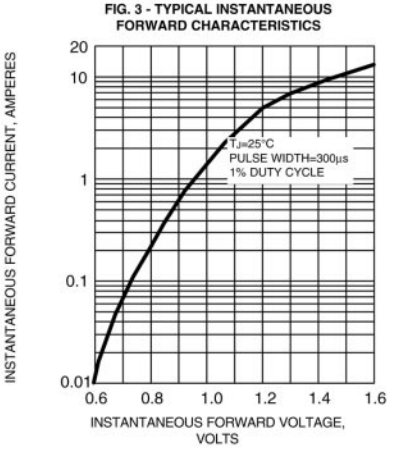



FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

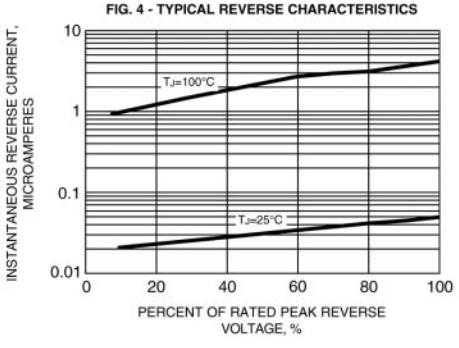



FIG. 5 - TYPICAL JUNCTION CAPACITANCE

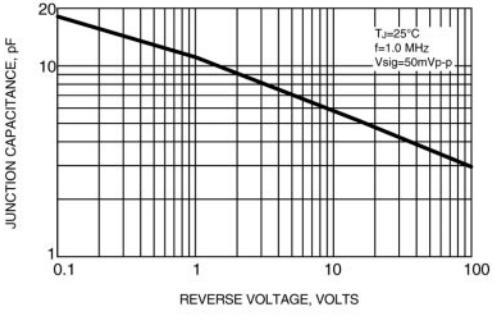



FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE