

# Silicon Diode

## **1N4007GP**

1000V / 1A

# DATASHEET

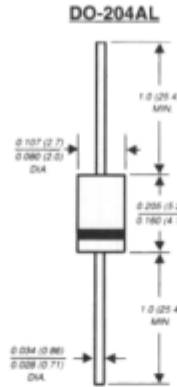
OEM – General Semiconductor

Source: General Semiconductor Databook 1998

# 1N4001GP THRU 1N4007GP

**GLASS PASSIVATED JUNCTION RECTIFIER**  
**Reverse Voltage - 50 to 1000 Volts      Forward Current - 1.0 Ampere**

**PATENTED\***



NOTE: Lead diameter is 0.026 (0.66) to 0.027 (0.69) for suffix "1" part numbers  
 Dimensions in inches and (millimeters)  
 \* Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 and brazed-lead assembly by Patent No. 3,930,306



## 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  $T_A=75^\circ\text{C}$  with no thermal runaway
- ◆ Typical  $I_R$  less than  $0.1\mu\text{A}$
- ◆ High temperature soldering guaranteed:  $350^\circ\text{C}/10$  seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

## MECHANICAL DATA

**Case:** JEDEC DO-204AL 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, 0.3 gram

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at  $25^\circ\text{C}$  ambient temperature unless otherwise specified.

|  | SYMBOLS                              | 1N 4001GP    | 1N 4002GP | 1N 4003GP | 1N 4004GP | 1N 4005GP | 1N 4006GP | 1N 4007GP | UNITS                     |
|--|--------------------------------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|---------------------------|
| * Maximum repetitive peak reverse voltage  | VRRM                                 | 50           | 100       | 200       | 400       | 600       | 800       | 1000      | Volts                     |
| * Maximum RMS voltage  | VRMS                                 | 35           | 70        | 140       | 280       | 420       | 560       | 700       | Volts                     |
| * Maximum DC blocking voltage  | VDC                                  | 50           | 100       | 200       | 400       | 600       | 800       | 1000      | Volts                     |
| * Maximum average forward rectified current<br>0.375" (9.5mm) lead length at $T_A=75^\circ\text{C}$            | $I_{(AV)}$                           | 1.0          |           |           |           |           |           |           | Amp                       |
| * Peak forward surge current<br>8.3ms single half sine-wave superimposed on rated load (JEDEC Method)          | IFSM                                 | 30.0         |           |           |           |           |           |           | Amps                      |
| Maximum instantaneous forward voltage at 1.0A  | V <sub>F</sub>                       | 1.1          |           |           |           |           |           |           | Volts                     |
| * Maximum full load reverse current, full cycle average<br>0.375" (9.5mm) lead length $T_A=75^\circ\text{C}$   | $I_{R(AV)}$                          | 30.0         |           |           |           |           |           |           | $\mu\text{A}$             |
| * Maximum DC reverse current<br>at rated DC blocking voltage $T_A=25^\circ\text{C}$<br>$T_A=125^\circ\text{C}$ | $I_R$                                | 5.0<br>50.0  |           |           |           |           |           |           | $\mu\text{A}$             |
| Typical reverse recovery time (NOTE 1)   | $t_{rr}$                             | 2.0          |           |           |           |           |           |           | $\mu\text{s}$             |
| Typical junction capacitance (NOTE 2)  | C <sub>J</sub>                       | 8.0          |           |           |           |           |           |           | pF                        |
| Typical thermal resistance (NOTE 3)  | R <sub>θJA</sub><br>R <sub>θJL</sub> | 55.0<br>25.0 |           |           |           |           |           |           | $^\circ\text{C}/\text{W}$ |
| * Operating junction and storage temperature range   | T <sub>J</sub> , T <sub>STG</sub>    | -65 to +175  |           |           |           |           |           |           | $^\circ\text{C}$          |

**NOTES:**

- (1) Reverse recovery test conditions:  $I_F=0.5\text{A}$ ,  $I_{FSM}=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$
  - (2) Measured at 1.0 MHz 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
- \*JEDEC registered values

**RATINGS AND CHARACTERISTIC CURVES 1N4001GP THRU 1N4007GP**

