

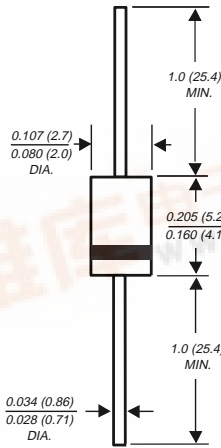
# 1N4001GP THRU 1N4007GP

## GLASS PASSIVATED JUNCTION RECTIFIER

Reverse Voltage - 50 to 1000 Volts      Forward Current - 1.0 Ampere

**PATENTED\***

DO-204AL



NOTE: Lead diameter is  $\frac{0.026}{0.023}$  ( $\frac{0.66}{0.58}$ ) for suffix "E" 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

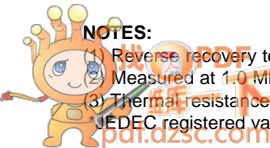
### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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	V <sub>RMS</sub>	35	70	140	280	420	560	700	Volts
* Maximum DC blocking voltage	V <sub>DC</sub>	50	100	200	400	600	800	1000	Volts
* Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_A=75^\circ\text{C}$	I <sub>(AV)</sub>	1.0							Amp
* Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	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 0.375" (9.5mm) lead length $T_A=75^\circ\text{C}$	I <sub>R(AV)</sub>	30.0							$\mu\text{A}$
* Maximum DC reverse current at rated DC blocking voltage	I <sub>R</sub>	5.0 50.0							$\mu\text{A}$
Typical reverse recovery time (NOTE 1)	t <sub>rr</sub>	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> R <sub>θJL</sub>	55.0 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:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $t_{rr}=0.25\text{A}$
  - (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

FIG. 1 - FORWARD CURRENT DERATING CURVE

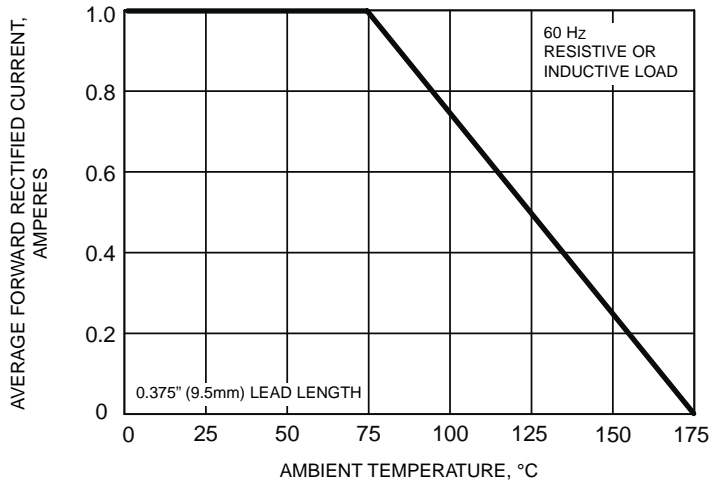


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

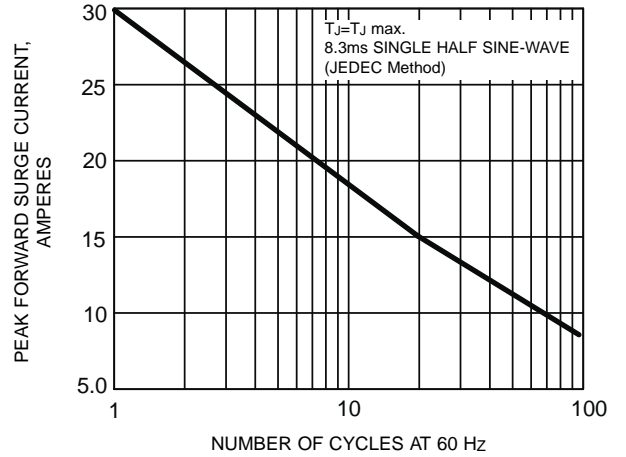


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

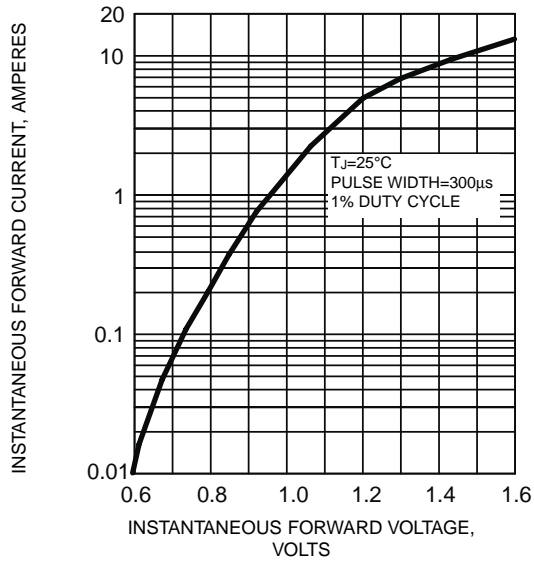


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

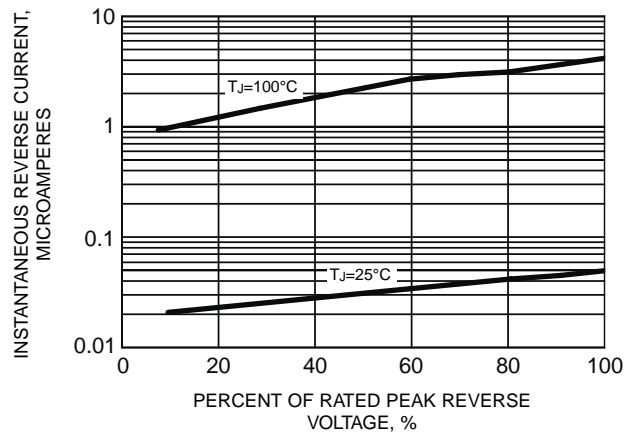


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

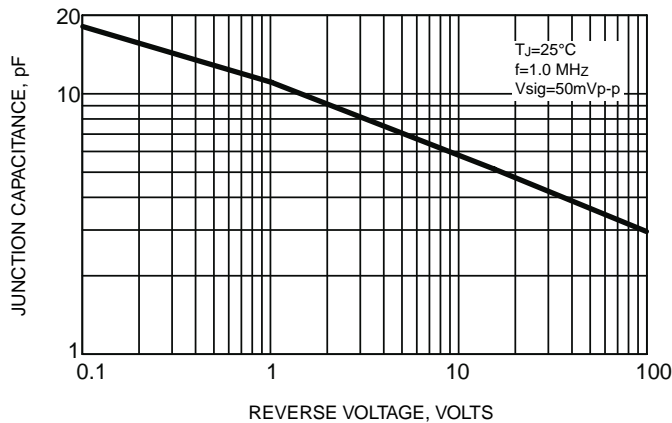


FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE

