

# 1N4001GP thru 1N4007GP

## Glass Passivated Junction Rectifier

Reverse Voltage 50 to 1000V

Forward Current 1.0A

### Features

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- High temperature metallurgically bonded construction
- Cavity-free glass passivated 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

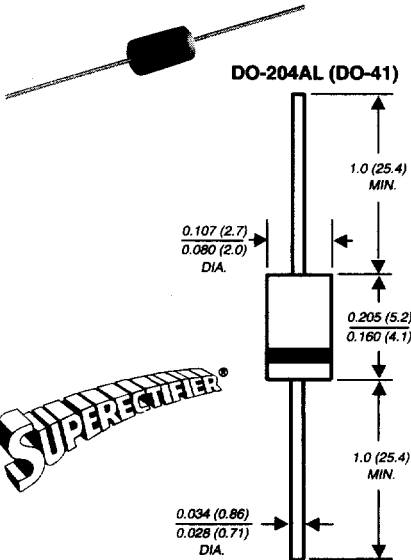
**Case:** JEDEC DO-204AL, molded plastic over glass body

**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



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

### Maximum Ratings & Thermal Characteristics

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

	SYMBOL	1N 4001GP	1N 4002GP	1N 4003GP	1N 4004GP	1N 4005GP	1N 4006GP	1N 4007GP	UNIT
* Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
* Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
* Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
* Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_A = 75^\circ\text{C}$	$I_{F(AV)}$	1.0							A
* Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	30							A
* Maximum full load reverse current, full cycle average 0.375" (9.5mm) lead length $T_A = 75^\circ\text{C}$	$I_{R(AV)}$	30							$\mu\text{A}$
Typical thermal resistance (NOTE 1)	$R_{\theta JA}$ $R_{\theta JL}$	55 25							$^\circ\text{C}/\text{W}$
* Operating junction and storage temperature range	$T_J, T_{STG}$	-65 to +175							$^\circ\text{C}$

### Electrical Characteristics

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

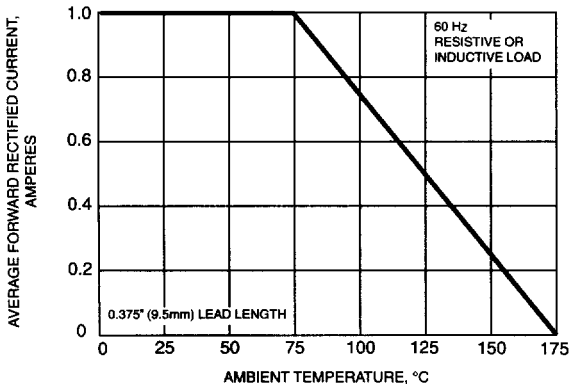
	SYMBOL	1N 4001GP	1N 4002GP	1N 4003GP	1N 4004GP	1N 4005GP	1N 4006GP	1N 4007GP	UNIT
Maximum instantaneous forward voltage at 1.0A	$V_F$	1.1							V
* Maximum DC reverse current at rated DC blocking voltage $T_A = 25^\circ\text{C}$ $T_A = 125^\circ\text{C}$	$I_R$	5.0 50							$\mu\text{A}$
Typical reverse recovery time at $I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	$t_{rr}$	2.0							$\mu\text{s}$
Typical junction capacitance at 4.0V, 1MHz	$C_J$	8.0							pF

#### NOTES:

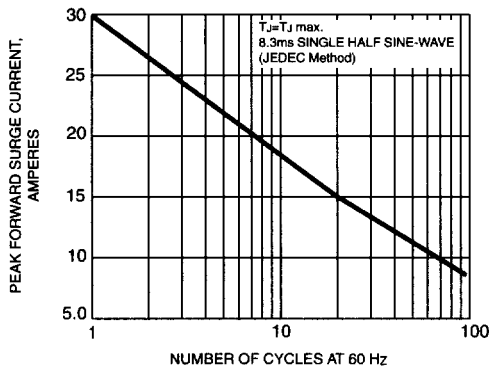
- (1) Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted  
\*JEDEC registered values

**Ratings and Characteristic Curves** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

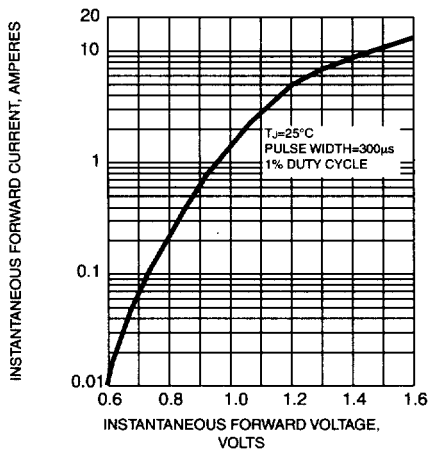
**FIG. 1 - FORWARD CURRENT DERATING CURVE**



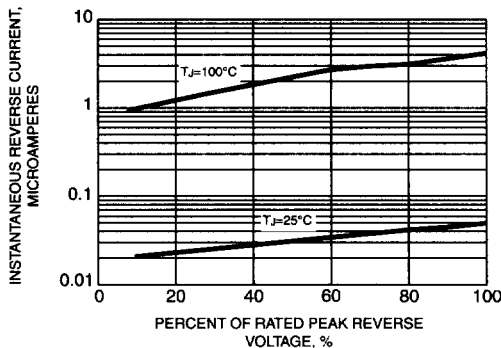
**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



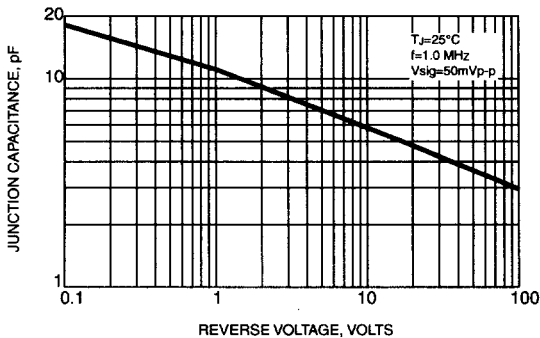
**FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



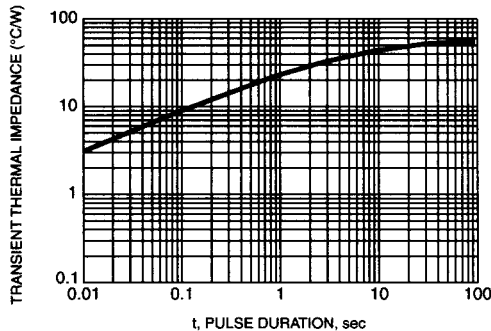
**FIG. 4 - TYPICAL REVERSE CHARACTERISTICS**



**FIG. 5 - TYPICAL JUNCTION CAPACITANCE**



**FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE**



Standard