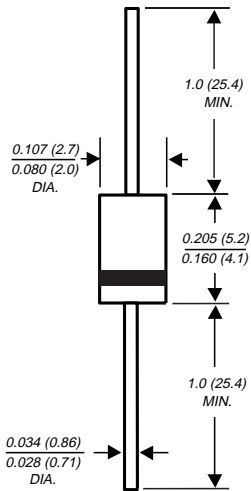


# 1N4001 THRU 1N4007

## GENERAL PURPOSE PLASTIC RECTIFIER

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

### DO-204AL



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

Dimensions in inches and (millimeters)

### FEATURES

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ Construction utilizes void-free molded plastic technique
- ◆ Low reverse leakage
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed: 250°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension



### MECHANICAL DATA

**Case:** JEDEC DO-204AL molded plastic 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°C ambient temperature unless otherwise specified.

	SYMBOLS	1N 4001	1N 4002	1N 4003	1N 4004	1N 4005	1N 4006	1N 4007	UNITS
*Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	Volts
*Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	Volts
*Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	Volts
*Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_A=75^\circ\text{C}$	$I_{(AV)}$	1.0							Amp
*Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) $T_A=75^\circ\text{C}$	$I_{FSM}$	30.0							Amps
*Maximum instantaneous forward voltage at 1.0A	$V_F$	1.1							Volts
*Maximum full load reverse current full cycle average 0.375" (9.5mm) lead length at $T_L=75^\circ\text{C}$	$I_{R(AV)}$	30.0							$\mu\text{A}$
*Maximum DC reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$ $T_A=100^\circ\text{C}$	$I_R$	5.0 50.0							$\mu\text{A}$
Typical reverse recovery time (NOTE 1)	$t_{rr}$	30.0							$\mu\text{s}$
Typical junction capacitance (NOTE 2)	$C_J$	15.0							pF
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$ $R_{\theta JL}$	50.0 25.0							$^\circ\text{C/W}$
Maximum DC blocking voltage temperature	$T_A$	+150							$^\circ\text{C}$
*Operating junction and storage temperature range	$T_J, T_{STG}$	-50 to +175							$^\circ\text{C}$

### NOTES:

(1) Measured on Tektronix Type "S" recovery plug-in. Tektronix 545 Scope or equivalent,  $I_{FM}=20\text{mA}$ ,  $I_{RM}=1\text{mA}$

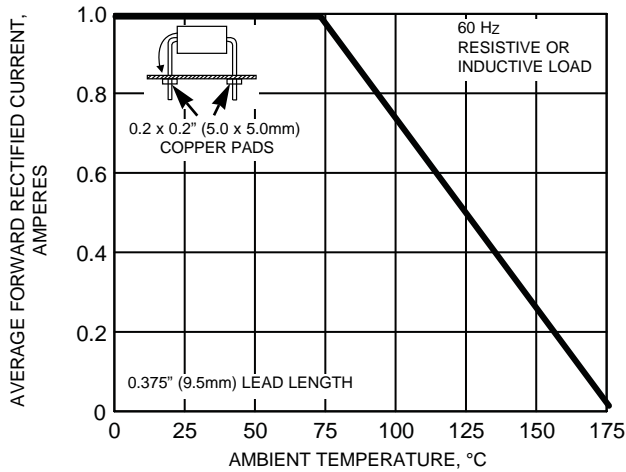
(2) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts

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

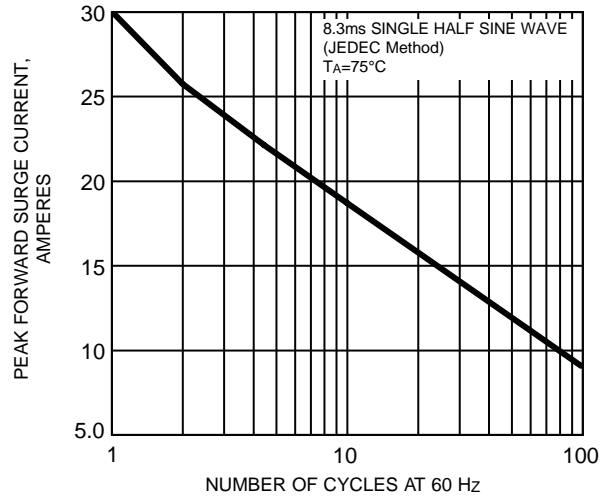
\*JEDEC registered value

# RATINGS AND CHARACTERISTIC CURVES 1N4001 THRU 1N4007

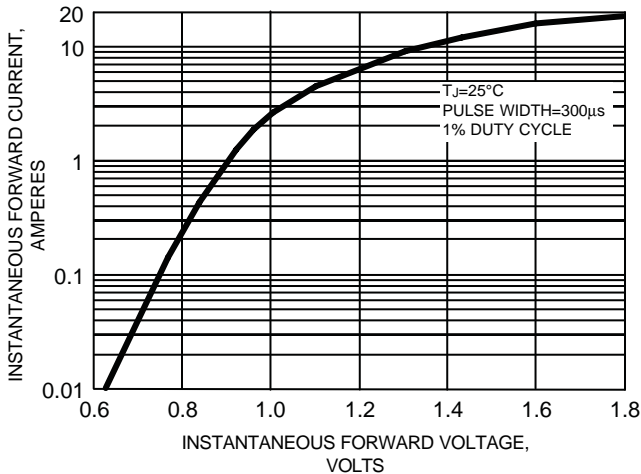
**FIG. 1 - FORWARD CURRENT DERATING CURVE**



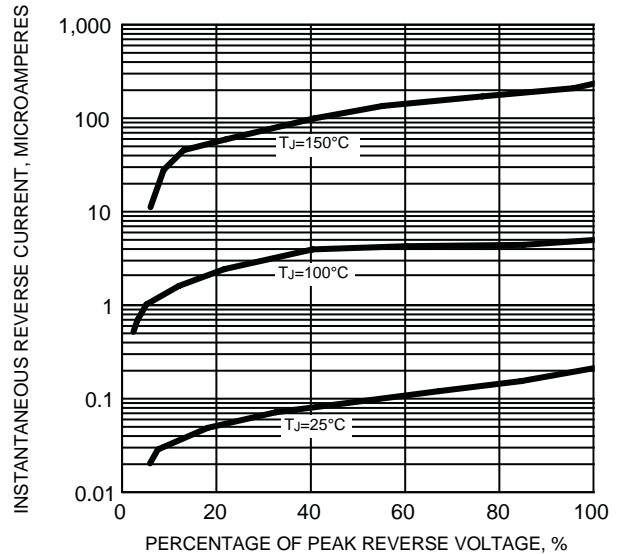
**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



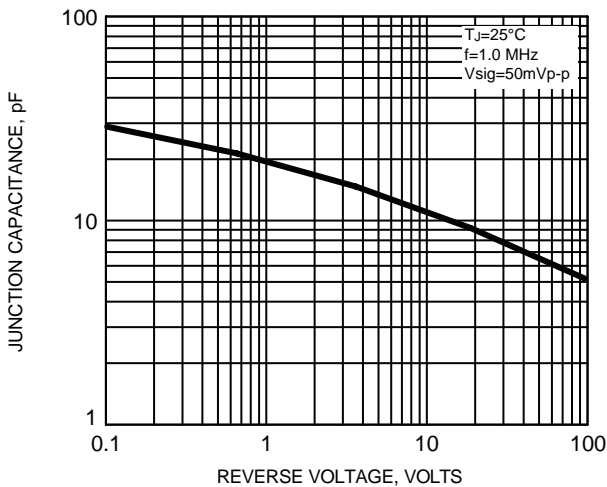
**FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



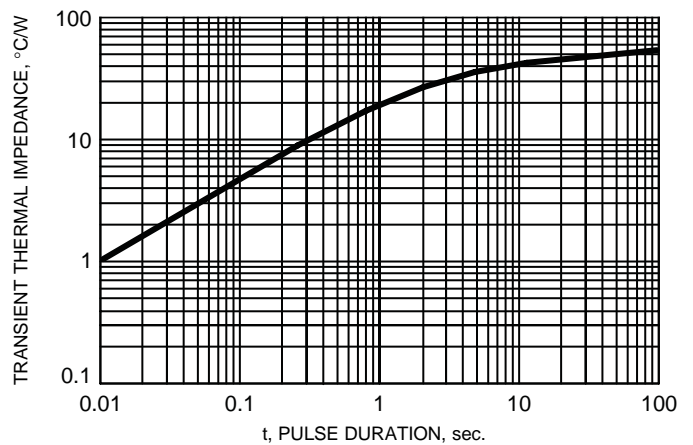
**FIG. 4 - TYPICAL REVERSE CHARACTERISTICS**



**FIG. 5 - TYPICAL JUNCTION CAPACITANCE**



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



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