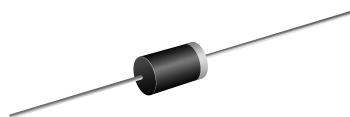


## General Purpose Plastic Rectifier



DO-204AL (DO-41)

### FEATURES

- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



### TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes application.

(Note: These devices are not Q101 qualified. Therefore, the devices specified in this datasheet have not been designed for use in automotive or Hi-Rel applications.)

### MECHANICAL DATA

**Case:** DO-204AL, molded epoxy body

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated (E3 Suffix) leads, solderable per J-STD-002B and JESD22-B102D

**Polarity:** Color band denotes cathode end

### MAJOR RATINGS AND CHARACTERISTICS

$I_{F(AV)}$	1.0 A
$V_{RRM}$	50 V to 1000 V
$I_{FSM}$	30 A
$V_F$	1.1 V
$I_R$	5.0 $\mu$ A
$T_j$ max.	150 °C

### MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007	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" (9.5 mm) lead length at $T_A = 75$ °C	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	30							A
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length $T_L = 75$ °C	$I_{R(AV)}$	30							$\mu$ A
Rating for fusing ( $t < 8.3$ ms) <sup>(1)</sup>	$I^2t$	3.7							A <sup>2</sup> sec
Operating junction and storage temperature range	$T_J, T_{STG}$	- 50 to + 150							°C

**Note:**

(1) For device using on bridge rectifier application

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007	UNIT
Maximum instantaneous forward voltage	at 1.0 A	$V_F$	1.1							V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^{\circ}\text{C}$ $T_A = 125\text{ }^{\circ}\text{C}$	$I_R$	5.0 50							$\mu\text{A}$
Typical junction capacitance	at 4.0 V, 1 MHz	$C_J$	15							pF

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)										
PARAMETER	SYMBOL	1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007	UNIT	
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>	50							°C/W	
	R <sub>θJL</sub>	25								

**Note:**

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

<b>ORDERING INFORMATION</b>				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
1N4004-E3/54	0.33	54	5500	13" Diameter Paper Tape & Reel
1N4004-E3/73	0.33	73	3000	Ammo Pack Packaging

**RATINGS AND CHARACTERISTICS CURVES**

( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

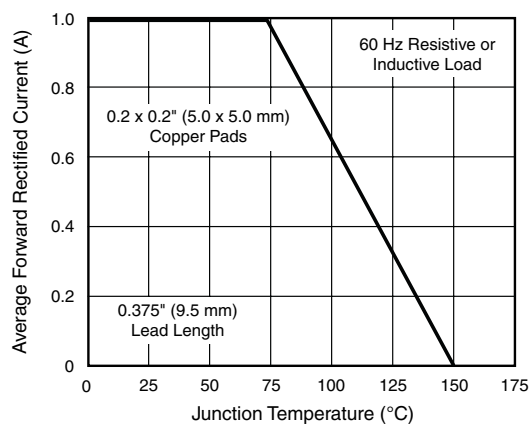


Figure 1. Forward Current Derating Curve

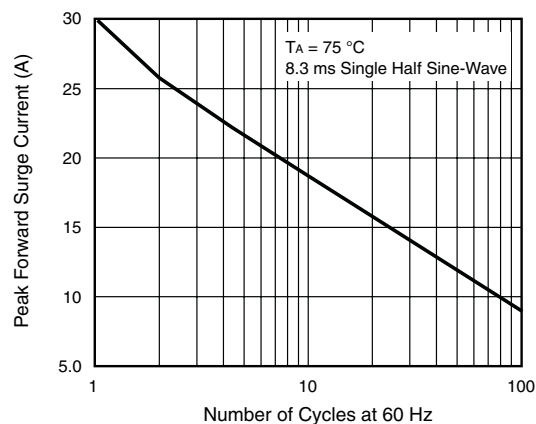


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

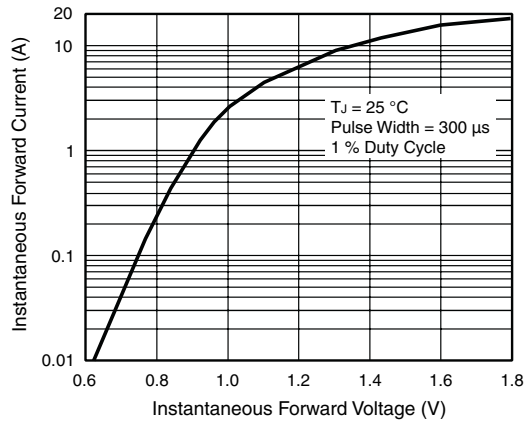


Figure 3. Typical Instantaneous Forward Characteristics

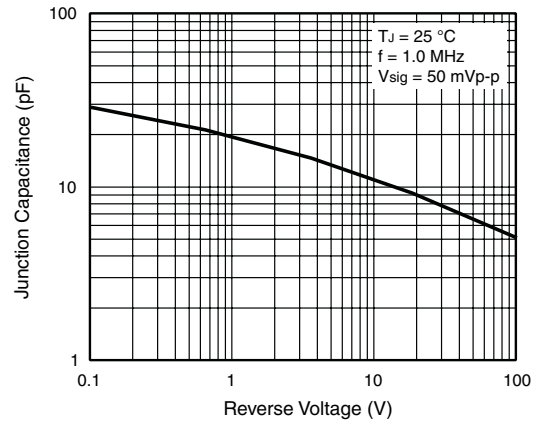


Figure 5. Typical Junction Capacitance

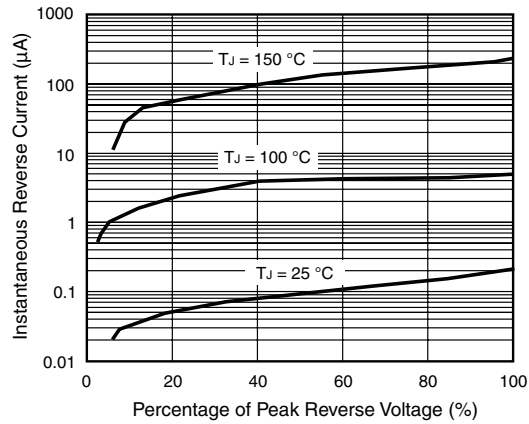


Figure 4. Typical Reverse Characteristics

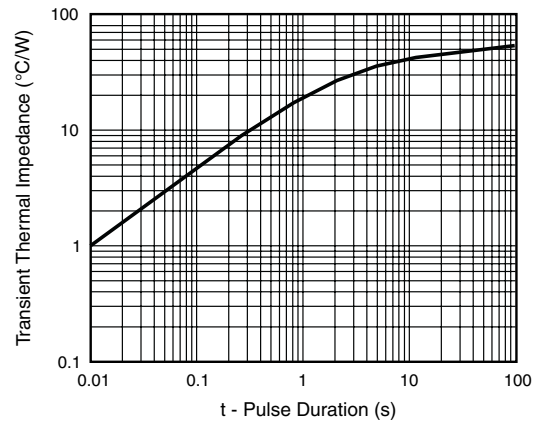
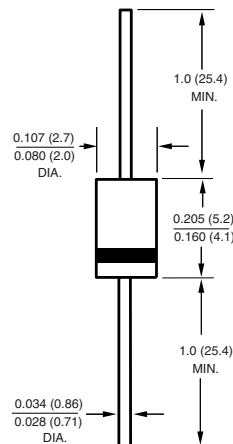


Figure 6. Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-204AL (DO-41)



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



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