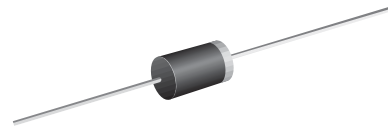




## General Purpose Plastic Rectifier

### 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



DO-204AL (DO-41)

### Features

- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder Dip 260 °C, 40 seconds



### 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

### 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.)

### Maximum Ratings

( $T_A = 25\text{ °C}$  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 $T_A = 75\text{ °C}$	$I_{F(AV)}$	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 $T_L = 75\text{ °C}$	$I_{R(AV)}$	30							$\mu$ A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 50 to + 150							°C

### Electrical Characteristics

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

Parameter	Test condition	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

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

Parameter	Symbol	1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007	Unit
Typical thermal resistance(1)	$R_{\theta JA}$ $R_{\theta JL}$	50 25							$^\circ\text{C/W}$

Notes:

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

### Ratings and Characteristics Curves

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

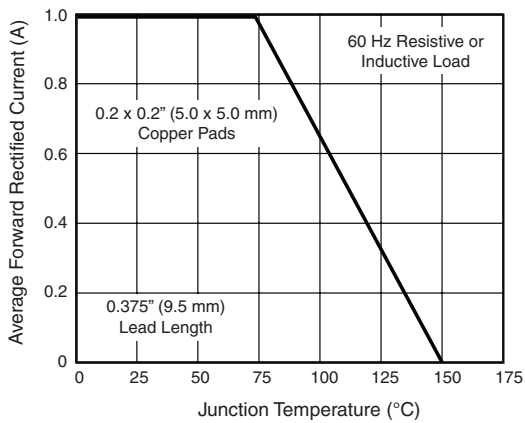


Figure 1. Forward Current Derating Curve

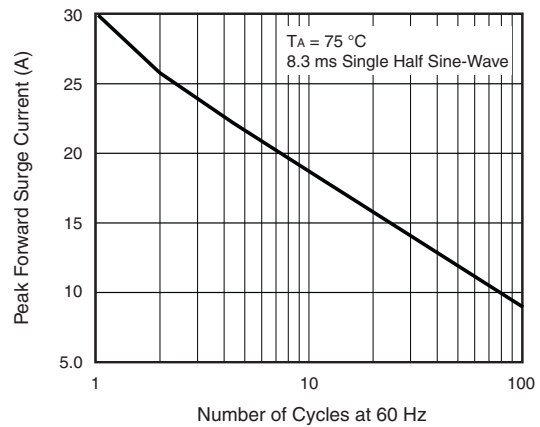


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

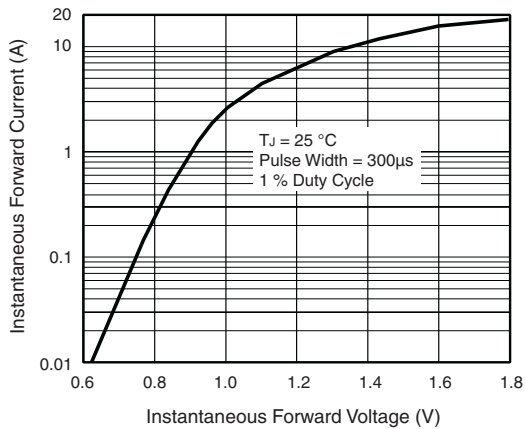


Figure 3. Typical Instantaneous Forward Characteristics

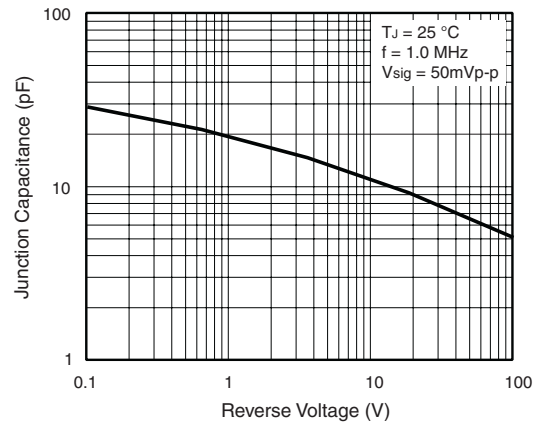


Figure 5. Typical Junction Capacitance

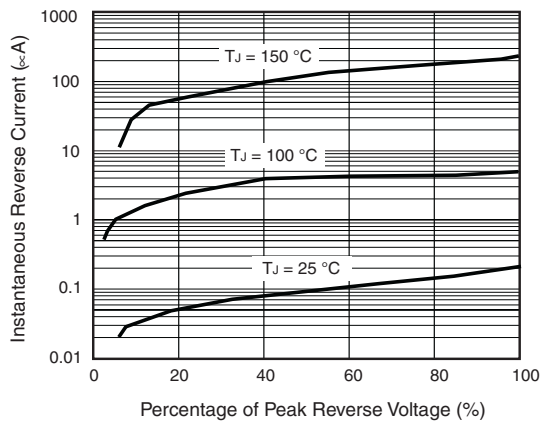


Figure 4. Typical Reverse Characteristics

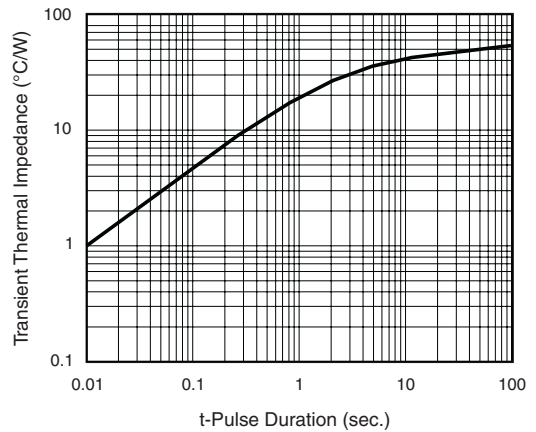
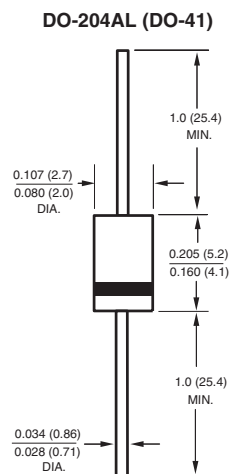


Figure 6. Typical Transient Thermal Impedance

## Package outline dimensions in inches (millimeters)



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



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