

## 1A, 50V - 1000V Standard Rectifier

### FEATURES

- Glass passivated chip junction
- High current capability, Low  $V_F$
- High reliability
- High surge current capability
- Low power loss, high efficiency
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- General purpose

### MECHANICAL DATA

- Case: DO-204AL (DO-41)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 0.330g (approximately)

| KEY PARAMETERS |                  |      |
|----------------|------------------|------|
| PARAMETER      | VALUE            | UNIT |
| $I_F$          | 1                | A    |
| $V_{RRM}$      | 50 - 1000        | V    |
| $I_{FSM}$      | 30               | A    |
| $T_{J\ MAX}$   | 150              | °C   |
| Package        | DO-204AL (DO-41) |      |
| Configuration  | Single die       |      |



DO-204AL (DO-41)



| ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)        |              |             |           |           |           |           |           |           |      |
|------------------------------------------------------------------------------------|--------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|------|
| PARAMETER                                                                          | SYMBOL       | 1N4001G-K   | 1N4002G-K | 1N4003G-K | 1N4004G-K | 1N4005G-K | 1N4006G-K | 1N4007G-K | UNIT |
| Marking code on the device                                                         |              | 1N4001G     | 1N4002G   | 1N4003G   | 1N4004G   | 1N4005G   | 1N4006G   | 1N4007G   |      |
| Repetitive peak reverse voltage                                                    | $V_{RRM}$    | 50          | 100       | 200       | 400       | 600       | 800       | 1000      | V    |
| Reverse voltage, total rms value                                                   | $V_{R(RMS)}$ | 35          | 70        | 140       | 280       | 420       | 560       | 700       | V    |
| Forward current                                                                    | $I_F$        | 1           |           |           |           |           |           |           | A    |
| Surge peak forward current, 8.3ms single half sine wave superimposed on rated load | $I_{FSM}$    | 30          |           |           |           |           |           |           | A    |
| Junction temperature                                                               | $T_J$        | -55 to +150 |           |           |           |           |           |           | °C   |
| Storage temperature                                                                | $T_{STG}$    | -55 to +150 |           |           |           |           |           |           | °C   |

**THERMAL PERFORMANCE**

| PARAMETER                              | SYMBOL          | TYP | UNIT |
|----------------------------------------|-----------------|-----|------|
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 80  | °C/W |

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

| PARAMETER                                    | CONDITIONS                                | SYMBOL | TYP | MAX | UNIT          |
|----------------------------------------------|-------------------------------------------|--------|-----|-----|---------------|
| Forward voltage <sup>(1)</sup>               | $I_F = 1\text{A}, T_J = 25^\circ\text{C}$ | $V_F$  | -   | 1   | V             |
| Reverse current @ rated $V_R$ <sup>(2)</sup> | $T_J = 25^\circ\text{C}$                  | $I_R$  | -   | 5   | $\mu\text{A}$ |
|                                              | $T_J = 125^\circ\text{C}$                 |        | -   | 100 | $\mu\text{A}$ |
| Junction capacitance                         | 1MHz, $V_R = 4.0\text{V}$                 | $C_J$  | 10  | -   | pF            |

**Notes:**

1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

**ORDERING INFORMATION**

| ORDERING CODE <sup>(1)</sup> | PACKAGE          | PACKING             |
|------------------------------|------------------|---------------------|
| 1N4xG-K                      | DO-204AL (DO-41) | 5,000 / Tape & Reel |
| 1N4xG-K A0G                  | DO-204AL (DO-41) | 3,000 / Ammo box    |

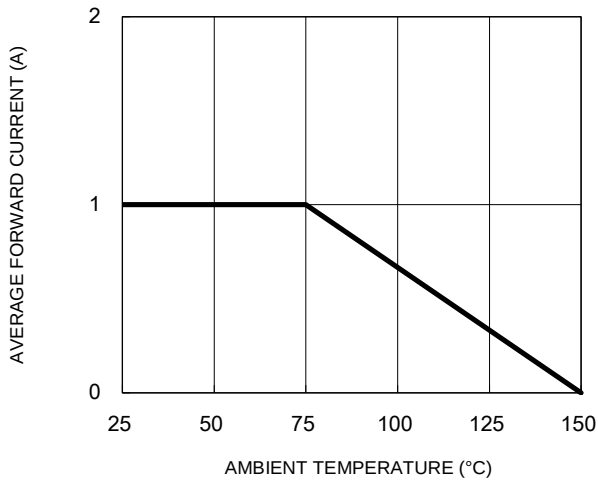
**Notes:**

1. "x" defines voltage from 50V (1N4001G-K) to 1000V (1N4007G-K)

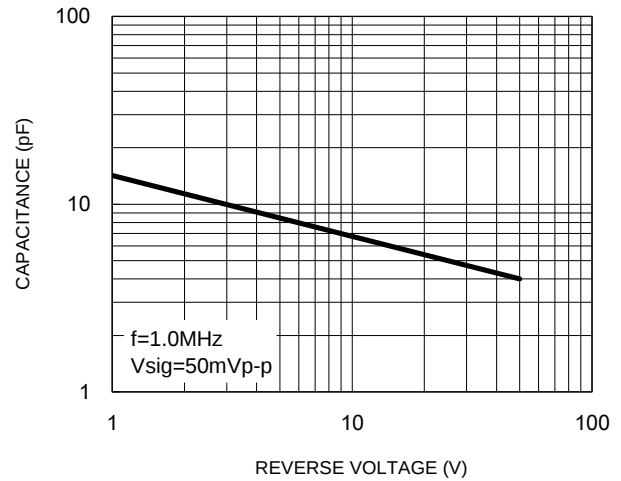
## CHARACTERISTICS CURVES

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

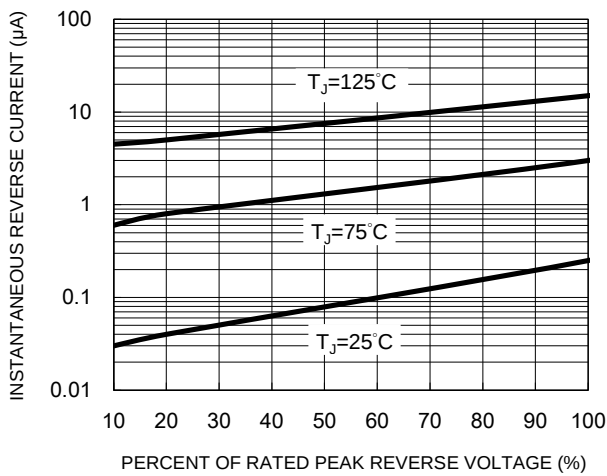
**Fig.1 Forward Current Derating Curve**



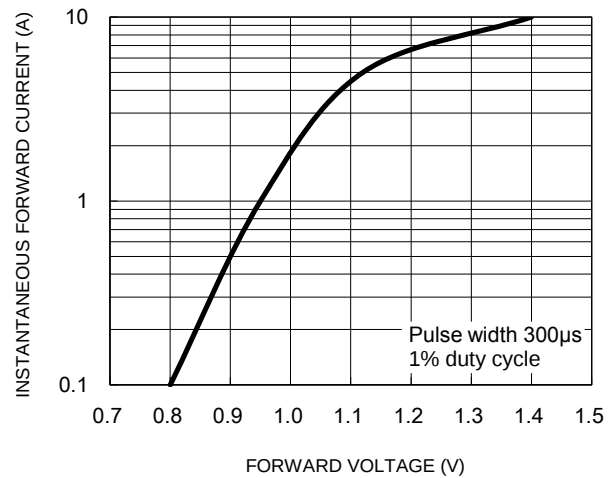
**Fig.2 Typical Junction Capacitance**



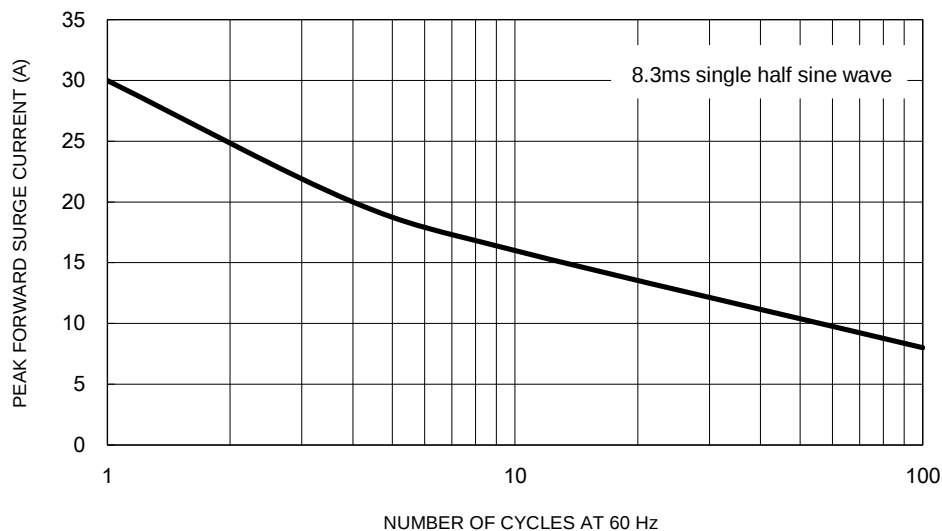
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**

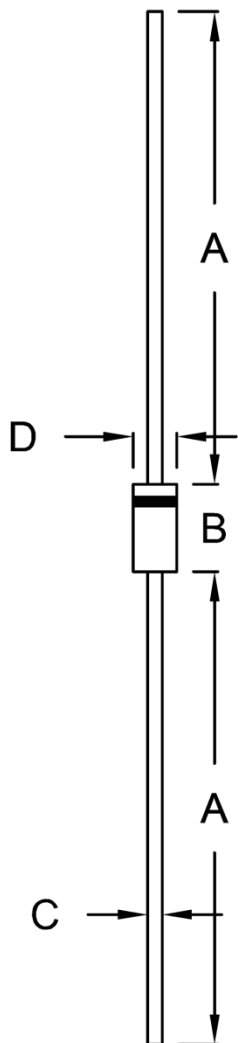


**Fig.5 Maximum Non-Repetitive Forward Surge Current**



## PACKAGE OUTLINE DIMENSIONS

DO-204AL (DO-41)



| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min.      | Max. | Min.        | Max.  |
| A    | 25.40     | -    | 1.000       | -     |
| B    | 4.20      | 5.20 | 0.165       | 0.205 |
| C    | 0.71      | 0.86 | 0.028       | 0.034 |
| D    | 2.00      | 2.70 | 0.079       | 0.106 |

## MARKING DIAGRAM



P/N = Marking Code  
 G = Green Compound  
 YWW = Date Code  
 F = Factory Code

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