# 1A, 50V - 600V Glass Passivated Fast Recovery Rectifiers

## FEATURES

- High efficiency, Low VF
- High current capability
- High reliability
- High surge current capability
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

## APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- TV
- Monitor

## MECHANICAL DATA

- Case: DO-204AL (DO-41)
- Molding compound meets UL 94V-0 flammability rating
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 0.33 g (approximately)

| KEY PARAMETERS | | |
|---|---|---|
| **PARAMETER** | **VALUE** | **UNIT** |
| $I_{F(AV)}$ | 1 | A |
| $V_{RRM}$ | 50 - 600 | V |
| $I_{FSM}$ | 30 | A |
| $T_{J\ MAX}$ | 150 | °C |
| Package | DO-204AL (DO-41) | |
| Configuration | Single Die | |

Pb-Free RoHS COMPLIANT

**DO-204AL (DO-41)**

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

| PARAMETER | SYMBOL | 1N4933 G-K | 1N4934 G-K | 1N4935 G-K | 1N4936 G-K | 1N4937 G-K | UNIT |
|---|---|---|---|---|---|---|---|
| Marking code on the device | | 1N4933G | 1N4934G | 1N4935G | 1N4936G | 1N4937G | |
| Repetitive peak reverse voltage | $V_{RRM}$ | 50 | 100 | 200 | 400 | 600 | V |
| Reverse voltage, total rms value | $V_{R(RMS)}$ | 35 | 70 | 140 | 280 | 420 | V |
| Maximum DC blocking voltage | $V_{DC}$ | 50 | 100 | 200 | 400 | 600 | V |
| Forward current | $I_{F(AV)}$ | 1 | | | | | A |
| Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode | $I_{FSM}$ | 30 | | | | | A |
| Junction temperature | $T_J$ | - 55 to +150 | | | | | °C |
| Storage temperature | $T_{STG}$ | - 55 to +150 | | | | | °C |

## THERMAL PERFORMANCE

| PARAMETER | SYMBOL | LIMIT | UNIT |
|---|---|---|---|
| Junction-to-ambient thermal resistance | $R_{\Theta JA}$ | 65 | °C/W |

## ELECTRICAL SPECIFICATIONS ($T_A$ = 25°C unless otherwise noted)

| PARAMETER | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
|---|---|---|---|---|---|
| Forward voltage per diode (1) | $I_F$ = 1A, $T_J$ = 25°C | $V_F$ | - | 1.2 | V |
| Reverse current @ rated $V_R$ per diode (2) | $T_J$ = 25°C | $I_R$ | - | 5 | μA |
| | $T_J$ = 125°C | | - | 150 | μA |
| Junction capacitance | 1 MHz, $V_R$=4.0V | $C_J$ | 10 | - | pF |
| Reverse recovery time | $I_F$=0.5A , $I_R$=1.0A $I_{RR}$=0.25A | $t_{rr}$ | - | 200 | ns |

**Notes:**

1. Pulse test with PW=0.3 ms
2. Pulse test with PW=30 ms

## ORDERING INFORMATION

| PART NO. | PACKING CODE | PACKING CODE SUFFIX(*) | PACKAGE | PACKING |
|---|---|---|---|---|
| 1N493xG-K (Note 1) | A0 | G | DO-41 | 3,000 / Ammo box (52mm taping) |
| | R0 | | DO-41 | 5,000 / 13" Paper reel |
| | R1 | | DO-41 | 5,000 / 13" Paper reel (Reverse) |
| | B0 | | DO-41 | 1,000 / Bulk packing |

**Note:**

1. "x" defines voltage from 50V (1N4933G-K) to 600V (1N4937G-K)

*: Optional available

## EXAMPLE P/N

| EXAMPLE P/N | PART NO. | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
|---|---|---|---|---|
| 1N4933G-K A0G | 1N4933G-K | A0 | G | Green compound |

## CHARACTERISTICS CURVES

($T_A$ = 25°C unless otherwise noted)

**Fig1. Forward Current Derating Curve**

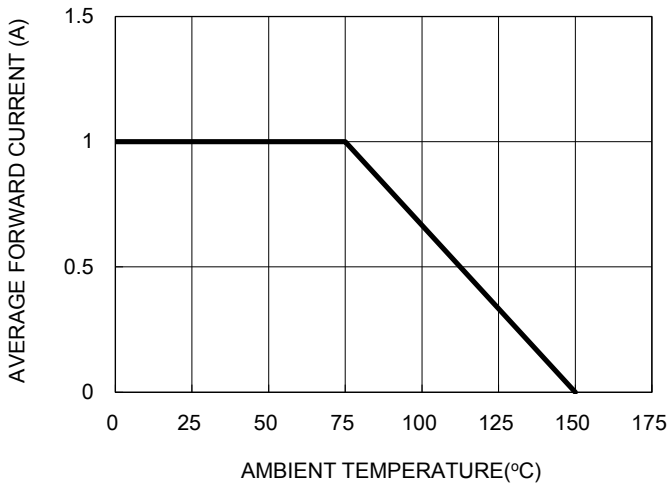



**Fig2. Typical Junction Capacitance**

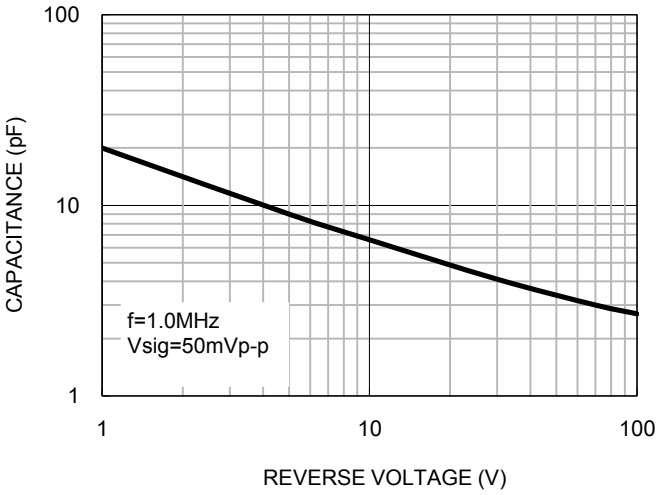



**Fig3. Typical Reverse Characteristics**

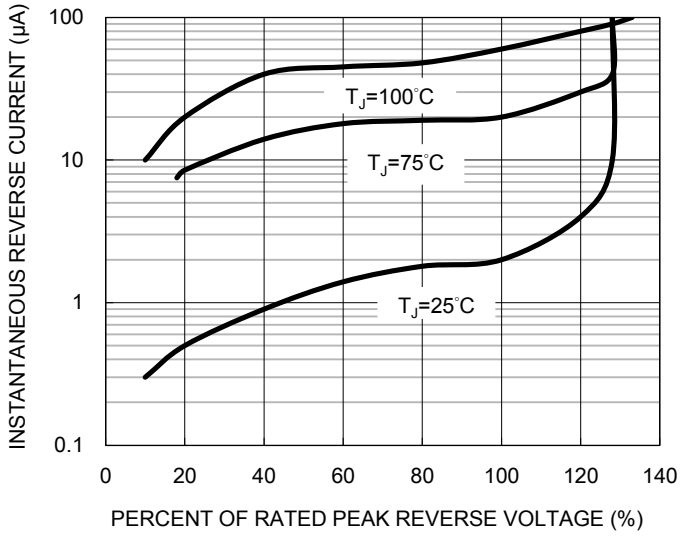



**Fig4. Typical Forward Characteristics**

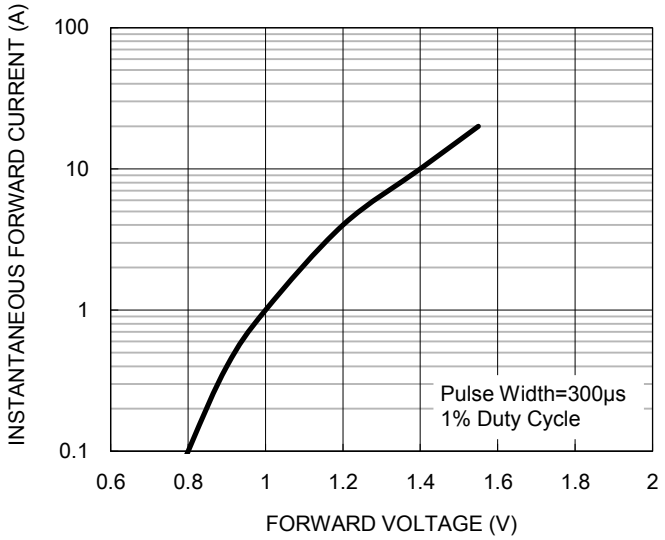


**Fig5. Maximum Non-repetitive Forward Surge Current**

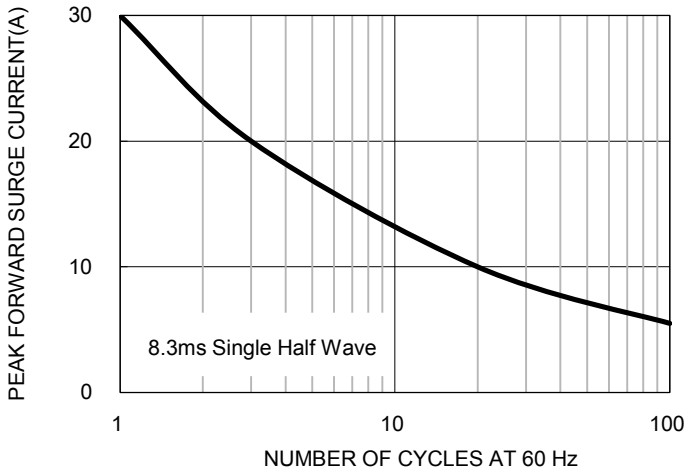
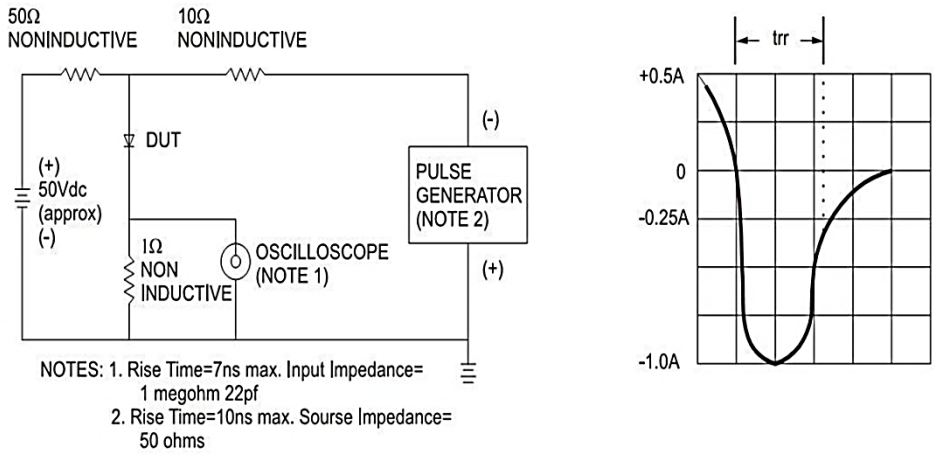
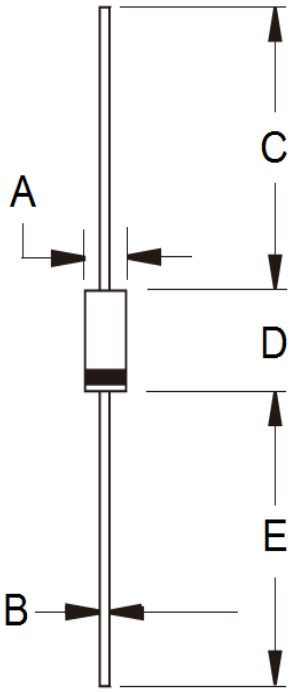



**Fig6. Reverse Recovery Time Characteristic And Test Circuit Diagram**



## PACKAGE OUTLINE DIMENSIONS

**DO-204AL (DO-41)**




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

## MARKING DIAGRAM


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

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