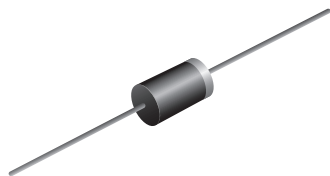




**THE DATASHEET OF**  
**31GF6-M3/73**



## Ultrafast Plastic Rectifier


**DO-201AD**

### FEATURES

- Glass passivated pellet chip junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
 COMPLIANT  
 HALOGEN  
**FREE**

### TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

### MECHANICAL DATA

**Case:** DO-201AD

Molding compound meets UL 94 V-0 flammability rating  
 Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test

**Polarity:** Color band denotes cathode end

| PRIMARY CHARACTERISTICS |            |
|-------------------------|------------|
| $I_{F(AV)}$             | 3.0 A      |
| $V_{RRM}$               | 600 V      |
| $I_{FSM}$               | 90 A       |
| $t_{rr}$                | 30 ns      |
| $V_F$                   | 1.6 V      |
| $T_J$ max.              | 150 °C     |
| Package                 | DO-201AD   |
| Diode variations        | Single die |

| MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)                                  |                |             |      |
|--|----------------|-------------|------|
| PARAMETER  | SYMBOL         | VALUE       | UNIT |
| Maximum repetitive peak reverse voltage  | $V_{RRM}$      | 600         | V    |
| Maximum RMS voltage  | $V_{RMS}$      | 420         |      |
| Maximum DC blocking voltage  | $V_{DC}$       | 600         |      |
| Maximum average forward rectified current, 0.375" (9.5 mm) lead length at $T_L = 110$ °C | $I_{F(AV)}$    | 3.0         | A    |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load       | $I_{FSM}$      | 90          |      |
| Operating junction and storage temperature range   | $T_J, T_{STG}$ | -40 to +150 | °C   |
| Reverse avalanche energy (8/20 $\mu$ s surge)  | $E_{AR}$       | 10          | mJ   |

| ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted) |   |             |       |         |
|--|---|-------------|-------|---------|
| PARAMETER  | TEST CONDITIONS                                 | SYMBOL      | VALUE | UNIT    |
| Minimum reverse breakdown voltage                                  | 10 $\mu$ A                                      | $V_{BR}$    | 600   | V       |
| Maximum instantaneous forward voltage                              | 3.0 A   | $V_F^{(1)}$ | 1.6   |         |
| Maximum DC reverse current at rated DC blocking voltage            |   | $I_R$       | 20    | $\mu$ A |
| Maximum reverse recovery time                                      | $I_F = 0.5$ A, $I_R = 1.0$ A, $I_{rr} = 0.25$ A | $t_{rr}$    | 30    | ns      |

**Note**

(1) Pulse test: 300  $\mu$ s pulse width, 1 % duty cycle



| THERMAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) |                       |       |                    |
|--|-----------------------|-------|--------------------|
| PARAMETER  | SYMBOL                | VALUE | UNIT               |
| Typical thermal resistance   | $R_{\theta JA}^{(1)}$ | 30    | $^\circ\text{C/W}$ |
|  | $R_{\theta JL}^{(1)}$ | 8.0   |                    |

**Note**

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length

| ORDERING INFORMATION (Example) |                 |                        |               |                                  |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N                  | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                    |
| 31GF6-M3/54                    | 1.13            | 54                     | 1400          | 13" diameter paper tape and reel |
| 31GF6-M3/73                    | 1.13            | 73                     | 1000          | Ammo pack packaging              |

**RATINGS AND CHARACTERISTICS CURVES ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)**

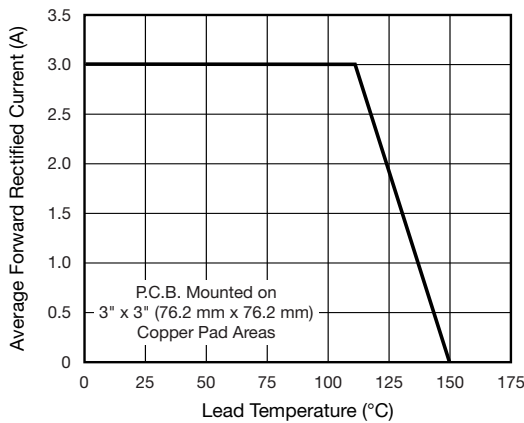


Fig. 1 - Maximum Forward Current Derating Curve

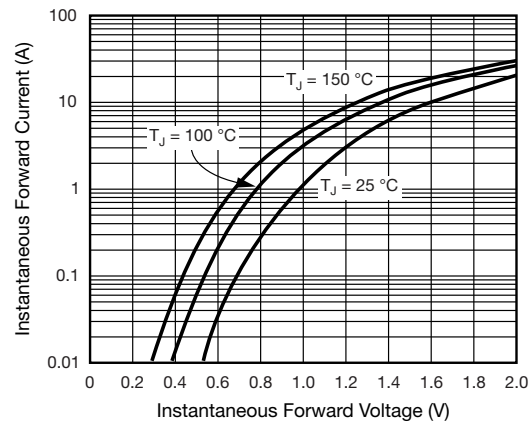


Fig. 3 - Typical Forward Voltage

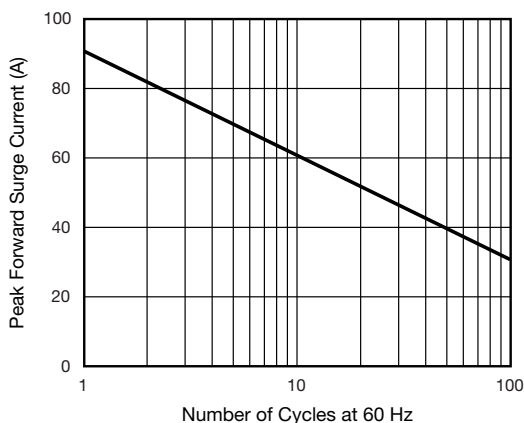


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

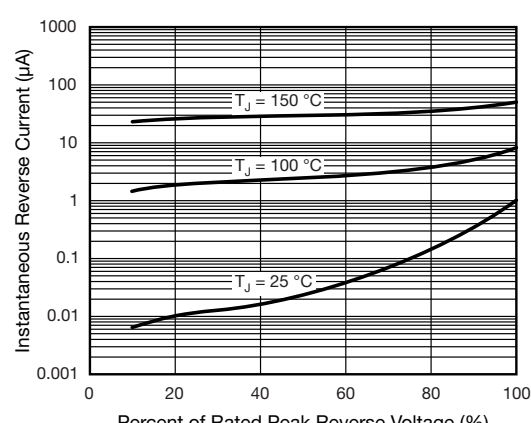


Fig. 4 - Typical Reverse Current

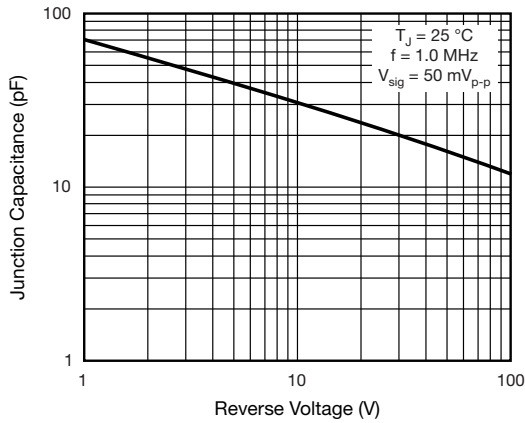
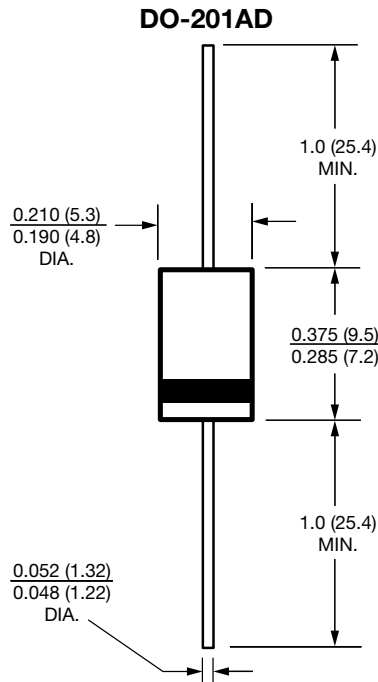


Fig. 5 - Typical Junction Capacitance

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)





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