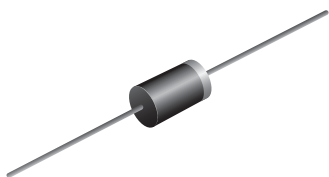


## Ultrafast Plastic Rectifier



DO-201AD

### FEATURES

- Glass passivated 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
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



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

### 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
$T_J \text{ max.}$	150 °C

### 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

### MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	600	V
Maximum RMS voltage	$V_{RMS}$	420	V
Maximum DC blocking voltage	$V_{DC}$	600	V
Maximum average forward rectified current, 0.375" (9.5 mm) lead length at $T_L = 110\text{ °C}$	$I_{F(AV)}$	3.0	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	90	A
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 <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Minimum reverse breakdown voltage	10 μA	V <sub>BR</sub>	600	V
Maximum instantaneous forward voltage	3.0 A	V <sub>F</sub> <sup>(1)</sup>	1.6	V
Maximum DC reverse current at rated DC blocking voltage		I <sub>R</sub>	20	μA
Maximum reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A	t <sub>rr</sub>	30	ns

**Note**

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	30	°C/W
	R <sub>θJL</sub> <sup>(1)</sup>	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<sub>A</sub> = 25 °C unless otherwise noted)

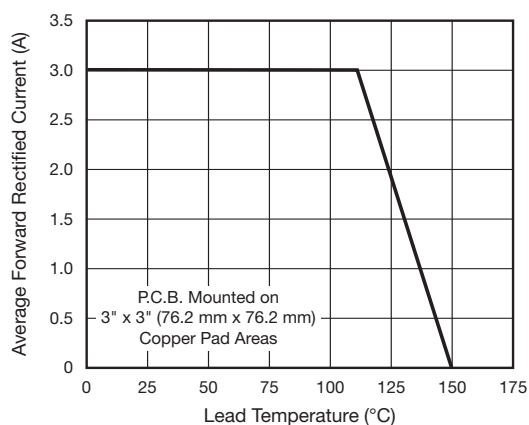


Fig. 1 - Maximum Forward Current Derating Curve

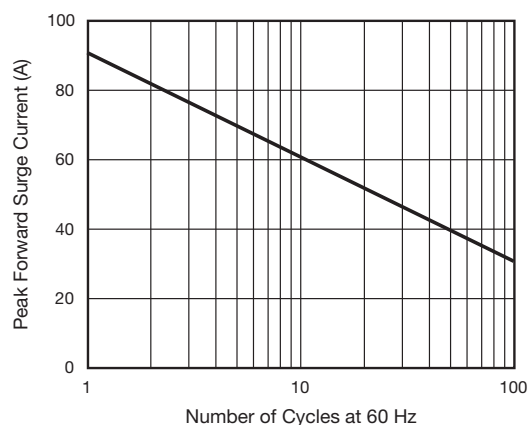


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

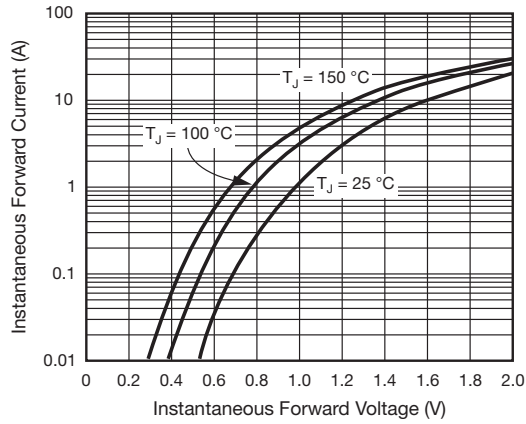


Fig. 3 - Typical Forward Voltage

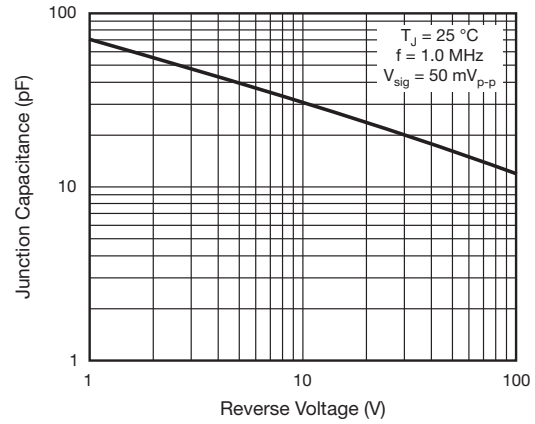


Fig. 5 - Typical Junction Capacitance

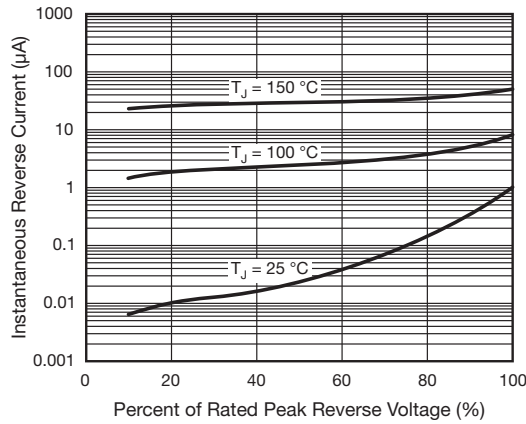
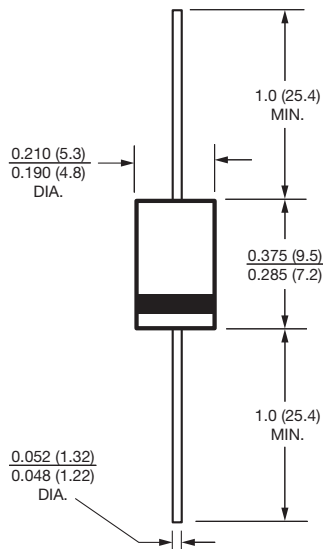


Fig. 4 - Typical Reverse Current

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)  
DO-201AD





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