

## 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


**RoHS**  
COMPLIANT

### 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-E3 - RoHS compliant, commercial grade

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

E3 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** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

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

**Note**

(1) Pulse test: 300  $\mu\text{s}$  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-E3/54	1.13	54	1400	13" diameter paper tape and reel
31GF6-E3/73	1.13	73	1000	Ammo pack packaging

**RATINGS AND CHARACTERISTICS CURVES**

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

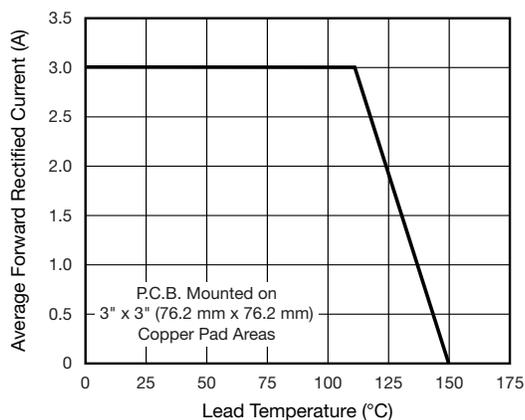


Fig. 1 - Maximum Forward Current Derating Curve

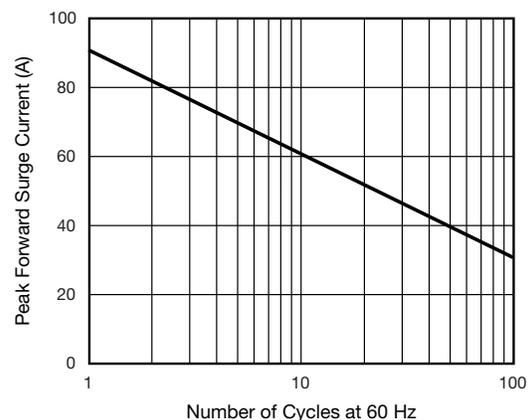


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

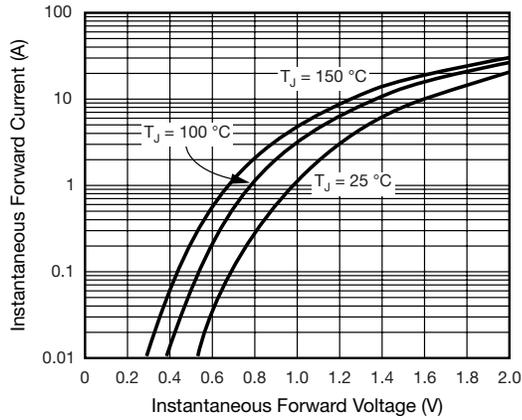


Fig. 3 - Typical Forward Voltage

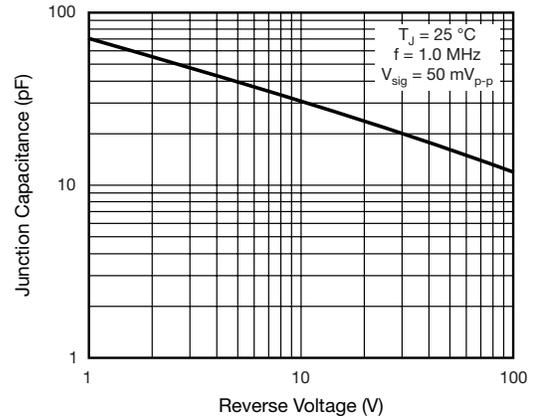


Fig. 5 - Typical Junction Capacitance

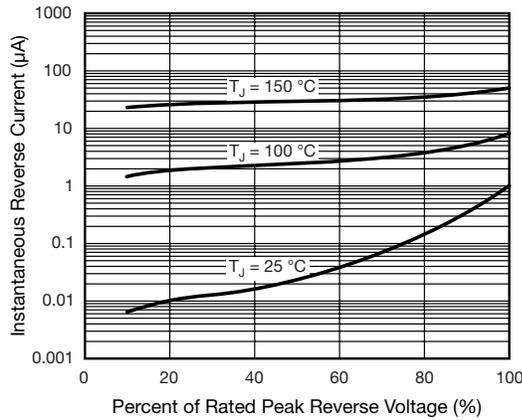
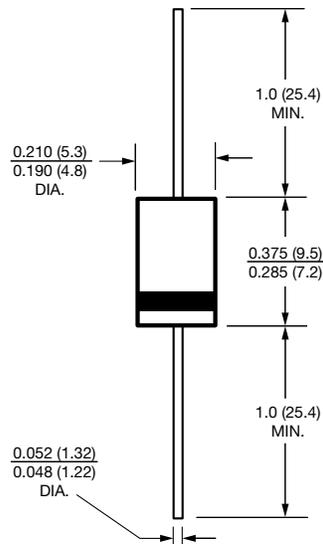


Fig. 4 - Typical Reverse Current

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

**DO-201AD**




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