

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 μ 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 μA	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	μA
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 μs 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)

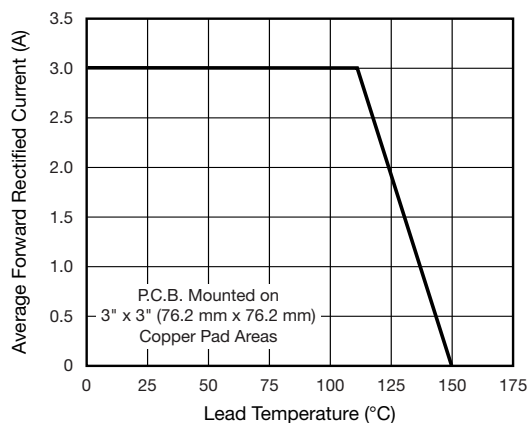


Fig. 1 - Maximum Forward Current Derating Curve

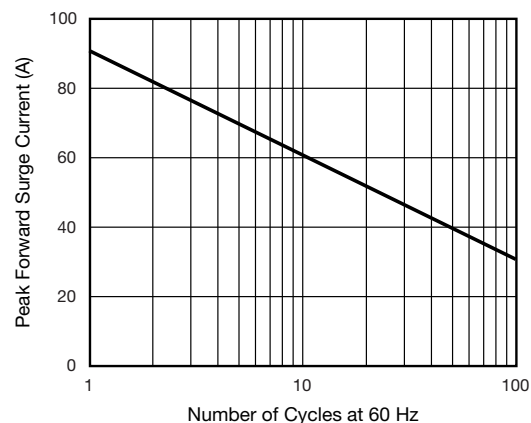


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

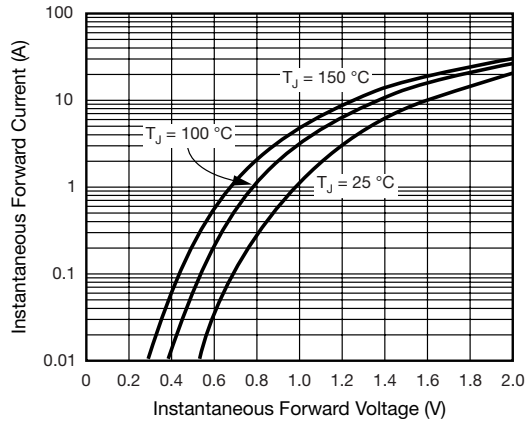


Fig. 3 - Typical Forward Voltage

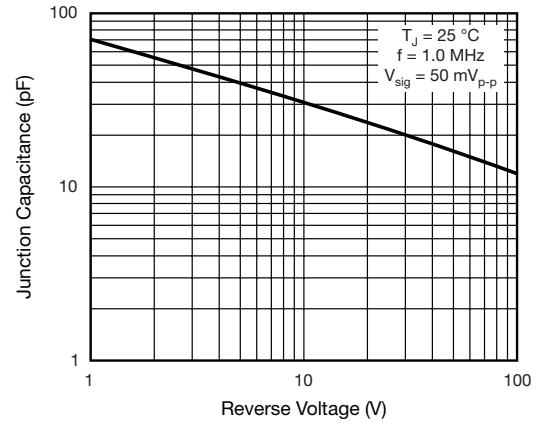


Fig. 5 - Typical Junction Capacitance

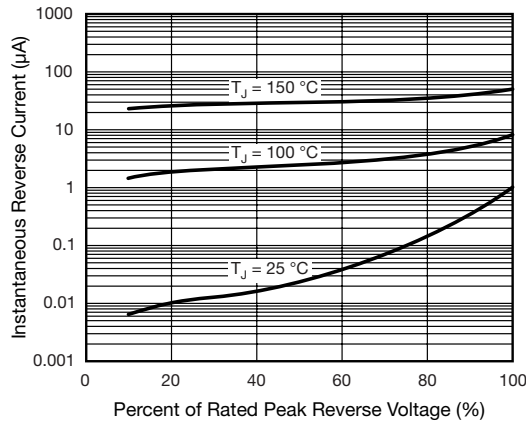
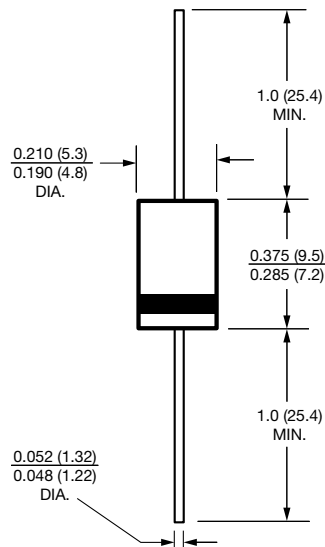


Fig. 4 - Typical Reverse Current

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD





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