

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



RoHS
COMPLIANT
HALOGEN
FREE
Available

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
Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade

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

E3 and 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}	400 V
I_{FSM}	60 A
t_{rr}	30 ns
V_F	1.25 V
T_J max.	150 °C
Package	DO-201AD
Circuit configuration	Single

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

PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	400	V
Maximum RMS voltage	V_{RMS}	280	
Maximum DC blocking voltage	V_{DC}	400	
Maximum average forward rectified current, 0.375" (9.5 mm) lead length	$I_{F(AV)}$	3.0 1.5	A
		with FIN without FIN/PCB	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	60	
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 ($T_A = 25$ °C unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Minimum reverse breakdown voltage	10 μ A	V_{BR}	400	V
Maximum instantaneous forward voltage	3.0 A	$V_F^{(1)}$	1.25	
Maximum DC reverse current at rated DC blocking voltage		I_R	20	μ 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 μ 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, junction to ambient	$R_{\theta JA}^{(1)}$	80	$^{\circ}\text{C/W}$

Note

⁽²⁾ Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, PCB mounted

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
31GF4-E3/54	1.13	54	1400	13" diameter paper tape and reel
31GF4-E3/73	1.13	73	1000	Ammo pack packaging
31GF4-M3/54	1.13	54	1400	13" diameter paper tape and reel
31GF4-M3/73	1.13	73	1000	Ammo pack packaging

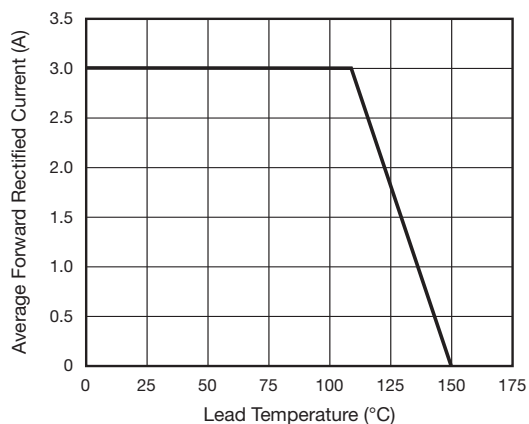
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Maximum Forward Current Derating Curve

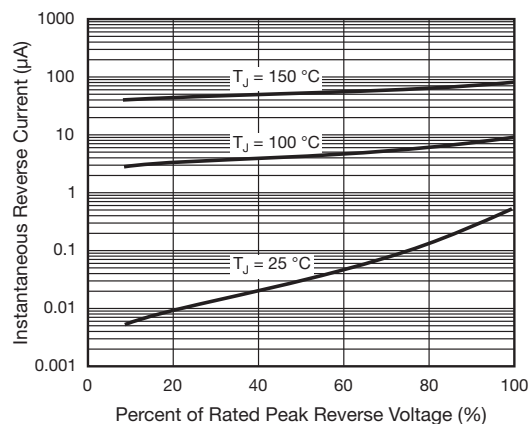


Fig. 3 - Typical Reverse Characteristics

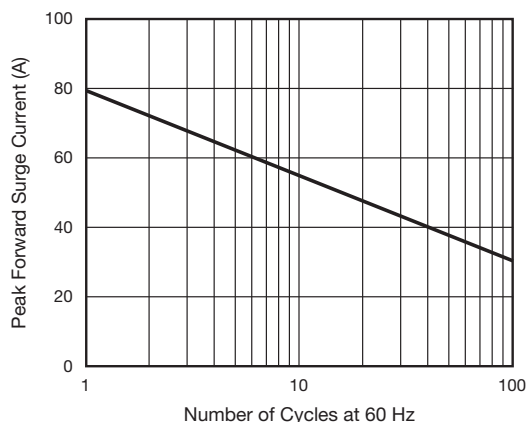


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

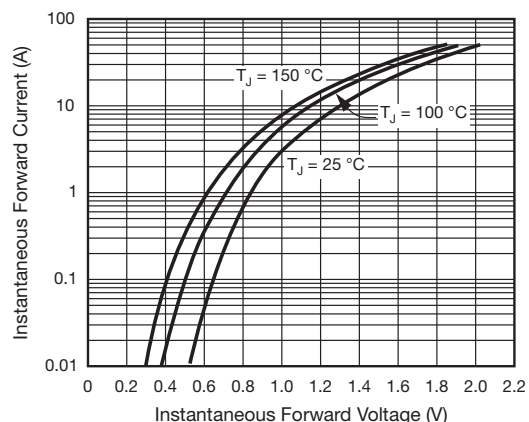


Fig. 4 - Typical Instantaneous Forward Characteristics

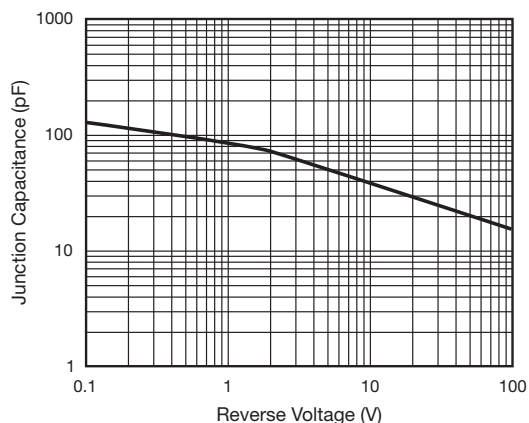
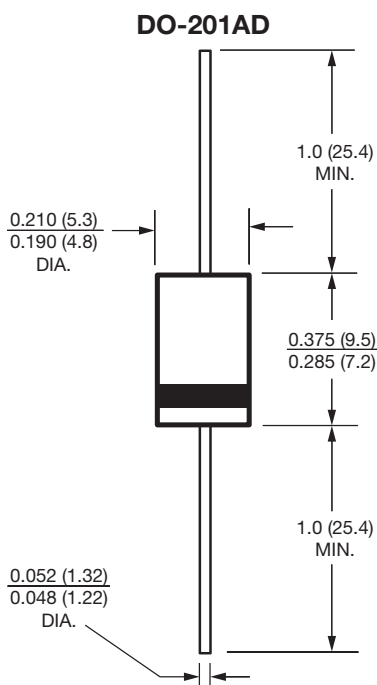


Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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