

Miniature 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
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	4.0 A
V_{RRM}	50 V, 100 V, 150 V, 200 V
I_{FSM}	150 A
t_{rr}	20 ns
V_F	0.95 V
T_J max.	150 °C
Package	DO-201AD
Diode variations	Single die

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)						
PARAMETER	SYMBOL	UG4A	UG4B	UG4C	UG4D	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	4.0				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	150				A
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150				°C



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	VALUE	UNIT
Maximum instantaneous forward voltage	I _F = 4.0 A		V _F ⁽¹⁾	0.95	V
Maximum DC reverse current at rated DC blocking voltage		T _A = 25 °C	I _R	5.0	μA
		T _A = 100 °C		300	
Maximum reverse recovery time	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A		t _{rr}	20	ns
Typical reverse recovery time	I _F = 4.0 A, di/dt = 50 A/μs, V _R = 30 V, I _{rr} = 10 % I _{RM}	T _J = 25 °C	t _{rr}	30	ns
		T _J = 100 °C		50	
Typical stored charge	I _F = 4.0 A, di/dt = 50 A/μs, V _R = 30 V, I _{rr} = 10 % I _{RM}	T _J = 25 °C	Q _{rr}	15	nC
		T _J = 100 °C		30	
Typical junction capacitance	4.0 V, 1 MHz		C _J	20	pF

Note

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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	UG4A	UG4B	UG4C	UG4D	UNIT
Typical thermal resistance	R _{θJA} ⁽¹⁾	25				°C/W

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
UG4D-E3/54	1.138	54	1400	13" diameter paper tape and reel
UG4D-E3/73	1.138	73	1000	Ammo pack packaging

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

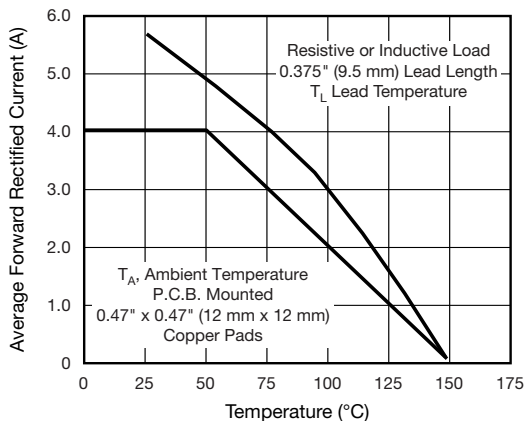


Fig. 1 - Forward Current Derating Curves

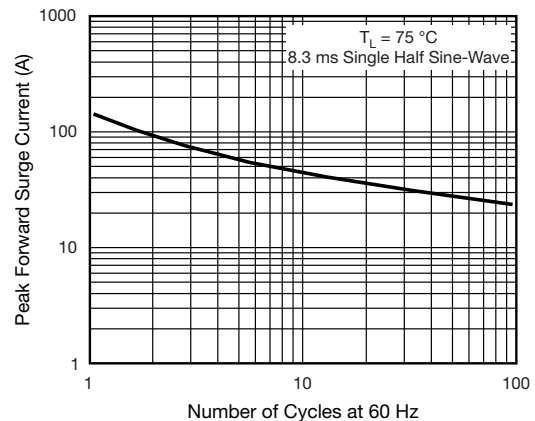


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

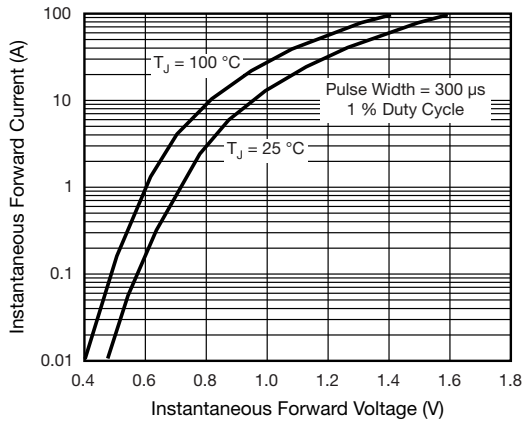


Fig. 3 - Typical Instantaneous Forward Characteristics

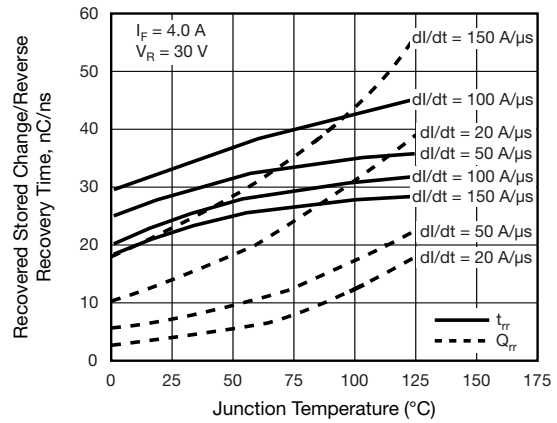


Fig. 5 - Reverse Switching Characteristics

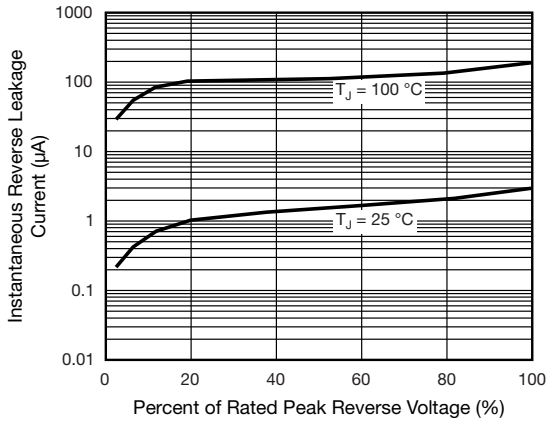


Fig. 4 - Typical Reverse Leakage Characteristics

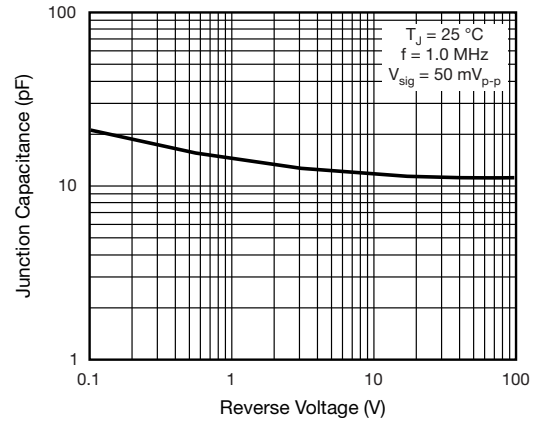
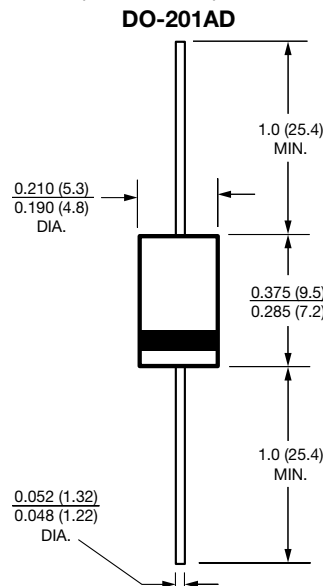


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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