ROHS COMPLIANT

Vishay General Semiconductor

Ultrafast Plastic Rectifier

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 <u>www.vishay.com/doc?99912</u>

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 ($T_A = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	600	V
Maximum RMS voltage	ximum RMS voltage V _{RMS}		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	А
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	90	А
Operating junction and storage temperature range	T _J , T _{STG}	-40 to +150	°C
Reverse avalanche energy (8/20 µs surge)	E _{AR}	10	mJ

ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ 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	μΑ	
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

Revision: 31-Mar-2022

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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 max.	150 °C		
Package	DO-201AD		
Circuit configuration	Single		



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THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance	R _{0JA} ⁽¹⁾	30	°C/W
	R _{0JL} ⁽¹⁾	8.0	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
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 °C unless otherwise noted)

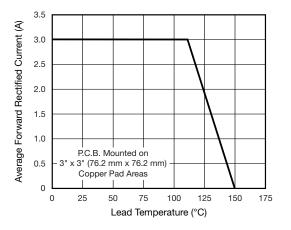


Fig. 1 - Maximum Forward Current Derating Curve

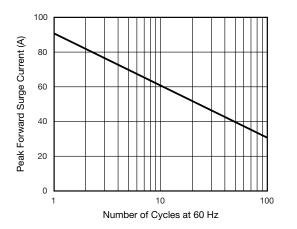


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

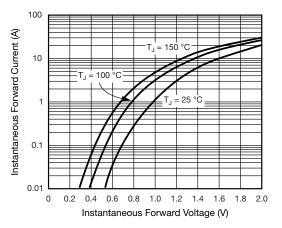


Fig. 3 - Typical Forward Voltage

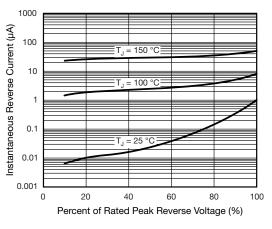


Fig. 4 - Typical Reverse Current

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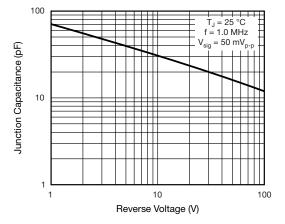
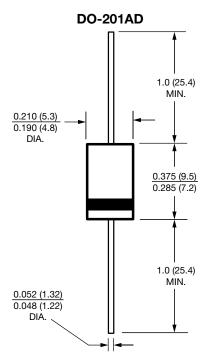


Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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