

Vishay General Semiconductor

Ultrafast Plastic Rectifier



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		

FEATURES





Ultrafast reverse recovery time

(e3

Low forward voltage drop

COMPLI

• Low switching losses, high efficiency

· High forward surge capability

• Solder dip 260 °C, 40 s

 Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

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

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD22-B102

E3 suffix for consumer grade, 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	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 $T_L = 110$ °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

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)				
PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Minimum reverse breakdown voltage	10 μΑ	V_{BR}	600	V
Maximum instantaneous forward voltage (1)	3.0 A	V_{F}	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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance (1)	$egin{array}{c} R_{ hetaJA} \ R_{ hetaJL} \end{array}$	30 8.0	°C/W

Note:

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

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)

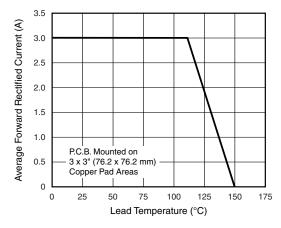


Figure 1. Maximum Forward Current Derating Curve

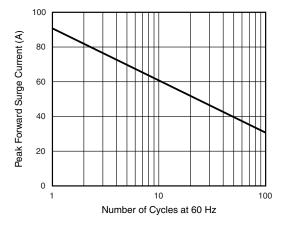


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current



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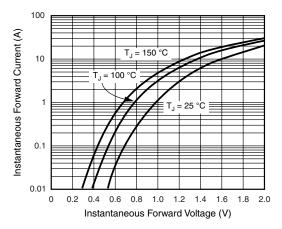


Figure 3. Typical Forward Voltage

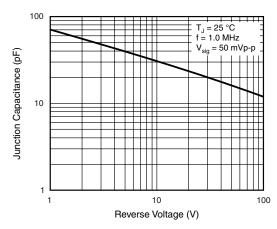


Figure 5. Typical Junction Capacitance

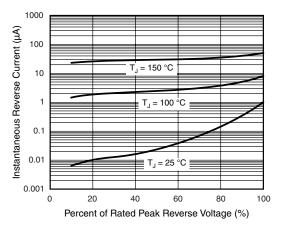
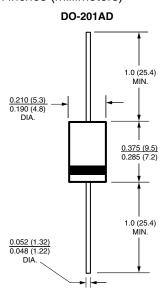


Figure 4. Typical Reverse Current

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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