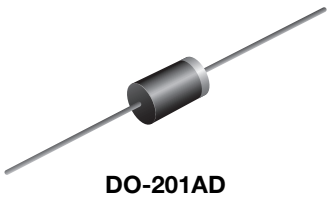
Soft Recovery Ultrafast Plastic Rectifier



DO-201AD

FEATURES

- Glass passivated chip junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low leakage current
- 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

Pb e3 **RoHS** COMPLIANT

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.5 A
V_{RRM}	50 V to 200 V
I_{FSM}	90 A
t_{rr}	20 ns
V_F	0.89 V
T_J 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 °C unless otherwise noted)

PARAMETER	SYMBOL	SBYV28-50	SBYV28-100	SBYV28-150	SBYV28-200	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
Minimum reverse breakdown voltage at 100 µA	V_{BR}	55	110	165	220	V
Maximum average forward rectified current 0.375" (9.5 mm) lead lengths at T_L = 85 °C	$I_{F(AV)}$	3.5				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	90				A
Operating and storage temperature range	T_J, T_{STG}	- 55 to + 150				°C

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ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)								
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**SBYV28-50**	**SBYV28-100**	**SBYV28-150**	**SBYV28-200**	**UNIT**
Maximum instantaneous forward voltage	3.5 A	T_J = 25 °C	V_F (1)	1.1				V
		T_J = 150 °C		0.89				
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_J = 25 °C	t_{rr}	20				ns
Typical junction capacitance	4.0 V, 1 MHz		C_J	20				pF

Note

(1) Pulse test: t_p = 300 μs pulse, duty cycle ≤ 2 %

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**SYMBOL**	**SBYV28-50**	**SBYV28-100**	**SBYV28-150**	**SBYV28-200**	**UNIT**
Typical thermal resistance	$R_{\theta JA}$ (1)	25				°C/W

Note

(1) Lead length = 3/8" on P.C.B. with 1.5" x 1.5" (38.1 mm x 38.1 mm) copper surface

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
SBYV28-200-E3/54	1.138	54	1400	13" diameter paper tape and reel
SBYV28-200-E3/73	1.138	73	1000	Ammo pack packaging

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

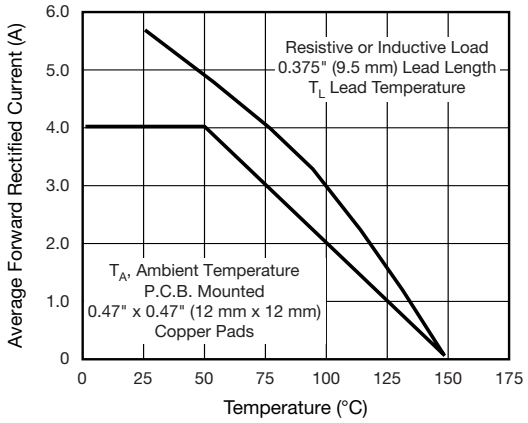

Fig. 1 - Forward Current Derating Curves

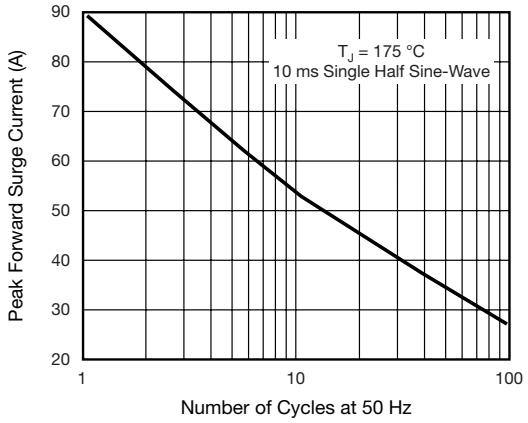

Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

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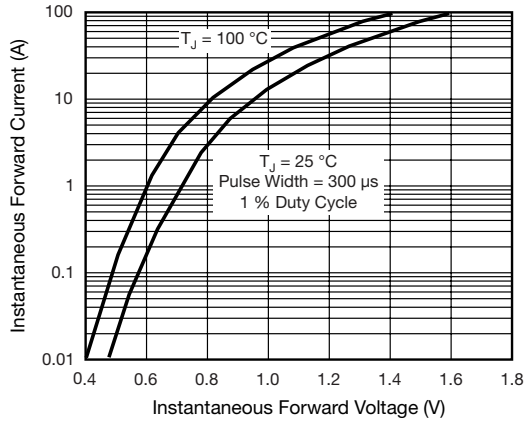


Fig. 3 - Typical Instantaneous Forward Characteristics

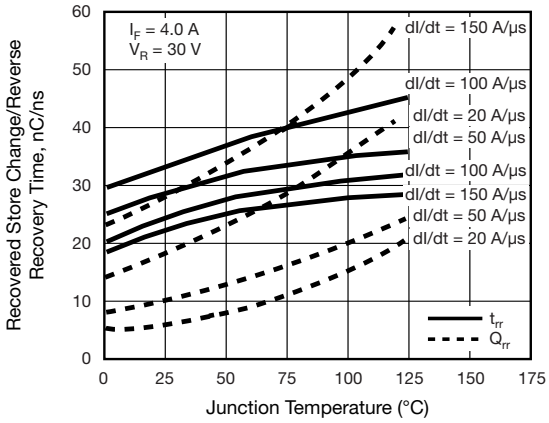


Fig. 5 - Reverse Switching Characteristics

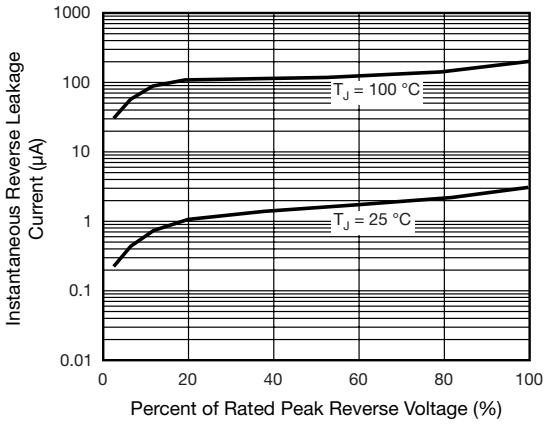


Fig. 4 - Typical Reverse Leakage Characteristics

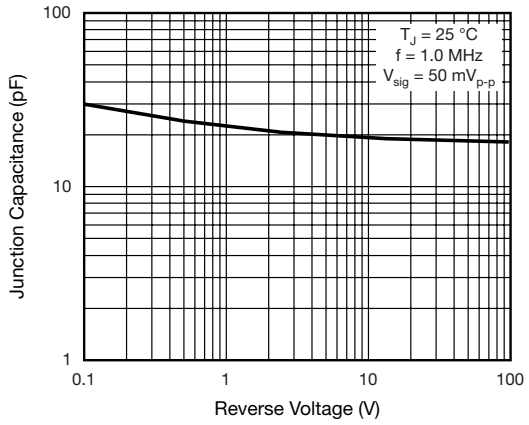
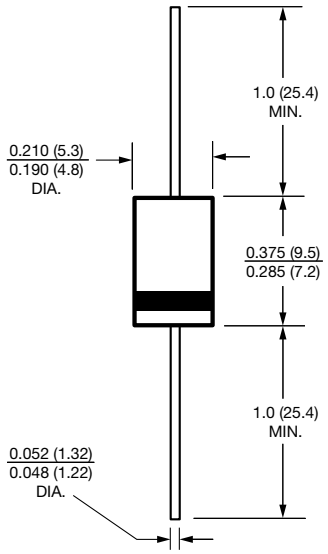


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD



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