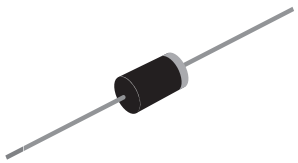
Soft Recovery Ultrafast Plastic Rectifier



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 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

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

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	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

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 (1)	3.5 A	T_J = 25 °C T_J = 150 °C	V_F	1.1 0.89				V
Maximum DC reverse current at rated DC blocking voltage		T_A = 25 °C T_A = 100 °C	I_R	5.0 300				µA
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, 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 (1)	$R_{\theta JA}$	25				°C/W

Note:

(1) Lead length = 3/8" on P.C. Board with 1.5" x 1.5" 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)

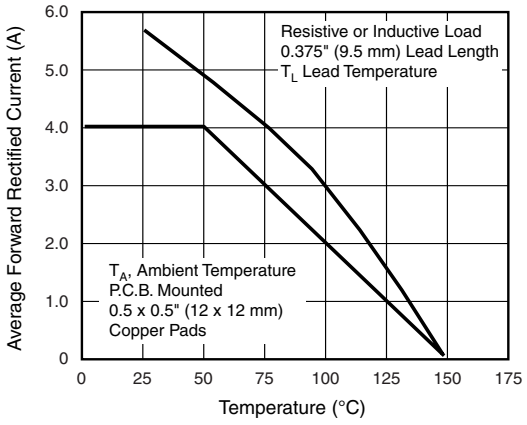


Figure 1. Forward Current Derating Curves

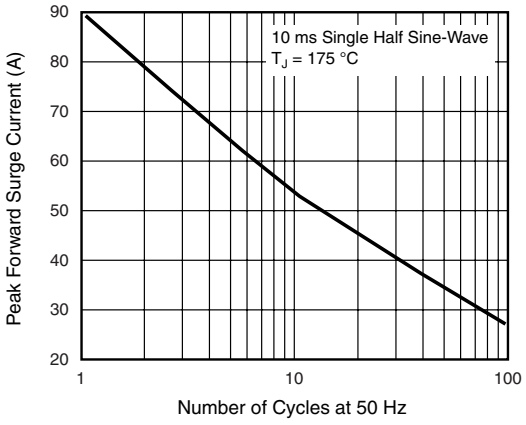


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

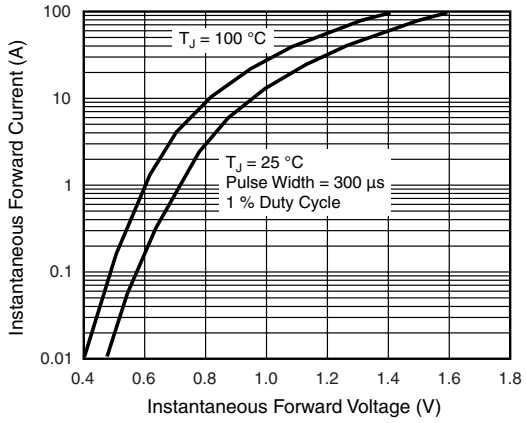


Figure 3. Typical Instantaneous Forward Characteristics

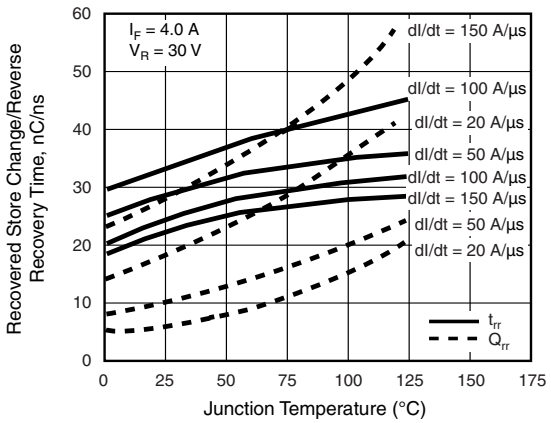


Figure 5. Reverse Switching Characteristics

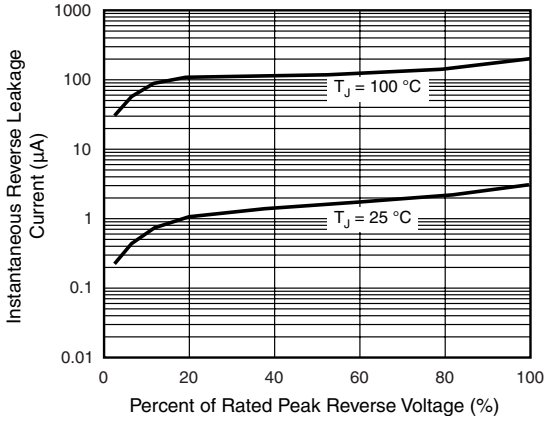


Figure 4. Typical Reverse Leakage Characteristics

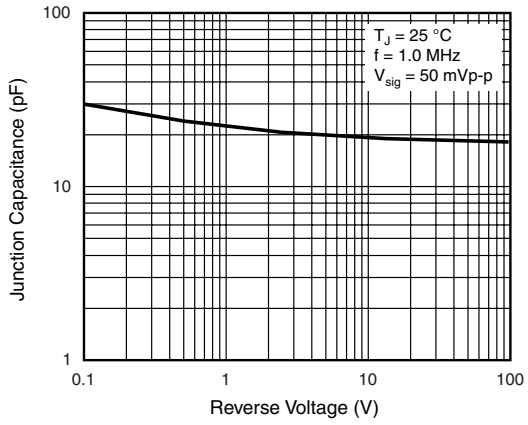
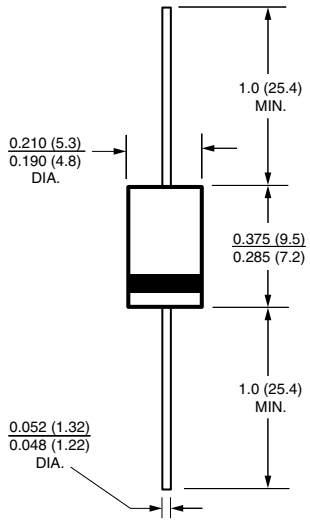


Figure 6. Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD



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