TOP ONE SEMI CONDUCTOR

Soft Recovery Ultrafast Plastic Rectifier

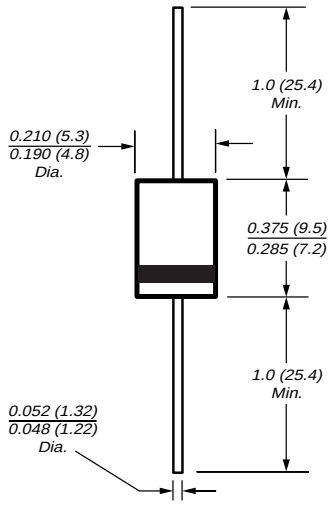
SBYV28-50 THRU SBYV28-200

50V-200V 3.5A

FEATURES

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Ideally suited for use in very high frequency switching power supplies, inverters and as free wheeling diodes
- Ultrafast recovery time for high efficiency
- Glass passivated junction
- High temperature soldering guaranteed: 250°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

DO-201AD



Dimensions in inches and (millimeters)

Mechanical Data

Case: JEDEC DO-201AD molded plastic body over passivated chip
Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026
Polarity: Color band denotes cathode end
Mounting Position: Any
Weight: 0.045 oz., 1.2 g

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	SBYV28-50	SBYV28-100	SBYV28-150	SBYV28-200	Units
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 100μA	$V_{(BR)}$	55	110	165	220	V
Maximum average forward rectified current 0.375" (9.5mm) 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 at T_J = 150°C	I_{FSM}	90				A
Typical thermal resistance (1)	$R_{\Theta JA}$	25				°C/W
Operating and storage temperature range	T_J, T_{STG}	-55 to +150				°C

Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter		Symbols	SBYV28-50	SBYV28-100	SBYV28-150	SBYV28-200	Units
Maximum instantaneous forward voltage at 3.5A (2)	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 at I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	T_J=25°C	t_{rr}	20				ns
Typical junction capacitance at 4.0V, 1MHz		C_J	20				pF

Notes:
(1) Lead length = 3/8" on P.C. Board with 1.5" x 1.5" copper surface
(2) Pulse test: t_p = 300μs, duty cycle ≤ 2%

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Fig. 1 – Forward Current Derating Curves

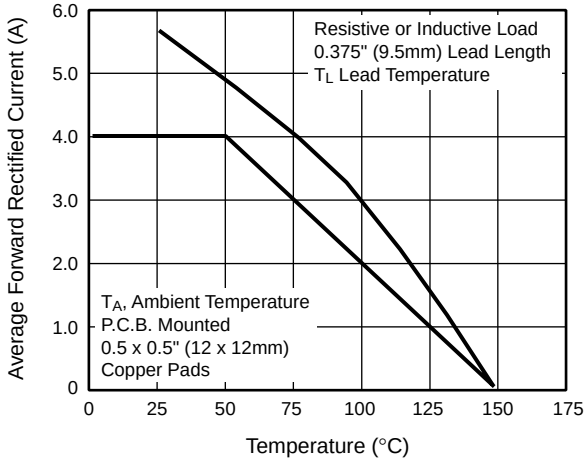

Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

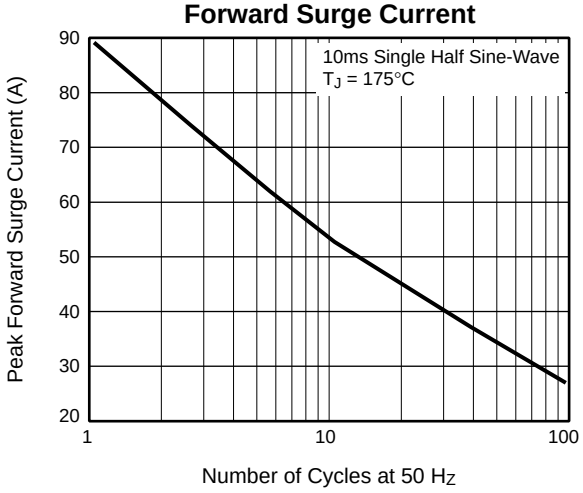

Fig. 3 – Typical Instantaneous Forward Characteristics

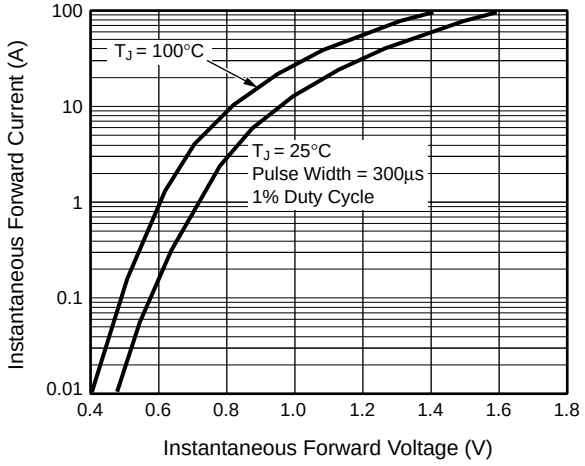

Fig. 4 – Typical Reverse Leakage Characteristics

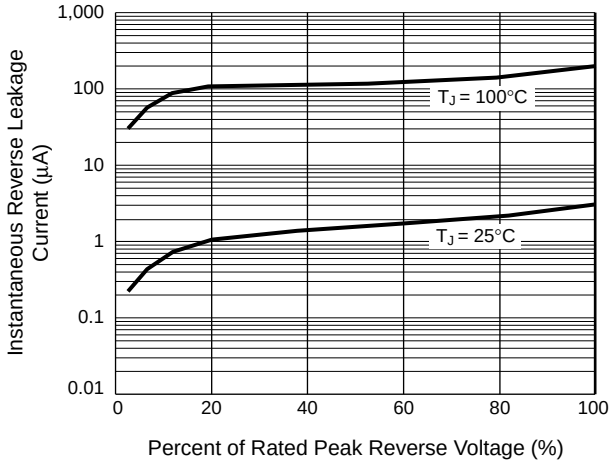

Fig. 5 – Reverse Switching Characteristics

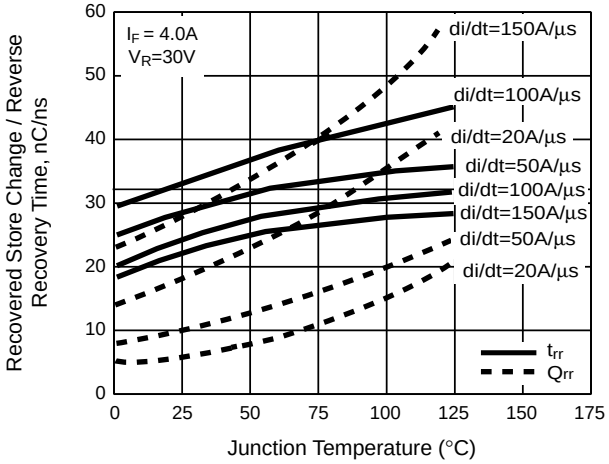

Fig. 6 – Typical Junction Capacitance