VISHAY MAS
GENERAL SEMICONDUCTOR

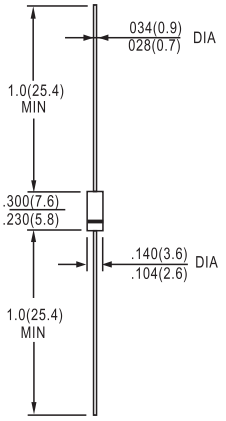
SBYV27-50 THRU SBYV27-200

50V-200V 2.0A

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
- Excellent high temperature switching
- Soft recovery characteristics
- Glass passivated junction
- High temperature soldering guaranteed: 250°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

DO-15



Dimensions in inches and (millimeters)

Mechanical Data

Case: JEDEC DO-204AC 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: 0.015 ounce, 0.4 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	SBYV27-50	SBYV27-100	SBYV27-150	SBYV27-200	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 = 85ºC	$I_{F(AV)}$	2.0				A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load (JEDEC Method) at T_J = 150ºC	I_{FSM}	50				A
Typical thermal resistance (NOTE 1)	$R_{\Theta JA}$	45				°C/W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150°C				°C

Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter		Symbols	SBYV27-50	SBYV27-100	SBYV27-150	SBYV27-200	Units
Maximum instantaneous forward voltage at 3.0A (NOTE 2)	T_J = 25°C T_J = 150°C	V_F	1.07 0.88				V
Maximum DC reverse current at rated DC blocking voltage	T_A = 25°C T_A =100°C	I_R	5.0 200				μA
Maximum reverse recovery time at I_F=0.5A, I_R=1.0A, I_{rr}=0.25A		t_{rr}	15				ns
Typical junction capacitance at 4.0V, 1MHz		C_J	15				pF

Notes:
(1) Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length
(2) Pulse test: 300μs pulse width, duty cycle ≤ 2%

Fig. 1 – Maximum Forward Current Derating Curves

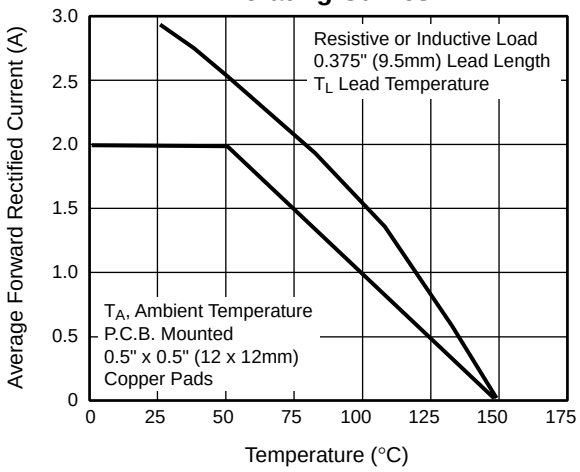


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

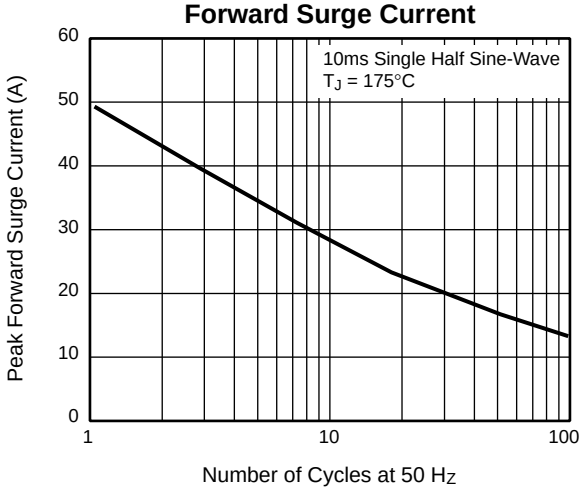


Fig. 3 – Typical Instantaneous Forward Characteristics

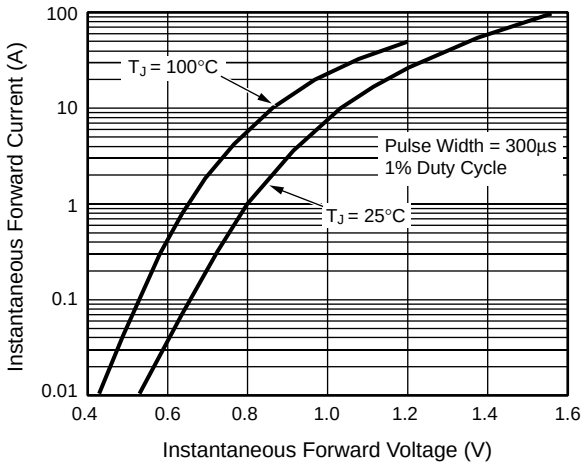


Fig. 4 – Typical Reverse Leakage Characteristics

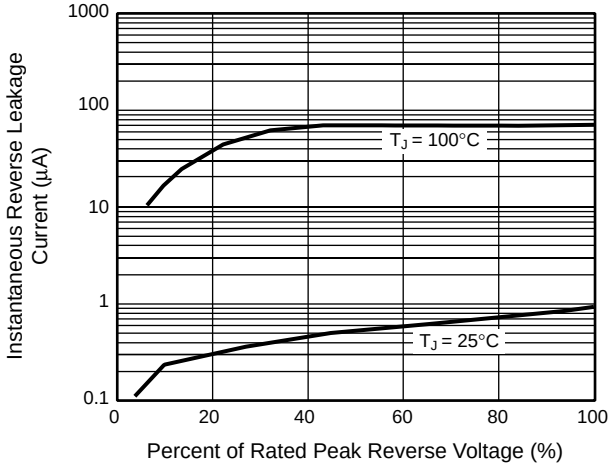


Fig. 5 – Reverse Switching Characteristics

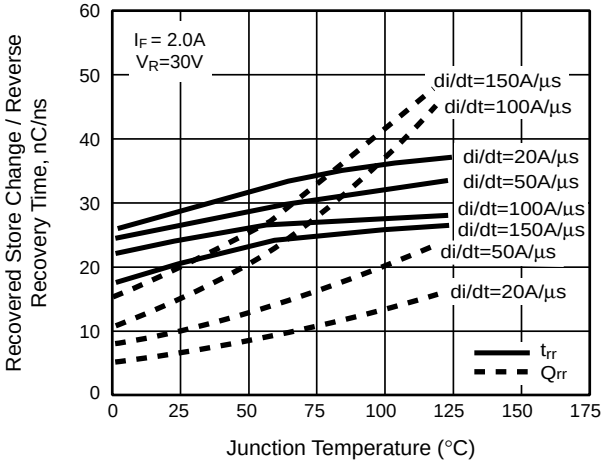


Fig. 6 – Typical Junction Capacitance