SBYV27-50 thru SBYV27-200

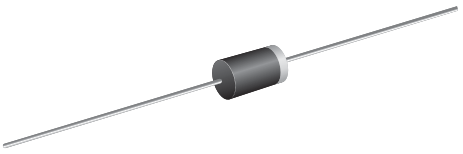
Vishay General Semiconductor

Soft Recovery Ultrafast Plastic Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	2.0 A
V_{RRM}	50 V to 200 V
I_{FSM}	50 A
t_{rr}	15 ns
V_F	0.88 V
T_j max.	150 °C

DO-204AC (DO-15)



Features

- 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 seconds

Mechanical Data

Case: DO-204AC (DO-15)

Epoxy meets UL-94V-0 Flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade

Polarity: Color band denotes cathode end

Typical Applications

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and Telecommunication

Maximum Ratings

T_A = 25 °C unless otherwise specified

Parameter	Symbol	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 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	$I_{F(AV)}$	2.0				A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	50				A
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150				°C

Electrical Characteristics

T_A = 25 °C unless otherwise specified

Parameter	Test condition		Symbol	SBYV27-50	SBYV27-100	SBYV27-150	SBYV27-200	Units
Maximum instantaneous forward voltage	at 3.0 A (1)	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 = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	15				ns
Typical junction capacitance	at 4.0 V, 1 MHz		C_J	15				pF

Notes:

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

Thermal Characteristics

T_A = 25 °C unless otherwise specified

Parameter	Symbol	SBYV27-50	SBYV27-100	SBYV27-150	SBYV27-200	Units
Typical thermal resistance (1)	$R_{\theta JA}$	45				°C/W

Notes:

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise noted)

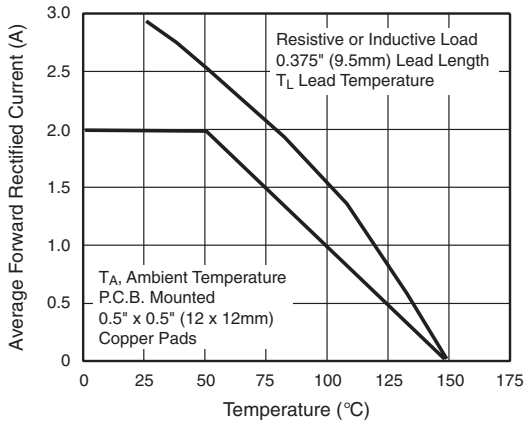


Figure 1. Maximum Forward Current Derating Curves

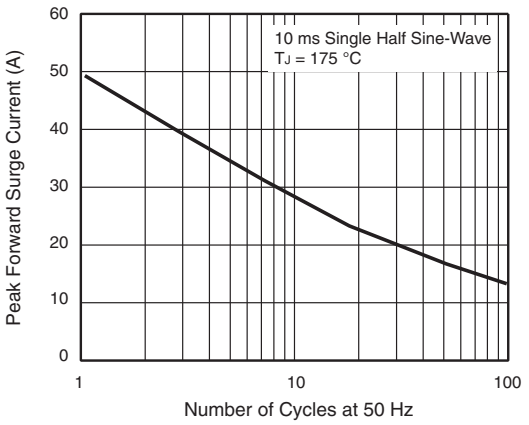


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

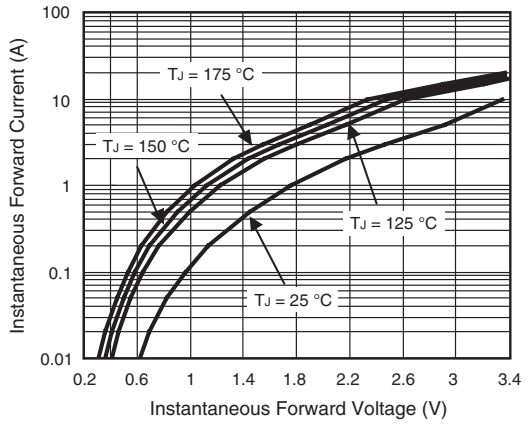


Figure 3. Typical Instantaneous Forward Characteristics

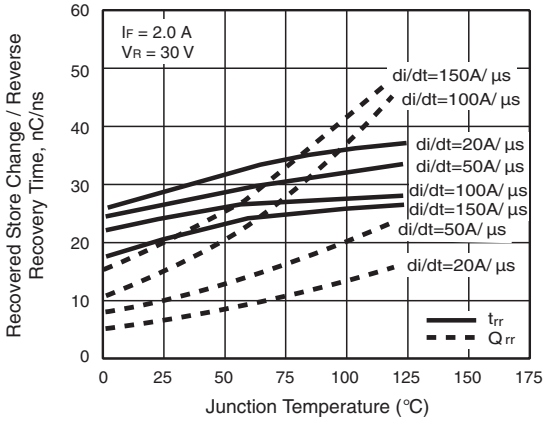


Figure 5. Reverse Switching Charateristics

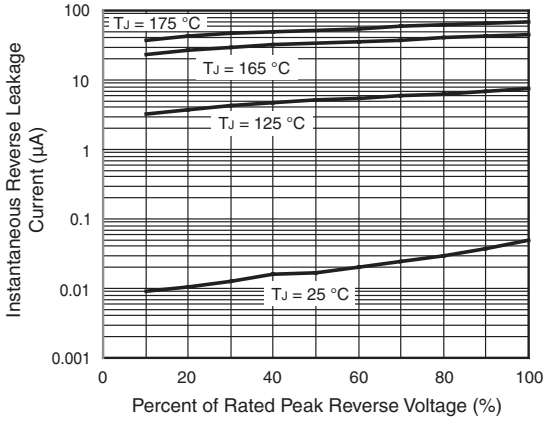


Figure 4. Typical Reverse Leakage Characteristics

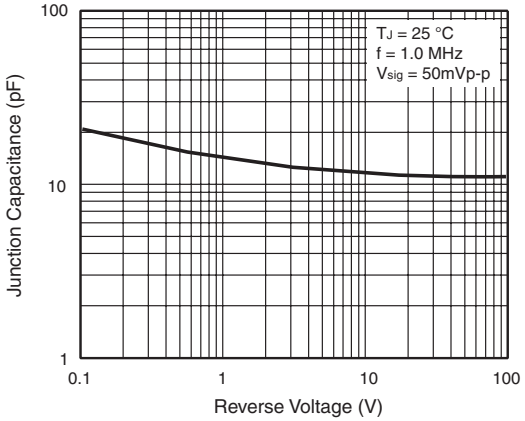
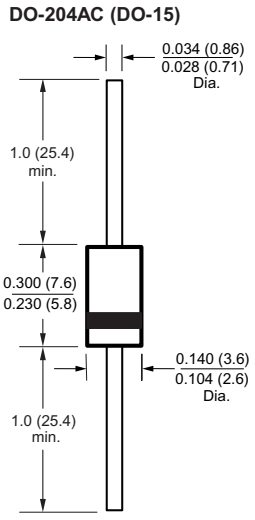


Figure 6. Typical Junction Capacitance

Package outline dimensions in inches (millimeters)



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