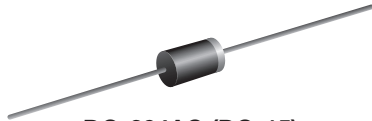


Soft Recovery Ultrafast Plastic Rectifier

SBYV27-50, SBYV27-100 SBYV27-150, SBYV27-200 Vishaymas General Semiconductor



DO-204AC (DO-15)

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
V_{RRM}	50 V, 100 V, 150 V, 200 V
I_{FSM}	50 A
t_{rr}	15 ns
V_F	0.88 V
$T_J \text{ max.}$	150 °C
Package	DO-204AC (DO-15)
Diode variations	Single die

FEATURES

- 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
- Material categorization: For definitions of compliance please see www.vishaymas.com

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-204AC (DO-15)

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 ($T_A = 25\text{ °C}$ unless otherwise noted)						
PARAMETER	SYMBOL	SBYV27-50	SBYV27-100	SBYV27-150	SBYV27-200	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 μ A	V_{BR}	55	110	165	220	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_L = 85\text{ °C}$	$I_{F(AV)}$	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 ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	SBYV27-50	SBYV27-100	SBYV27-150	SBYV27-200	UNIT
Maximum instantaneous forward voltage	3.0 A	$T_J = 25\text{ }^\circ\text{C}$	$V_F^{(1)}$	1.07			V	
		$T_J = 150\text{ }^\circ\text{C}$		0.88				
Maximum DC reverse current at rated DC blocking voltage			I_R	$T_A = 25\text{ }^\circ\text{C}$			μA	
				$T_A = 100\text{ }^\circ\text{C}$				
Maximum reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{rr} = 0.25\text{ A}$		t_{rr}	15			ns	
Typical junction capacitance	4.0 V, 1 MHz		C_J	15			pF	

Note

(1) Pulse test: 300 μs pulse width, duty cycle $\leq 2\%$

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	SBYV27-50	SBYV27-100	SBYV27-150	SBYV27-200	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	45				$^\circ\text{C/W}$

Note

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

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SBYV27-200-E3/54	0.404	54	4000	13" diameter paper tape and reel
SBYV27-200-E3/73	0.404	73	2000	Ammo pack packaging

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

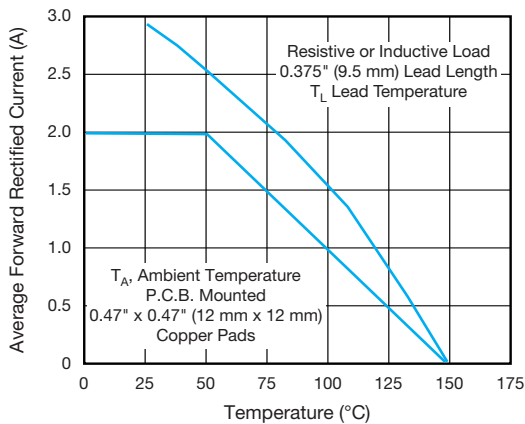


Fig. 1 - Maximum Forward Current Derating Curves

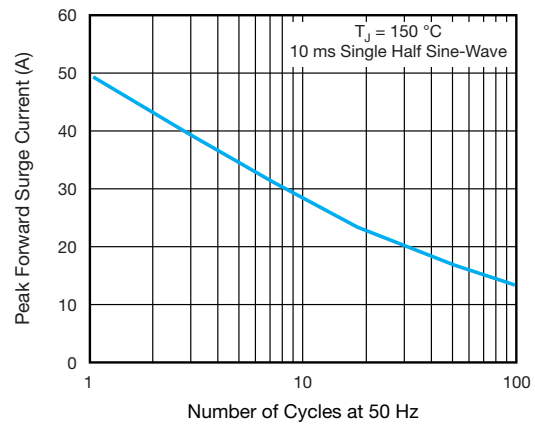


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

RATING AND CHARACTERISTIC CURVES

Vishaymas General Semiconductor

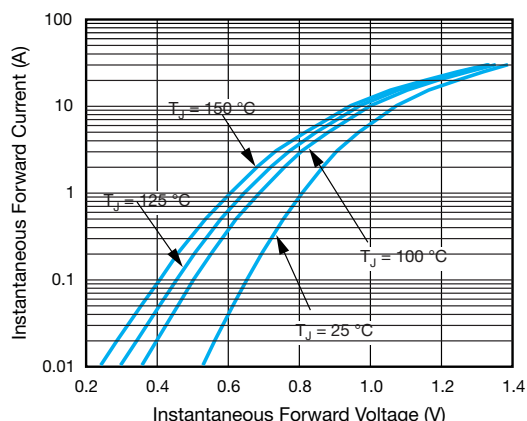


Fig. 3 - Typical Instantaneous Forward Characteristics

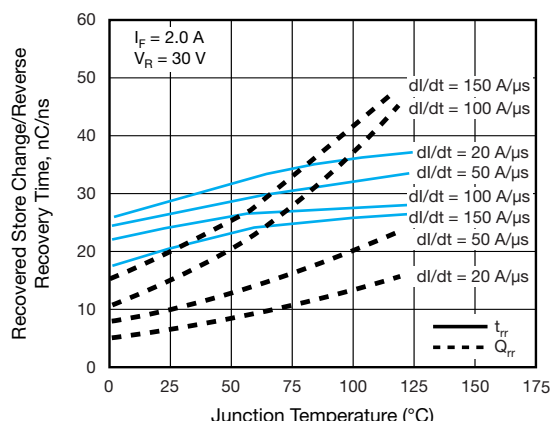


Fig. 5 - Reverse Switching Characteristics

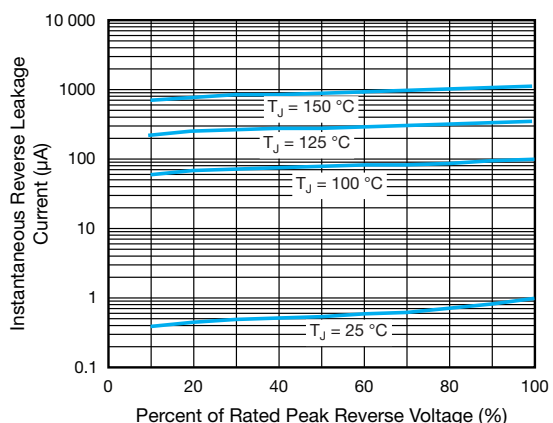


Fig. 4 - Typical Reverse Leakage Characteristics

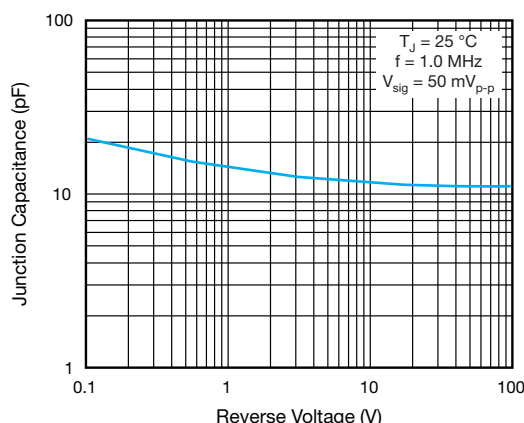


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)

