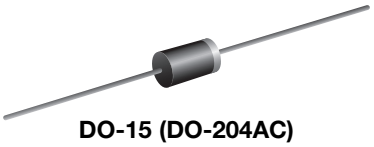
SBYV27-50, SBYV27-100, SBYV27-150, SBYV27-200

Soft Recovery Ultrafast Plastic Rectifier



DO-15 (DO-204AC)

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.vishay.com/doc?99912

RoHS COMPLIANT

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 max.	150 °C
Package	DO-15 (DO-204AC)
Circuit configuration	Single

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-15 (DO-204AC)
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 °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 µA	V_{BR}	55	110	165	220	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length 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

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ELECTRICAL CHARACTERISTICS (T_A = 25 °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 °C	V_F (1)	1.07				V
		T_J = 150 °C		0.88				
Maximum DC reverse current at rated DC blocking voltage		T_A = 25 °C	I_R	5.0				μA
		T_A = 100 °C		200				
Maximum reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 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 ≤ 2 %

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

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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

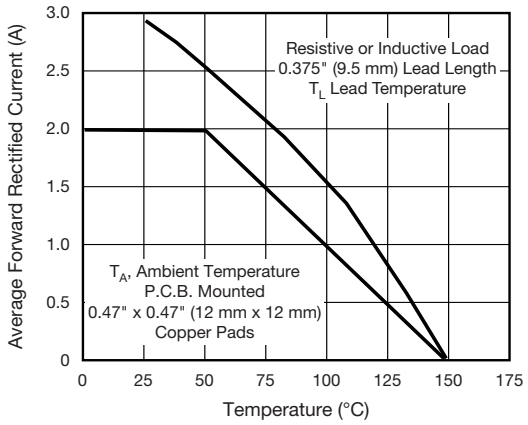


Fig. 1 - Maximum Forward Current Derating Curves

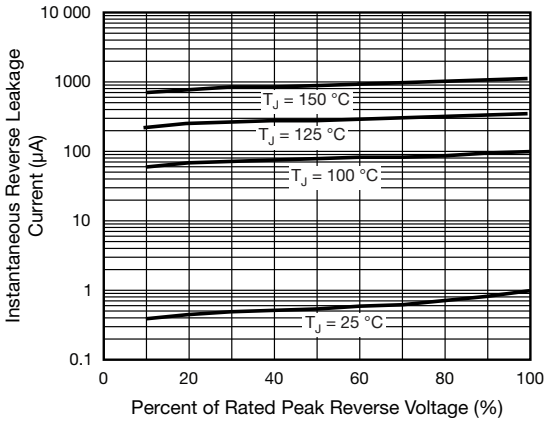


Fig. 4 - Typical Reverse Leakage Characteristics

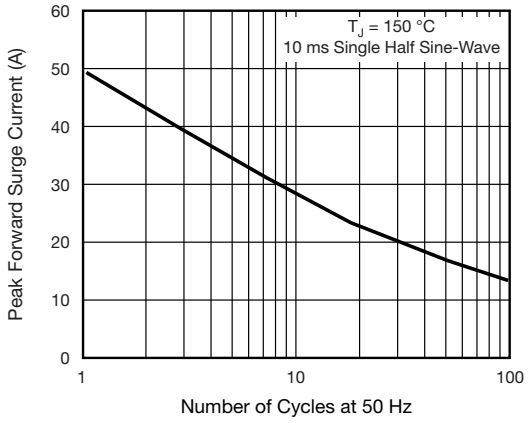


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

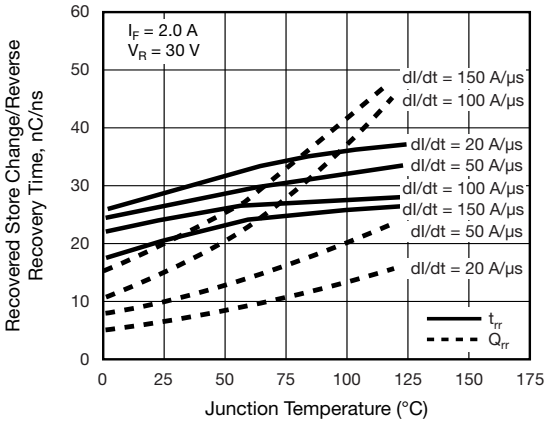


Fig. 5 - Reverse Switching Charateristics

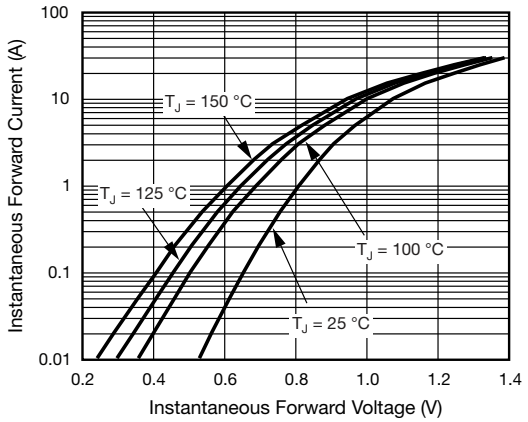


Fig. 3 - Typical Instantaneous Forward Characteristics

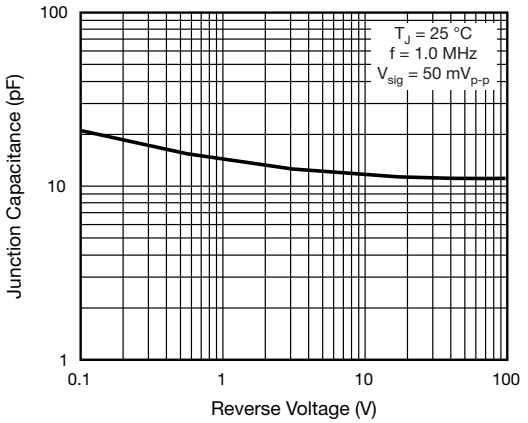
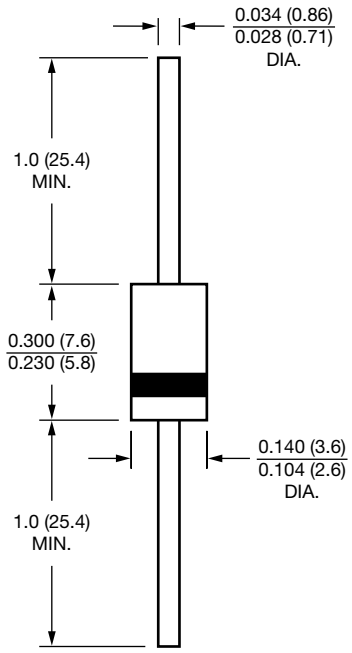


Fig. 6 - Typical Junction Capacitance

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-15 (DO-204AC)



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