

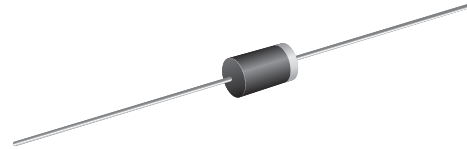


## Soft Recovery Ultrafast Plastic Rectifier

### 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

$T_A = 25\text{ °C}$  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 $\mu$ A	$V_{BR}$	55	110	165	220	V
Maximum average forward rectified current 0.375" (9.5 mm) lead lengths 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

# SBYV27-50 thru SBYV27-200



Vishay General Semiconductor

## Electrical Characteristics

$T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Test condition	Symbol	SBYV27-50	SBYV27-100	SBYV27-150	SBYV27-200	Units
Maximum instantaneous forward voltage	at 3.0 A <sup>(1)</sup> $T_J = 25\text{ }^\circ\text{C}$ $T_J = 150\text{ }^\circ\text{C}$	$V_F$			1.07 0.88		V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 100\text{ }^\circ\text{C}$	$I_R$			5.0 200		$\mu\text{A}$
Maximum reverse recovery time	at $I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	$t_{rr}$			15		ns
Typical junction capacitance	at 4.0 V, 1 MHz	$C_J$			15		pF

Notes:

(1) Pulse test: 300  $\mu\text{s}$  pulse width, duty cycle  $\leq 2\%$

## Thermal Characteristics

$T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	SBYV27-50	SBYV27-100	SBYV27-150	SBYV27-200	Units
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$			45		$^\circ\text{C/W}$

Notes:

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

## Ratings and Characteristics Curves

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

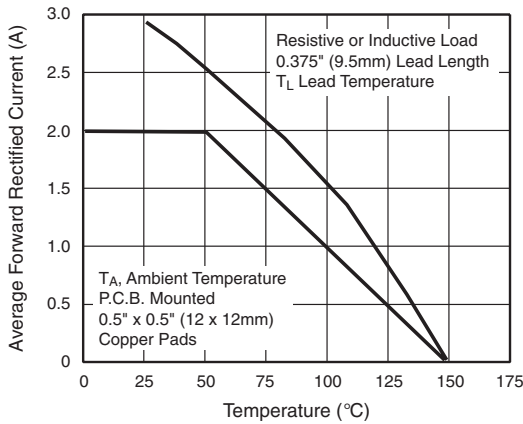


Figure 1. Maximum Forward Current Derating Curves

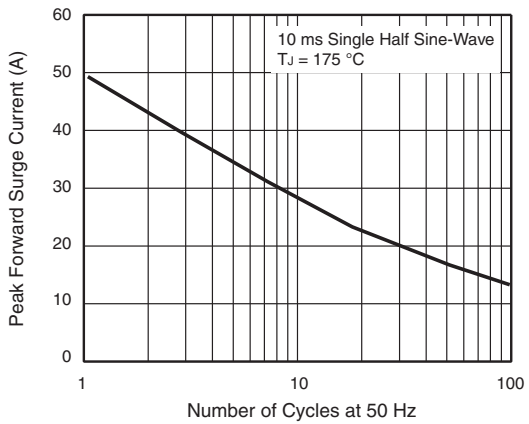


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

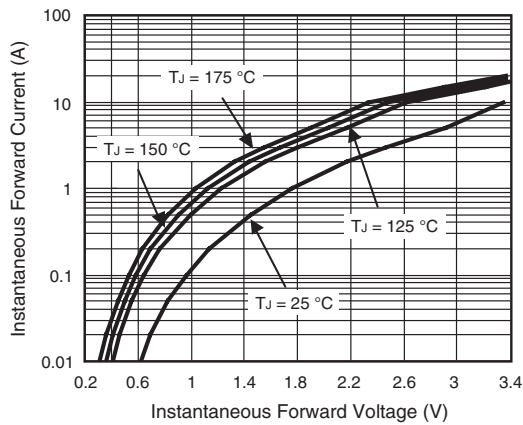


Figure 3. Typical Instantaneous Forward Characteristics

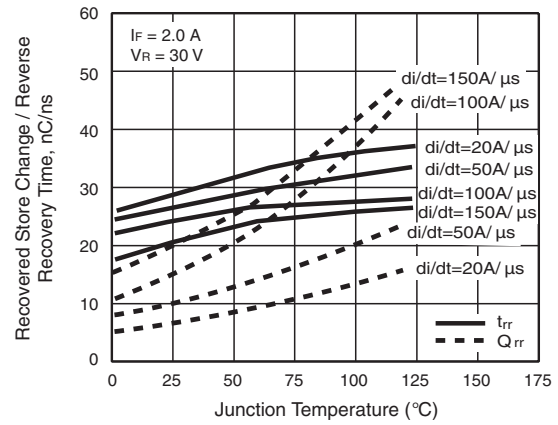


Figure 5. Reverse Switching Characteristics

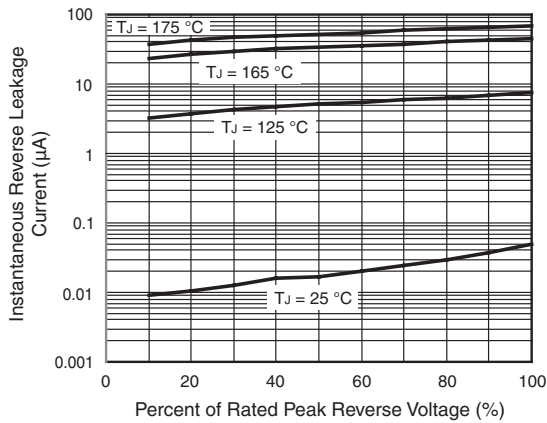


Figure 4. Typical Reverse Leakage Characteristics

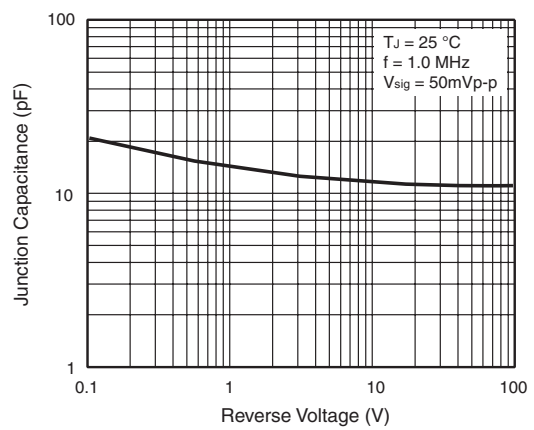
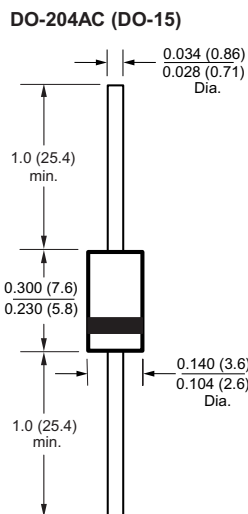


Figure 6. Typical Junction Capacitance

## Package outline dimensions in inches (millimeters)





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