

Soft Recovery Ultrafast Plastic Rectifier



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 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT

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

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-204AC (DO-15)
Diode variations	Single die

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

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	SBYV27-50	SBYV27-100	SBYV27-150	SBYV27-200	UNIT	
Maximum instantaneous forward voltage	3.0 A	$T_J = 25^\circ\text{C}$	V_F (1)	1.07			V		
		$T_J = 150^\circ\text{C}$		0.88					
Maximum DC reverse current at rated DC blocking voltage		$T_A = 25^\circ\text{C}$	I_R	5.0			μA		
		$T_A = 100^\circ\text{C}$		200					
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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	SYMBOL	SBYV27-50	SBYV27-100	SBYV27-150	SBYV27-200	UNIT	
Typical thermal resistance	$R_{\theta JA}$ (1)	45			$^\circ\text{C}/\text{W}$		

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

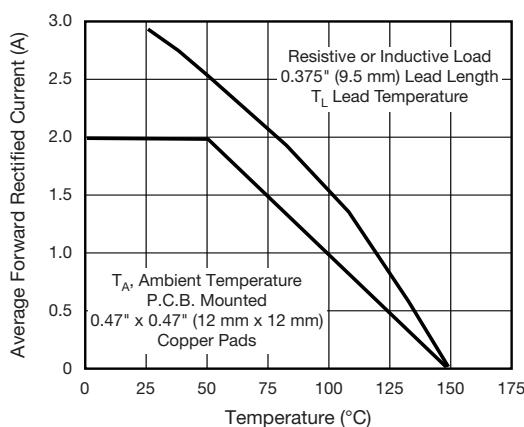


Fig. 1 - Maximum Forward Current Derating Curves

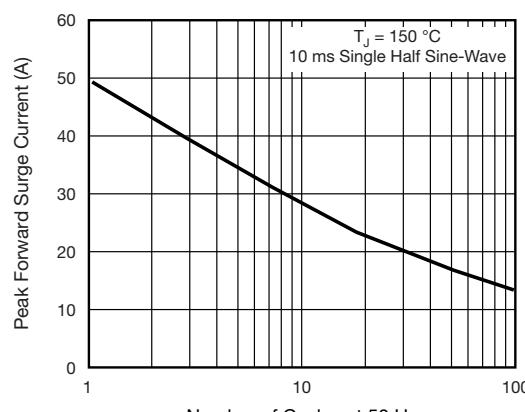
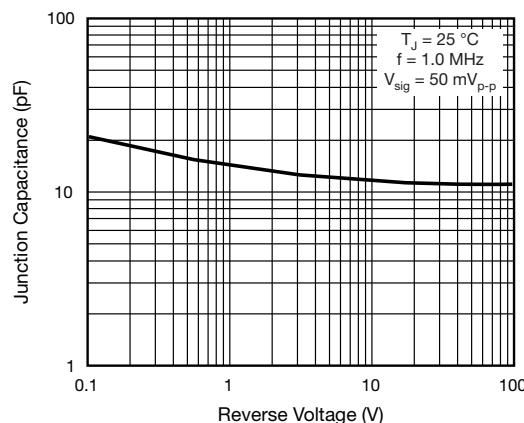
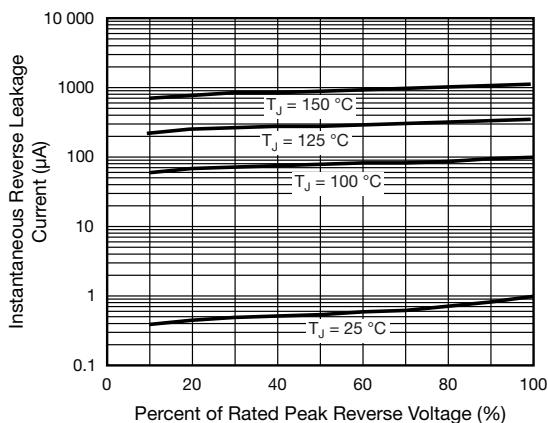
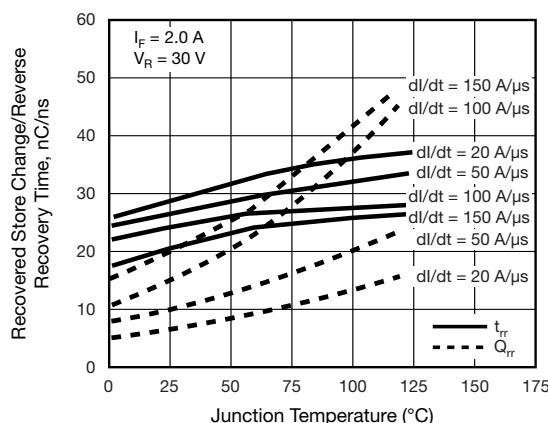
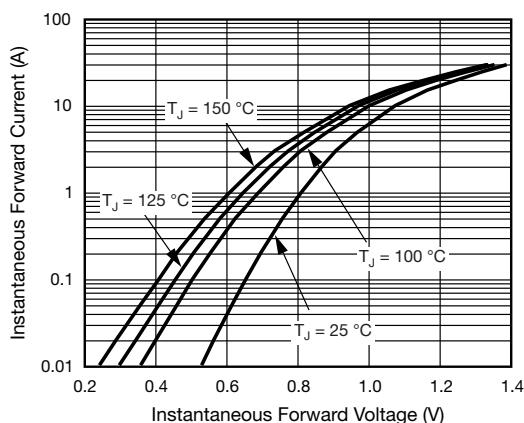
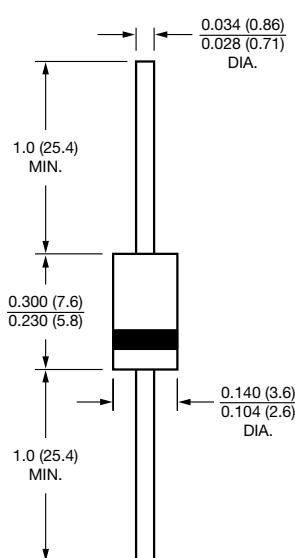


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)



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