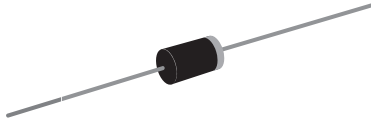


Soft Recovery Ultrafast Plastic Rectifier


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 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



TYPICAL APPLICATIONS

For use in high frequency rectification and free-wheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

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

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
$T_j \text{ max.}$	150 °C

MAXIMUM RATINGS ($T_A = 25 \text{ }^\circ\text{C}$ 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 μA	V_{BR}	55	110	165	220	V
Maximum average forward rectified current 0.375" (9.5 mm) lead lengths at $T_L = 85 \text{ }^\circ\text{C}$	$I_{F(AV)}$	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 ⁽¹⁾	at 3.0 A $T_J = 25\text{ }^\circ\text{C}$ $T_J = 150\text{ }^\circ\text{C}$	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		μA
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

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 ⁽¹⁾	$R_{\theta JA}$	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 & 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)

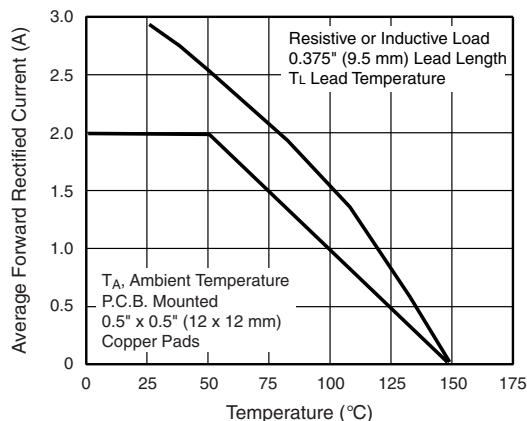


Figure 1. Maximum Forward Current Derating Curves

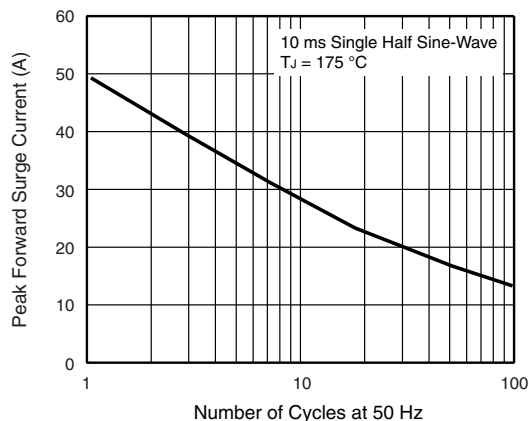


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

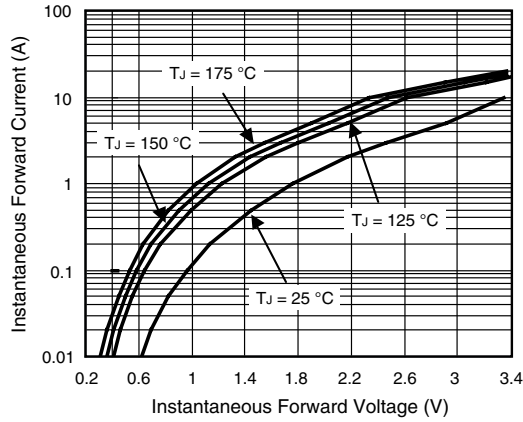


Figure 3. Typical Instantaneous Forward Characteristics

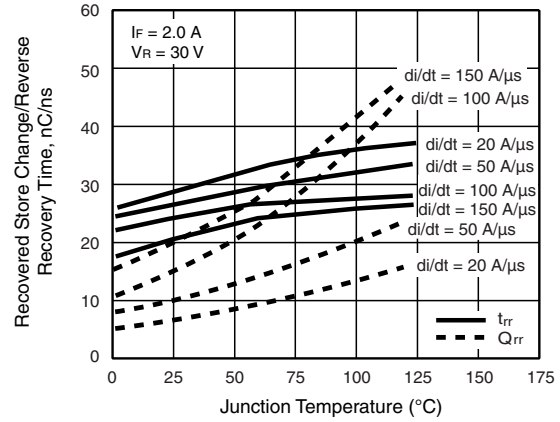


Figure 5. Reverse Switching Characteristics

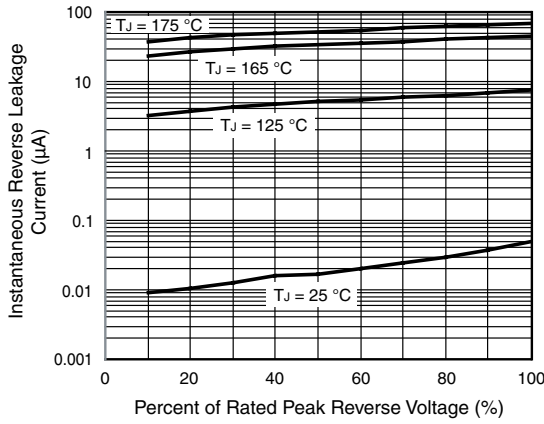


Figure 4. Typical Reverse Leakage Characteristics

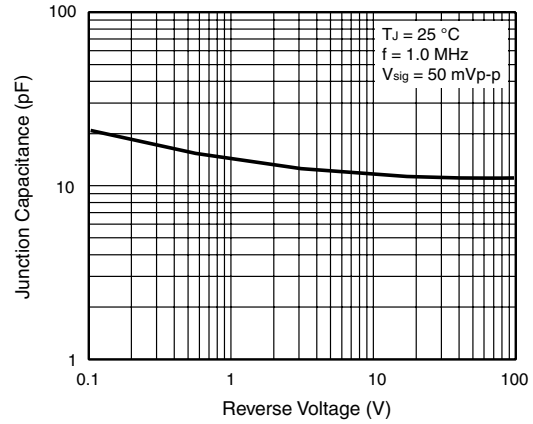
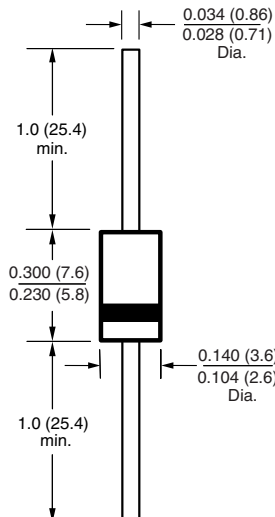


Figure 6. Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)





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