

## FEATURES

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Ideally suited for use in very high frequency switching power supplies, inverters and as free wheeling diodes
- Ultrafast recovery time for high efficiency
- Excellent high temperature switching
- Soft recovery characteristics
- Glass passivated junction
- High temperature soldering guaranteed:  
250°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

## Mechanical Data

**Case:** JEDEC DO-204AC molded plastic body over passivated chip

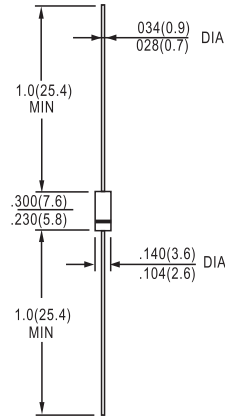
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.015 ounce, 0.4 gram

DO-15



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

### Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	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" (9.5mm) lead lengths at $T_L = 85^\circ\text{C}$	$I_{F(AV)}$	2.0				A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load (JEDEC Method) at $T_J = 150^\circ\text{C}$	$I_{FSM}$	50				A
Typical thermal resistance (NOTE 1)	$R_{\theta JA}$	45				$^\circ\text{C}/\text{W}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150 $^\circ\text{C}$				$^\circ\text{C}$

### Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

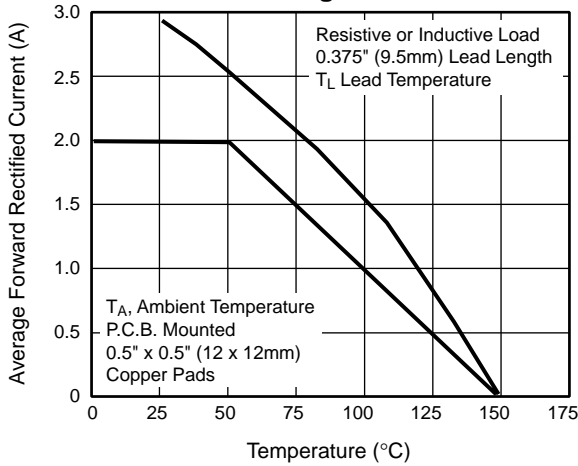
Parameter	Symbols	SBYV27-50	SBYV27-100	SBYV27-150	SBYV27-200	Units
Maximum instantaneous forward voltage at 3.0A (NOTE 2)	$V_F$	1.07 0.88				V
Maximum DC reverse current at rated DC blocking voltage	$I_R$	5.0 200				$\mu\text{A}$
Maximum reverse recovery time at $I_F=0.5\text{A}$ , $I_R=1.0\text{A}$ , $I_{rr}=0.25\text{A}$	$t_{rr}$	15				ns
Typical junction capacitance at 4.0V, 1MHz	$C_J$	15				pF

**Notes:**

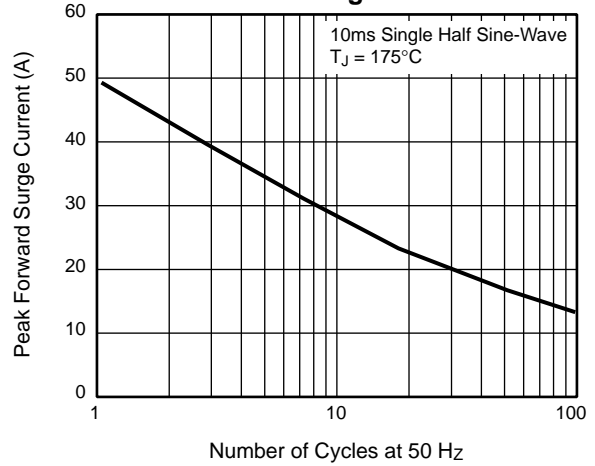
(1) Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length

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

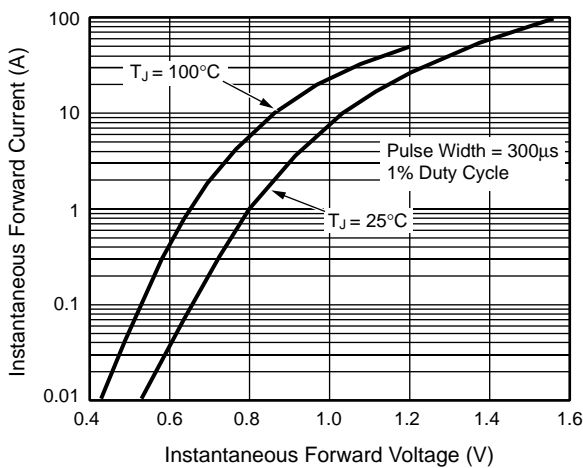
**Fig. 1 – Maximum Forward Current Derating Curves**



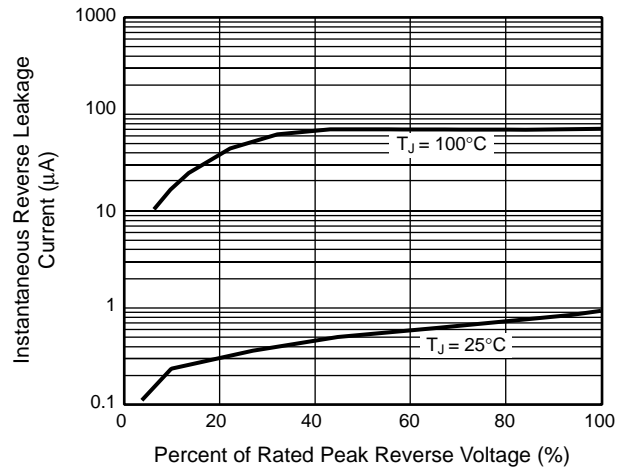
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current**



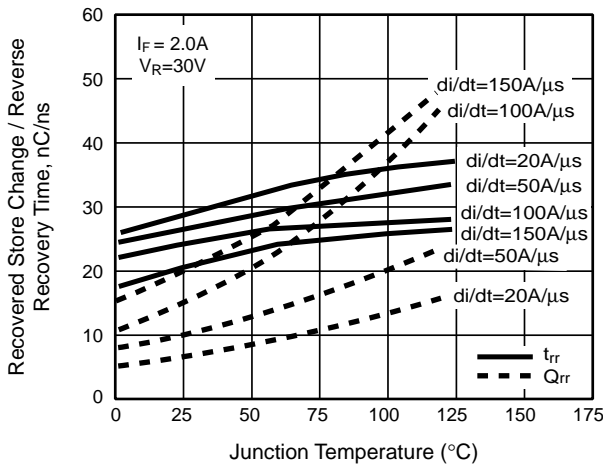
**Fig. 3 – Typical Instantaneous Forward Characteristics**



**Fig. 4 – Typical Reverse Leakage Characteristics**



**Fig. 5 – Reverse Switching Characteristics**



**Fig. 6 – Typical Junction Capacitance**

