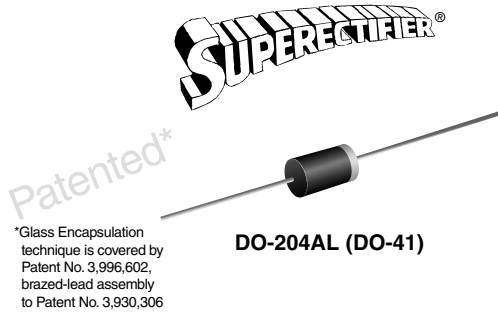


## Glass Passivated Ultrafast Rectifier



### FEATURES

- Cavity-free glass-passivated junction
- Ideal for printed circuit boards
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low leakage current
- Low switching losses, high efficiency
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


**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-204AL, molded plastic over glass body  
Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

**Polarity:** Color band denotes cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
$V_{RRM}$	600 V
$I_{FSM}$	30 A
$t_{rr}$	30 ns
$V_F$	1.3 V
$T_J \text{ max.}$	175 °C

MAXIMUM RATINGS ( $T_A = 25 \text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	600	V
Maximum RMS voltage	$V_{RMS}$	420	V
Maximum DC blocking voltage	$V_{DC}$	600	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_L = 85 \text{ °C}$ (Fig. 1)	$I_{F(AV)}$	1.0	A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	$I_{FSM}$	30	A
Non repetitive peak reverse energy <sup>(1)</sup>	$E_{RSM}$	5.0	mJ
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175	°C

**Note:**

(1) Peak reverse energy measured with 8/20  $\mu$ s surge

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	VALUE	UNIT
Minimum avalanche breakdown voltage	100 μA		V <sub>BR</sub>	600	V
Maximum instantaneous forward voltage	1.0 A	T <sub>J</sub> = 25 °C T <sub>J</sub> = 175 °C	V <sub>F</sub>	2.5 1.3	V
Maximum DC reverse current at rated DC blocking voltage		T <sub>A</sub> = 25 °C T <sub>A</sub> = 165 °C	I <sub>R</sub>	5.0 150	μA
Max. reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A		t <sub>rr</sub>	30	ns
Maximum junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>	45	pF
Maximum reverse recovery current slope	I <sub>F</sub> = 1 A, V <sub>R</sub> = 30 V, di <sub>F</sub> /dt = - 1 A/μs		di <sub>F</sub> /dt	7.0	A/μs

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance <sup>(1)(2)</sup>	R <sub>θJA</sub> R <sub>θJL</sub>	70 16	°C/W

**Notes:**

- (1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, mounted on P.C.B. with 0.5 x 0.5" (12 x 12 mm) copper pads
- (2) Thermal resistance from junction to lead at 0.375" (9.5 mm) lead length with both leads attached to heatsink

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SBYV26C-E3/54	0.339	54	5500	13" diameter paper tape and reel
SBYV26C-E3/73	0.339	73	3000	Ammo pack packaging
SBYV26CHE3/54 <sup>(1)</sup>	0.339	54	5500	13" diameter paper tape and reel
SBYV26CHE3/73 <sup>(1)</sup>	0.339	73	3000	Ammo pack packaging

**Note:**

- (1) Automotive grade AEC Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)

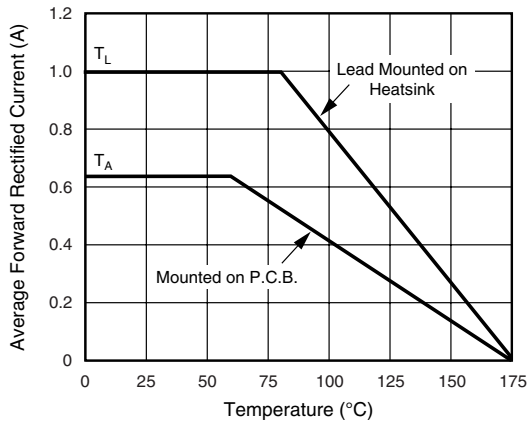


Figure 1. Maximum Forward Current Derating Curve

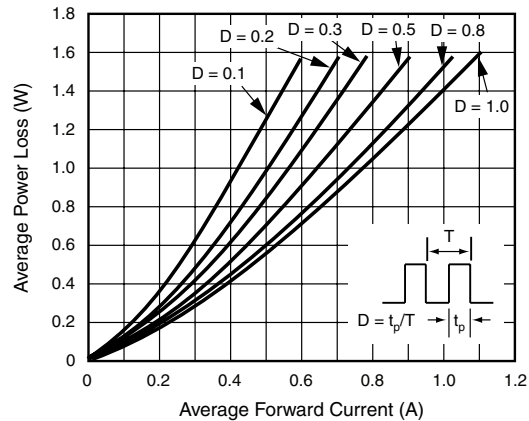


Figure 2. Forward Power Loss Characteristics

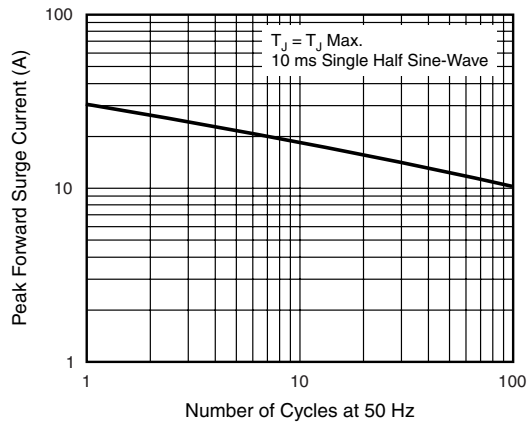


Figure 3. Maximum Non-Repetitive Peak Forward Surge Current

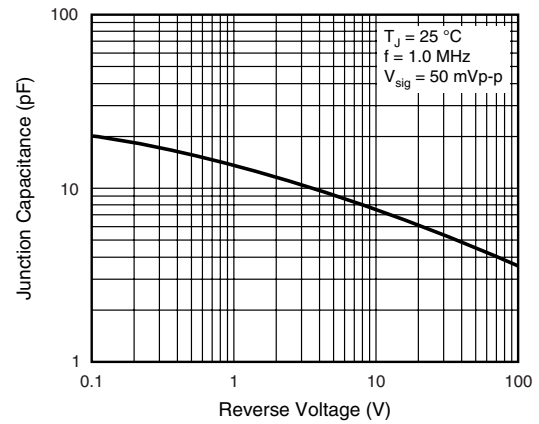


Figure 6. Typical Junction Capacitance

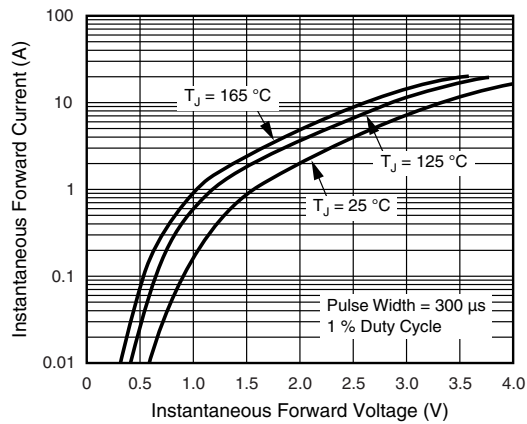


Figure 4. Typical Instantaneous Forward Characteristics

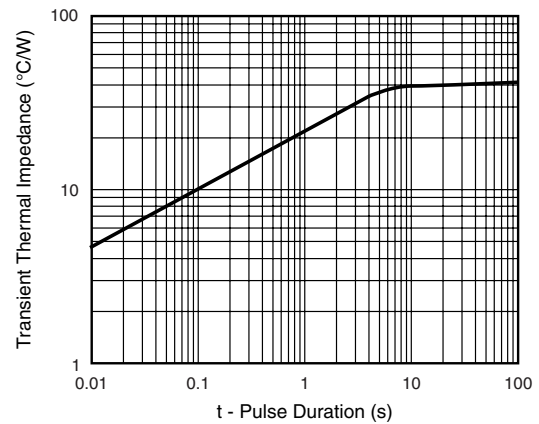


Figure 7. Typical Transient Thermal Impedance

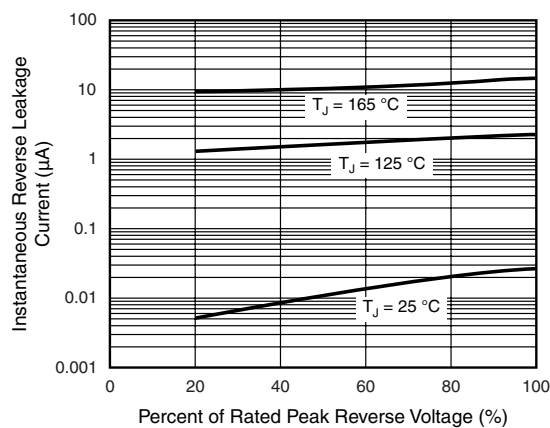
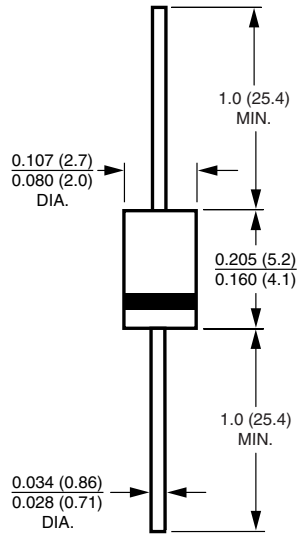


Figure 5. Typical Reverse Leakage Characteristics

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-204AL (DO-41)





## Disclaimer

All product specifications and data are subject to change without notice.

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