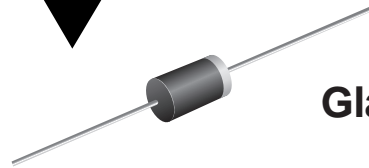
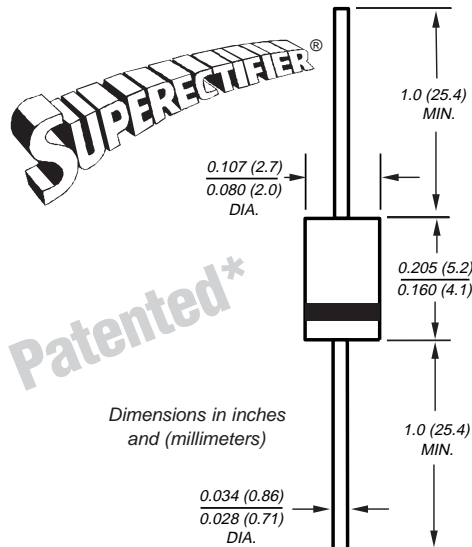


## Glass Passivated Ultrafast Rectifier

**Reverse Voltage** 600V  
**Forward Current** 1.0A

**DO-204AL (DO-41)**


\* Glass-plastic encapsulation technique is covered by Patent No. 3,996,602, and brazed-lead assembly by Patent No. 3,930,306

### Features

- High temperature metallurgically bonded construction
- Cavity-free glass passivated junction
- Ultrafast recovery time for high efficiency
- Low forward voltage, high current capability
- Capable of meeting environmental standards of MIL-S-19500
- Hermetically sealed package
- Low leakage current • High surge current capability
- Specified reverse surge capability
- High temperature soldering guaranteed: 350°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

### Mechanical Data

**Case:** JEDEC DO-204AL, molded plastic over glass body  
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026  
**Polarity:** Color band denotes cathode end  
**Mounting Position:** Any **Weight:** 0.012 oz., 0.3 g

### Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	600	V
Maximum RMS voltage	V <sub>RMS</sub>	420	V
Maximum DC blocking voltage	V <sub>DC</sub>	600	V
Maximum average forward rectified current 0.375" (9.5mm) lead length at T <sub>L</sub> = 85°C (See Fig. 1)	I <sub>F(AV)</sub>	1.0	A
Peak forward surge current 10ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	30	A
Non repetitive peak reverse energy (Note 1)	E <sub>RSM</sub>	5	mJ
Typical thermal resistance (Note 2,3)	R <sub>θJA</sub> R <sub>θJL</sub>	70 16	°C/W
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175	°C

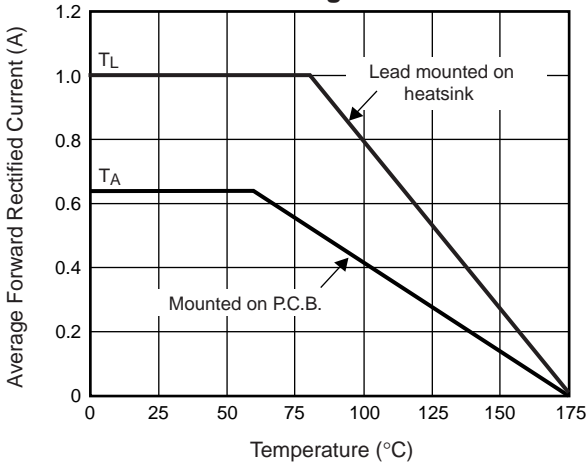
### Electrical Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

Minimum avalanche breakdown voltage at 100μA	V <sub>BR</sub>	600	V
Maximum instantaneous forward voltage at 1.0A	V <sub>F</sub>	2.5 1.3	V
Maximum DC reverse current at rated DC blocking voltage	I <sub>R</sub>	5.0 150	μA
Max. reverse recovery time at I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1.0A, I <sub>rr</sub> = 0.25A	t <sub>rr</sub>	30	ns
Maximum junction capacitance at 4.0V, 1MHz	C <sub>J</sub>	45	pF
Maximum reverse recovery current slope at I <sub>F</sub> = 1A, V <sub>R</sub> = 30V, di <sub>r</sub> /dt = -1A/μs	di <sub>r</sub> /dt	7	A/μs

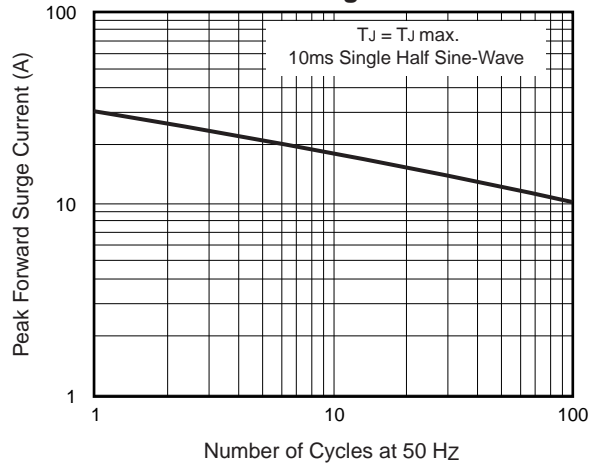
**Notes:** (1) Peak reverse energy measured with 8/20μs surge  
 (2) Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, mounted on P.C.B. with 0.5 x 0.5" (12 x 12mm) copper pads  
 (3) Thermal resistance from junction to lead at 0.375" (9.5mm) lead length with both leads attached to heatsink

**Ratings and Characteristic Curves** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

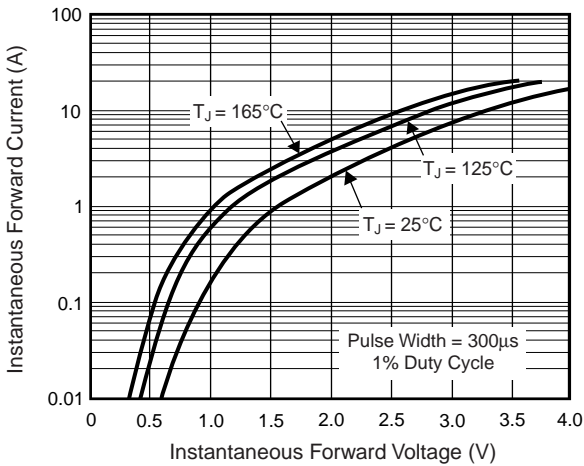
**Fig. 1 – Maximum Forward Current Derating Curve**



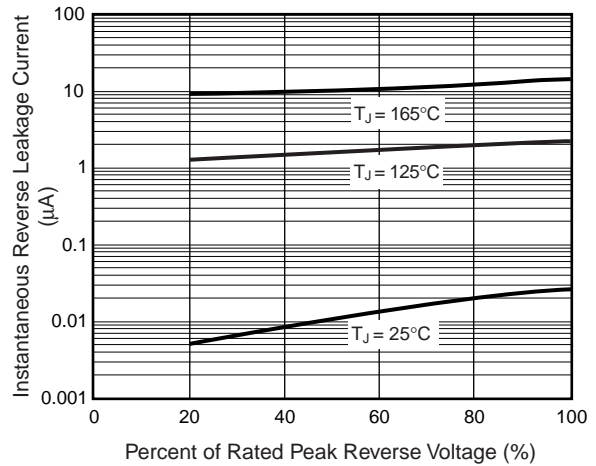
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current**



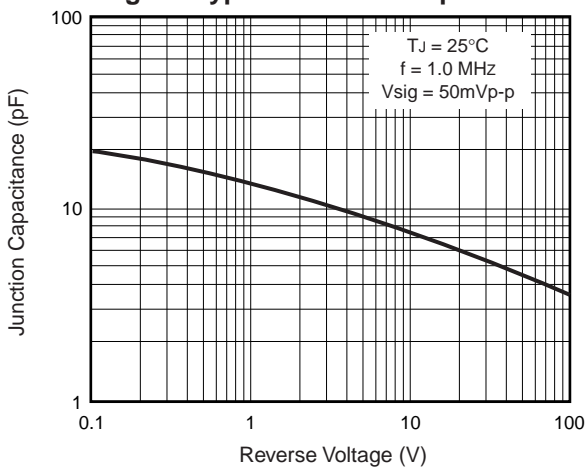
**Fig. 3 – Typical Instantaneous Forward Characteristics**



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



**Fig. 5 – Typical Junction Capacitance**



**Fig. 6 – Typical Transient Thermal Impedance**

