

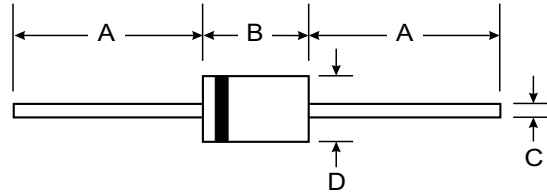


# UG3001 - UG3005

## 3.0A ULTRA-FAST GLASS PASSIVATED RECTIFIER

### Features

- Glass Passivated Die Construction
- Diffused Junction
- Ultra-Fast Switching for High Efficiency
- High Current Capability and Low Forward Voltage Drop
- Surge Overload Rating to 125A Peak
- Low Reverse Leakage Current
- Plastic Material: UL Flammability Classification Rating 94V-0



### Mechanical Data

- Case: Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Marking: Type Number
- Weight: 1.1 grams (approx.)
- Mounting Position: Any

DO-201AD		
Dim	Min	Max
A	25.40	—
B	7.20	9.50
C	1.20	1.30
D	4.80	5.30
All Dimensions in mm		

### Maximum Ratings and Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	UG3001	UG3002	UG3003	UG3004	UG3005	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$						
Working Peak Reverse Voltage	$V_{RWM}$	50	100	200	400	600	V
DC Blocking Voltage	$V_R$						
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	V
Average Rectified Output Current (Note 1)	$I_o$	3.0					A
		@ $T_A = 55^\circ\text{C}$					
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load (JEDEC Method)	$I_{FSM}$	125					A
Forward Voltage	$V_{FM}$	0.95		1.25	1.7		V
		@ $I_F = 3.0\text{A}$					
Peak Reverse Current	$I_{RM}$	5.0					$\mu\text{A}$
		@ $T_A = 25^\circ\text{C}$					
		@ $T_A = 100^\circ\text{C}$					
Reverse Recovery Time (Note 3)	$t_{rr}$	50			75		ns
Typical Junction Capacitance (Note 2)	$C_j$	60			30		pF
Typical Thermal Resistance Junction to Ambient (Note 1)	$R_{\theta JA}$	35					K/W
Operating and Storage Temperature Range	$T_j, T_{STG}$	-65 to +150					$^\circ\text{C}$

- Notes:
1. Valid provided that leads are maintained at ambient temperature at a distance of 9.5mm from the case.
  2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
  3. Measured with  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{rr} = 0.25\text{A}$ . See figure 5.

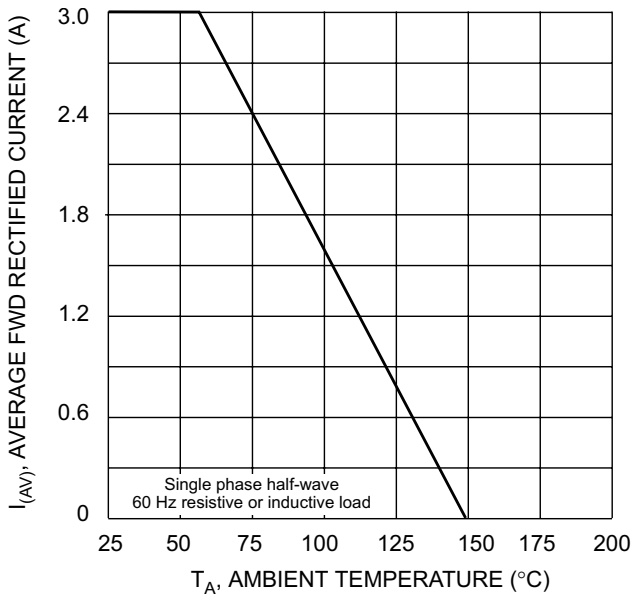


Fig. 1 Forward Current Derating Curve

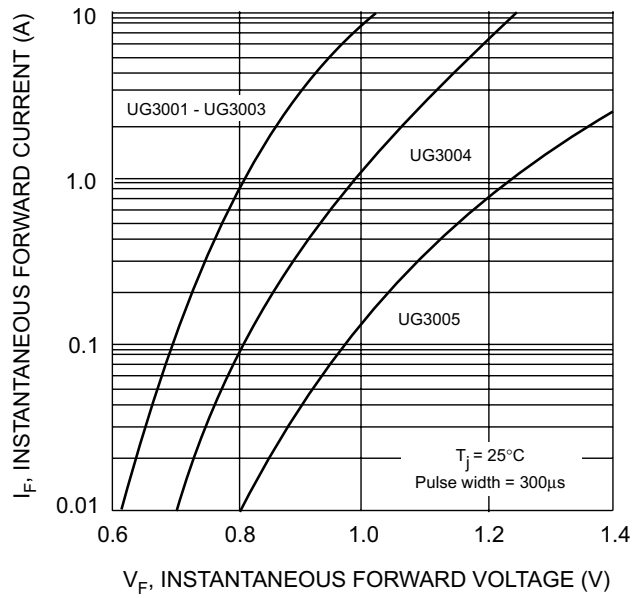


Fig. 2 Typical Forward Characteristics

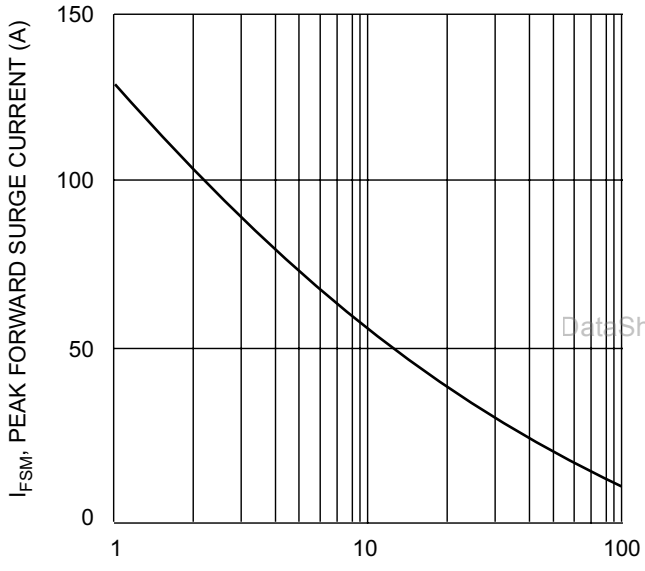


Fig. 3 Peak Forward Surge Current

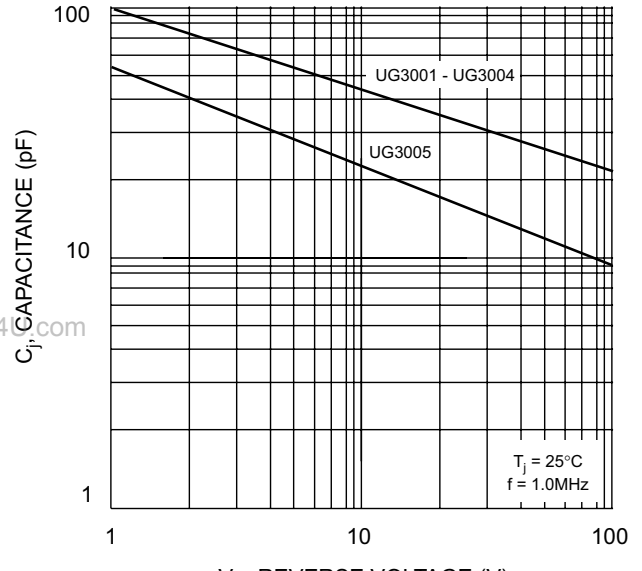
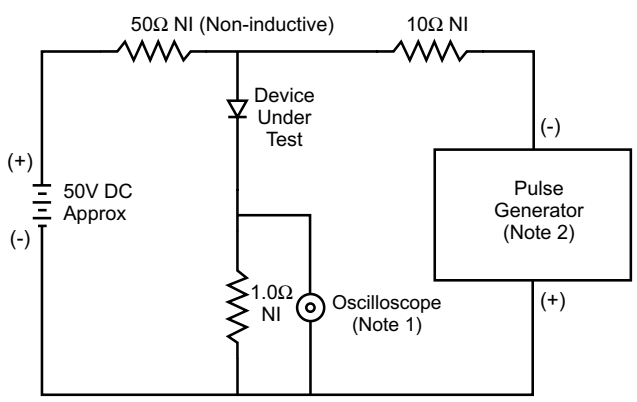
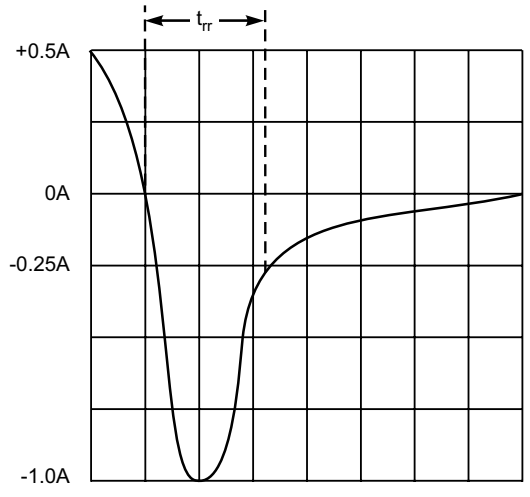


Fig. 4 Typical Junction Capacitance



- Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
  2. Rise Time = 10ns max. Input Impedance = 50Ω.



Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit