

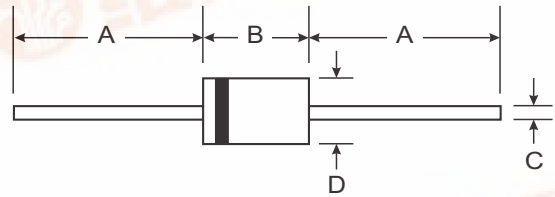


# UG3001 - UG3005

## 3.0A ULTRA-FAST GLASS PASSIVATED RECTIFIER

### Features

- Glass Passivated Die Construction
- Ultra-Fast Switching for High Efficiency
- Surge Overload Rating to 125A Peak
- Low Reverse Leakage Current
- **Lead Free Finish, RoHS Compliant (Note 4)**



### Mechanical Data

- Case: DO-201AD
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish — Tin. Plated Leads Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: Cathode Band
- Marking: Type Number
- Ordering Information: See Last Page
- Weight: 1.1 grams (approximate)

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<sub>A</sub> = 25°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 Working Peak Reverse Voltage DC Blocking Voltage (Note 5)	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	50	100	200	400	600	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	35	70	140	280	420	V
Average Rectified Output Current (Note 1) @ T <sub>A</sub> = 55°C	I <sub>O</sub>	3.0					A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load	I <sub>FSM</sub>	125					A
Forward Voltage @ I <sub>F</sub> = 3.0A	V <sub>FM</sub>	0.95			1.25	1.7	V
Peak Reverse Current at Rated DC Blocking Voltage (Note 5) @ T <sub>A</sub> = 25°C @ T <sub>A</sub> = 100°C	I <sub>RM</sub>				5.0 100		μA
Reverse Recovery Time (Note 3)	t <sub>rr</sub>	50				75	ns
Typical Total Capacitance (Note 2)	C <sub>T</sub>	60				30	pF
Typical Thermal Resistance Junction to Ambient (Note 1)	R <sub>θJA</sub>	35					°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-65 to +150					°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<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>rr</sub> = 0.25A. See figure 5.
  4. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied, see EU Directive Annex Notes 5 and 7.
  5. Short duration pulse test used to minimize self-heating effect.



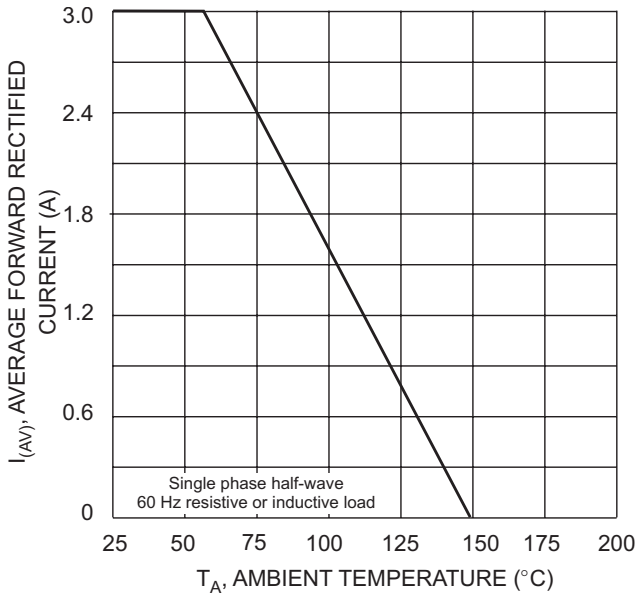


Fig. 1 Forward Current Derating Curve

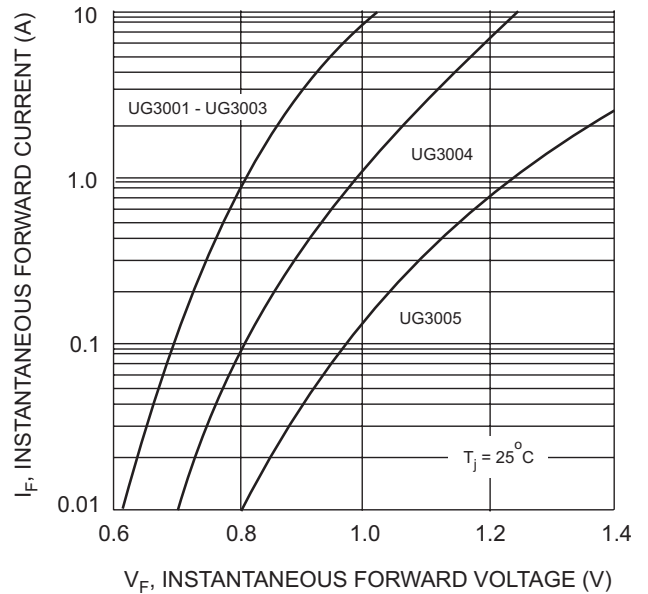


Fig. 2 Typical Forward Characteristics

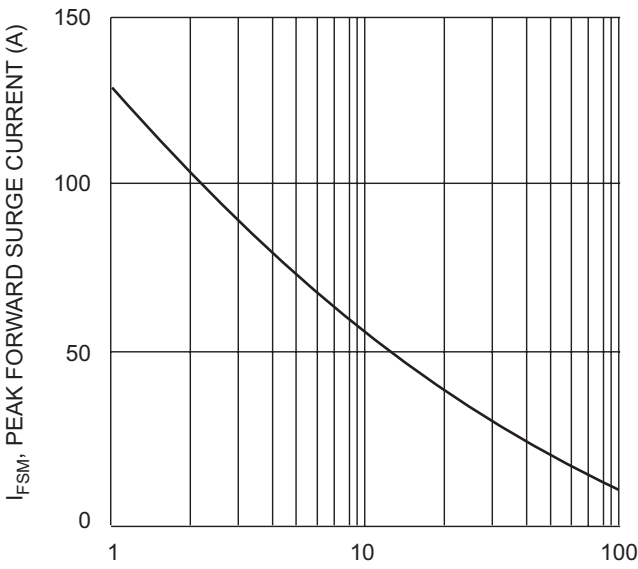


Fig. 3 Peak Forward Surge Current

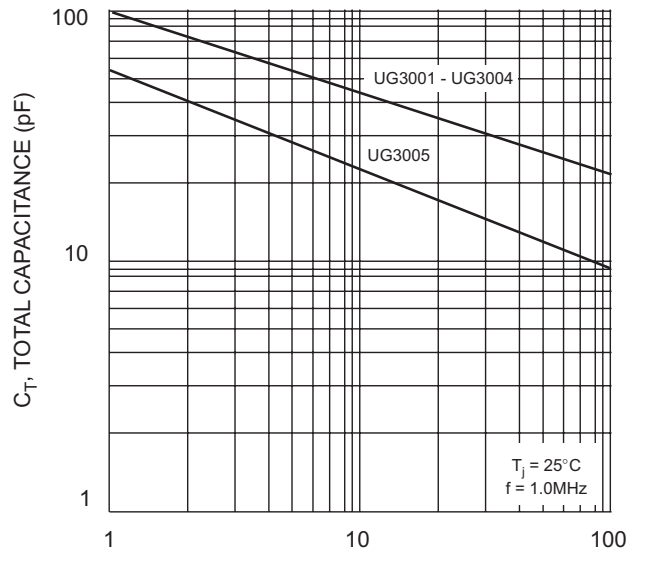
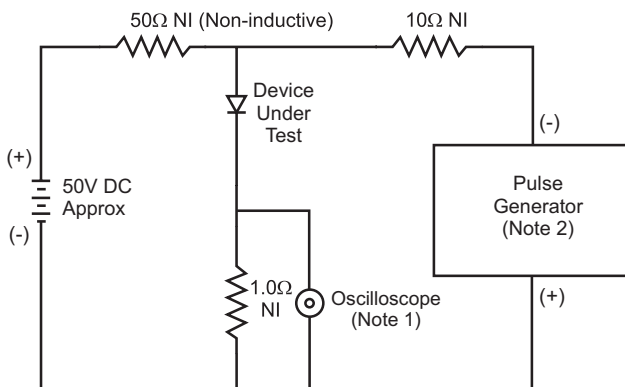
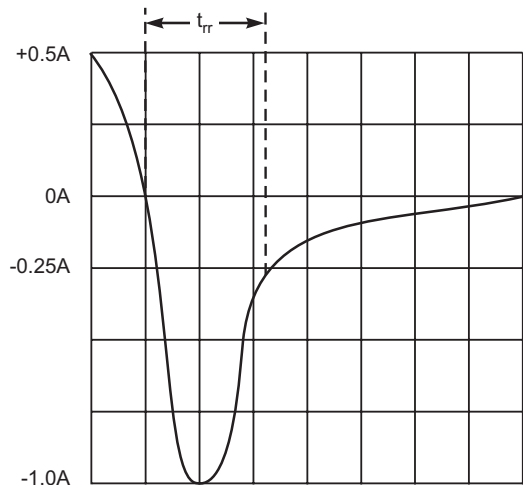


Fig. 4 Typical Total Capacitance



- 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



## Ordering Information (Note 6)

Device	Packaging	Shipping
UG3001-B	DO-201AD	500/Bulk
UG3001-T	DO-201AD	1.2K/Tape & Reel, 13-inch
UG3002-B	DO-201AD	500/Bulk
UG3002-T	DO-201AD	1.2K/Tape & Reel, 13-inch
UG3003-B	DO-201AD	500/Bulk
UG3003-T	DO-201AD	1.2K/Tape & Reel, 13-inch
UG3004-B	DO-201AD	500/Bulk
UG3004-T	DO-201AD	1.2K/Tape & Reel, 13-inch
UG3005-B	DO-201AD	500/Bulk
UG3005-T	DO-201AD	1.2K/Tape & Reel, 13-inch

Notes: 6. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02008.pdf>

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