

## 2.0A ULTRA-FAST GLASS PASSIVATED RECTIFIER

### Features

- Glass Passivated Die Construction
- Ultra-Fast Switching for High Efficiency
- Surge Overload Rating to 60A Peak
- Low Reverse Leakage Current
- **Lead Free Finish, RoHS Compliant (Note 4)**

### Mechanical Data

- Case: DO-15
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish - Tin. Plated Leads Solderable per MIL-STD-202, Method 208 @3
- Polarity: Cathode Band
- Marking: Type Number
- Ordering Information: See Page 3
- Weight: 0.4 grams (approximate)

### Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

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

Characteristic	Symbol	UG2001	UG2002	UG2003	UG2004	UG2005	UG2006	UG2007	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	V
Working Peak Reverse Voltage	V <sub>RWM</sub>								
DC Blocking Voltage (Note 5)	V <sub>R</sub>								
RMS Reverse Voltage	V <sub>R(RMS)</sub>	35	70	140	280	420	560	700	V
Average Rectified Output Current @T <sub>A</sub> = 55°C (Note 1)	I <sub>O</sub>				2.0				A
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>				60				A
8.3ms Single half sine-wave Superimposed on Rated Load									

### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	50	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

### Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	UG2001	UG2002	UG2003	UG2004	UG2005	UG2006	UG2007	Unit
Forward Voltage @ I <sub>F</sub> = 2.0A	V <sub>F</sub>	1.0			1.3		1.7		V
Peak Reverse Current @ T <sub>A</sub> = 25°C	I <sub>R</sub>				5.0				μA
at Rated DC Blocking Voltage (Note 5) @ T <sub>A</sub> = 100°C					100				
Typical Total Capacitance (Note 2)	C <sub>T</sub>		30				15		pF
Reverse Recovery Time (Note 3)	t <sub>rr</sub>		50				75		ns

- 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. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at [http://www.diodes.com/products/lead\\_free.html](http://www.diodes.com/products/lead_free.html).
  5. Short duration pulse test used to minimize self-heating effect.

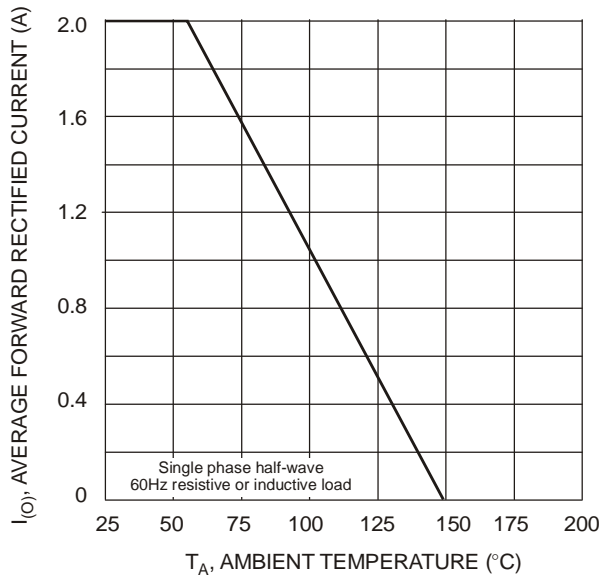


Fig. 1 Forward Current Derating Curve

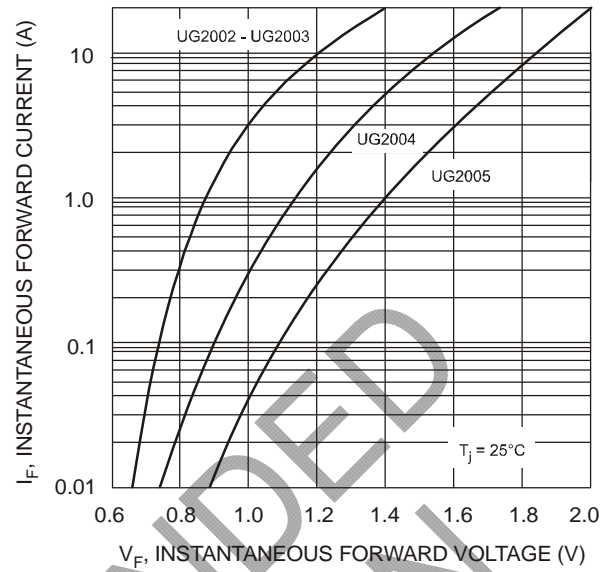


Fig. 2 Typical Forward Characteristics

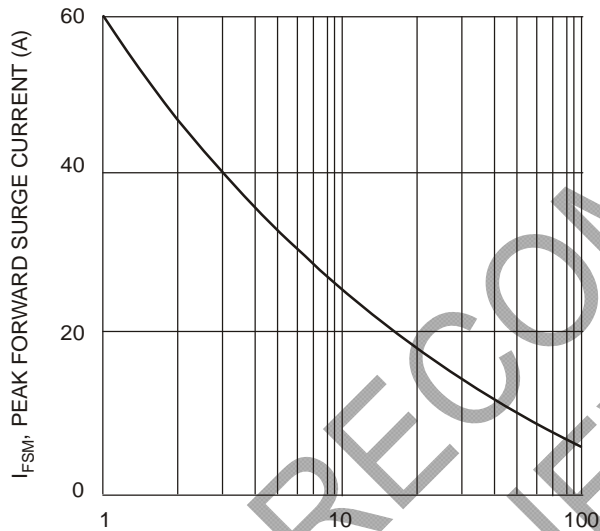


Fig. 3 Peak Forward Surge Current

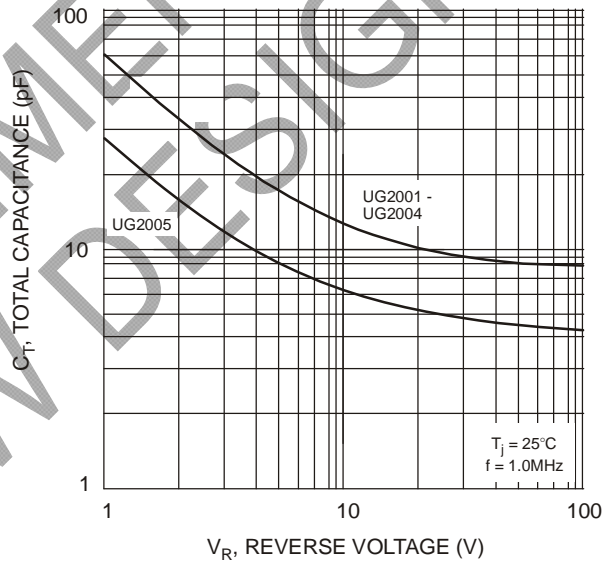
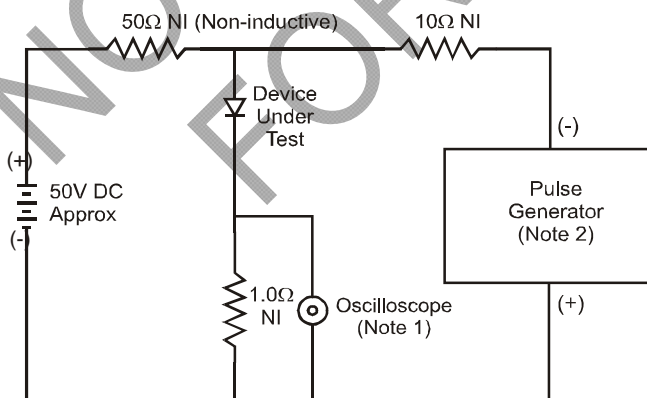
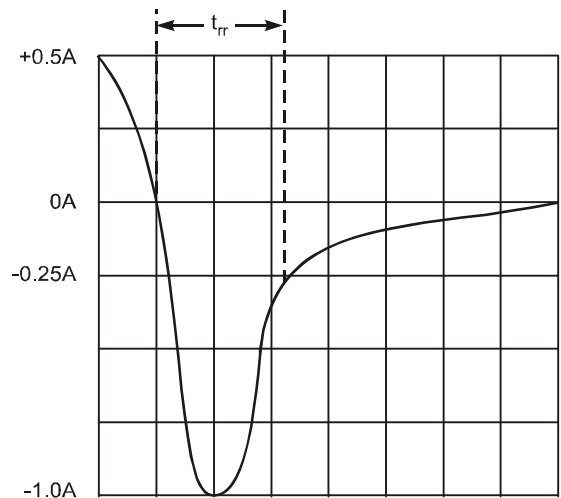


Fig. 4 Typical Total Capacitance



Notes:

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



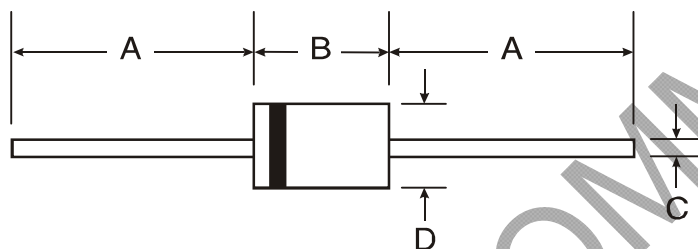
Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

**Ordering Information** (Note 6)

Part Number	Case	Packaging
UG2001-T	DO-15	4K/Tape & Reel, 13-inch
UG2002-T	DO-15	4K/Tape & Reel, 13-inch
UG2003-T	DO-15	4K/Tape & Reel, 13-inch
UG2004-T	DO-15	4K/Tape & Reel, 13-inch
UG2005-T	DO-15	4K/Tape & Reel, 13-inch
UG2006-T	DO-15	4K/Tape & Reel, 13-inch
UG2007-T	DO-15	4K/Tape & Reel, 13-inch

Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Package Outline Dimensions**


DO-15		
Dim	Min	Max
A	25.40	—
B	5.50	7.62
C	0.686	0.889
D	2.60	3.60
All Dimensions in mm		

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