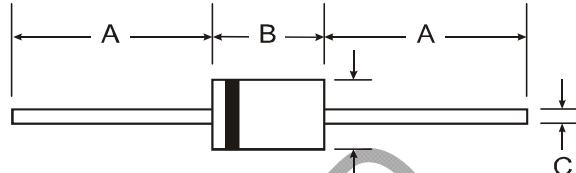


### Features

- Glass Passivated Die Construction
- Ultra-Fast Switching for High Efficiency
- Surge Overload Rating to 30A Peak
- Low Reverse Leakage Current
- Lead Free Finish, RoHS Compliant (Note 4)



### Mechanical Data

- Case: DO-41
- 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 Page 3
- Weight: 0.35 grams (approximate)

DO-41		
Dim	Min	Max
A	25.40	—
B	4.06	5.21
C	0.71	0.864
D	2.00	2.72

All Dimensions in mm

### Maximum Ratings and Electrical Characteristics

$\text{@ } T_A = 25^\circ\text{C}$  unless otherwise specified

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

Characteristic	Symbol	UG1001	UG1002	UG1003	UG1004	UG1005	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$						
Working Peak Reverse Voltage	$V_{RWM}$	50	100	200	400	600	V
DC Blocking Voltage (Note 5)	$V_R$						
RMS Reverse Voltage	$V_{R(\text{RMS})}$	35	70	140	280	420	V
Average Rectified Output Current (Note 1)	$I_O$			1.0			A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$			30			A
Forward Voltage	$V_{FM}$		1.0		1.3	1.7	V
Peak Reverse Current at Rated DC Blocking Voltage (Note 5)	$I_{RM}$			5.0			$\mu\text{A}$
@ $T_A = 25^\circ\text{C}$				100			
Reverse Recovery Time (Note 3)	$t_{rr}$		50		75		ns
Typical Total Capacitance (Note 2)	$C_T$		20		10		pF
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$		95				$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_i, T_{STG}$		-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.
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.

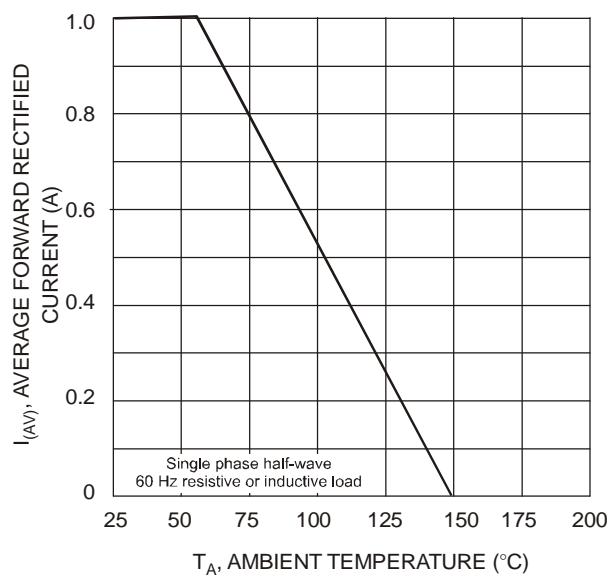


Fig. 1 Forward Current Derating Curve

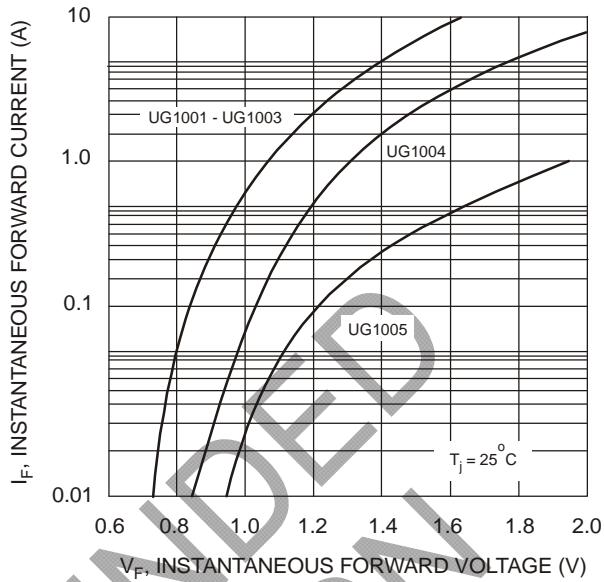


Fig. 2 Typical Forward Characteristics

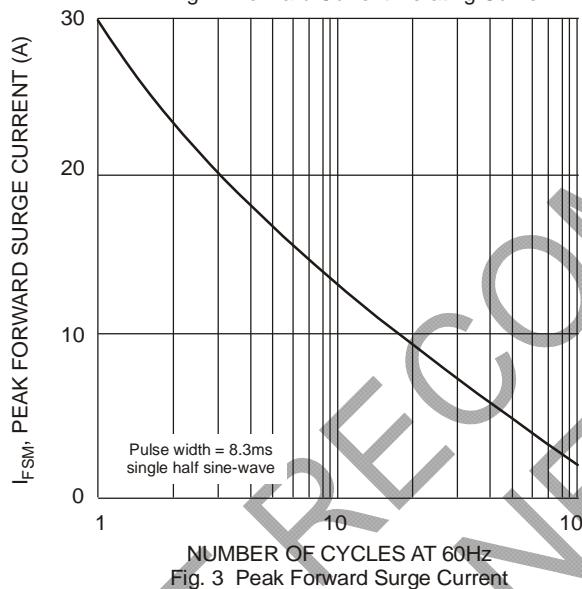


Fig. 3 Peak Forward Surge Current

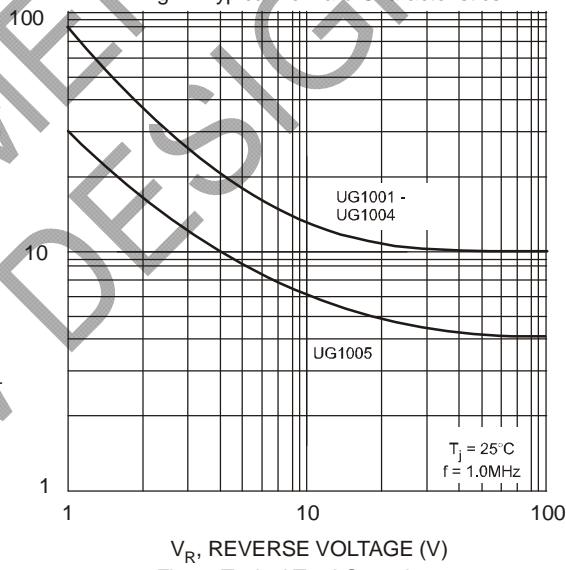
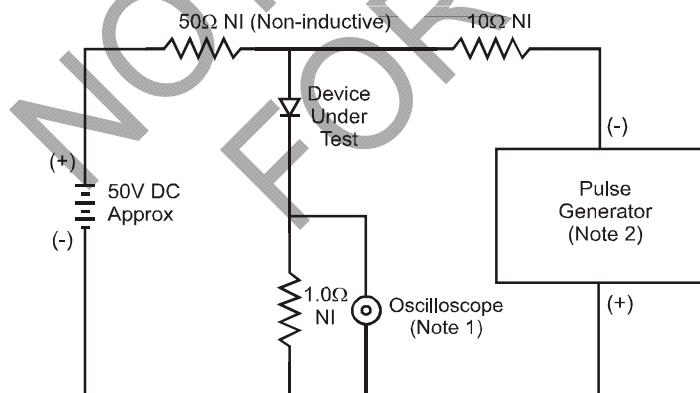


Fig. 4 Typical Total Capacitance



Notes:

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

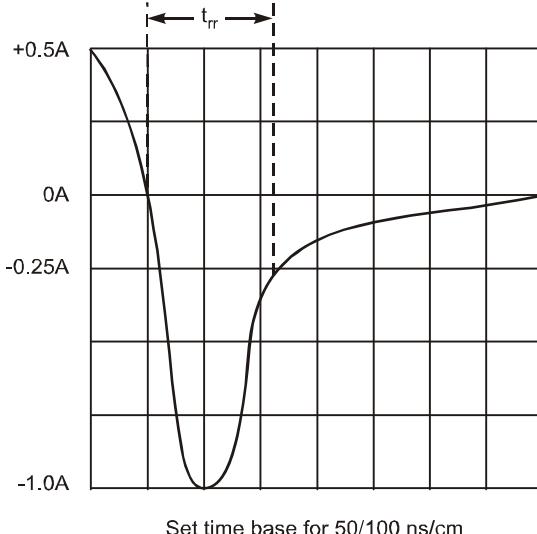


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

**Ordering Information (Note 6)**

Device	Packaging	Shipping
UG1001-A	DO-41	5K/Ammo Pack
UG1001-B	DO-41	1K/Bulk
UG1001-T	DO-41	5K/Tape & Reel, 13-inch
UG1002-A	DO-41	5K/Ammo Pack
UG1002-B	DO-41	1K/Bulk
UG1002-T	DO-41	5K/Tape & Reel, 13-inch
UG1003-A	DO-41	5K/Ammo Pack
UG1003-B	DO-41	1K/Bulk
UG1003-T	DO-41	5K/Tape & Reel, 13-inch
UG1004-A	DO-41	5K/Ammo Pack
UG1004-B	DO-41	1K/Bulk
UG1004-T	DO-41	5K/Tape & Reel, 13-inch
UG1005-A	DO-41	5K/Ammo Pack
UG1005-B	DO-41	1K/Bulk
UG1005-T	DO-41	5K/Tape & Reel, 13-inch

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

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