Fast Rectifiers

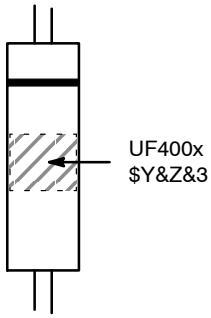
UF4001 - UF4007

AXIAL LEAD / DO−41
CASE 017AH

Features

- Low Forward Voltage Drop
- High Surge Current Capability
- High Reliability
- High Current Capability
- Glass−Passivated Junction
- These are Pb−Free Devices

MARKING DIAGRAM



UF400x = Specific Device Code
x = 1/2/3/4/5/6/7
$Y = **onsemi** Logo
&Z = Assembly Plant Code
&3 = 3−Digit Data Code (Year & Week)

(Color Band Denotes Cathode)

ABSOLUTE MAXIMUM RATINGS

(Values are at T_A = 25°C unless otherwise noted.)

Symbol	Parameter	Value							Unit
		UF 4001	UF 4002	UF 4003	UF 4004	UF 4005	UF 4006	UF 4007	
V_{RRM}	Maximum Repetitive Reverse Voltage	50	100	200	400	600	800	1000	V
$I_{F(AV)}$	Average Rectified Forward Current .375" Lead Length at T_A = 75°C	1.0							A
I_{FSM}	Non−Repetitive Peak Forward Surge Current 8.3 ms Single Half−Sine−Wave	30							A
T_{STG}	Storage Temperature Range	−65 to +150							°C
T_J	Operating Junction Temperature	−65 to +150							°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

(Values are at T_A = 25°C unless otherwise noted.)

Symbol	Parameter	Value	Unit
P_D	Power Dissipation	2.08	W
$R_{\theta JA}$	Thermal Resistance, Junction−to−Ambient	60	°C/W
$R_{\theta JL}$	Thermal Resistance, Junction−to−Lead	30	°C/W

ORDERING INFORMATION

Device	Package	Shipping†
UF4001	Axial Lead (DO−41) (Pb−Free)	5000 / Tape & Reel
UF4002		
UF4003		
UF4004		
UF4005		
UF4006		
UF4007		

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

ELECTRICAL CHARACTERISTICS (Values are at T_A = 25°C unless otherwise noted.)

Symbol	Parameter	Test Conditions	Value							Unit
			UF4001	UF4002	UF4003	UF4004	UF4005	UF4006	UF4007	
V_F	Maximum Forward Voltage	I_F = 1.0 A	1.0				1.7			V
t_{rr}	Maximum Reverse Recovery Time	I_F = 0.5 A, I_R = 1.0 A, I_{RR} = 0.25 A	50				75			ns
I_R	Maximum Reverse Current at Rated V_R	T_A = 25°C T_A = 100°C	10 50							μA
C_T	Maximum Total Capacitance	V_R = 4.0 V, f = 1.0 MHz	17							pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

© Semiconductor Components Industries, LLC, 1999

TYPICAL PERFORMANCE CHARACTERISTICS

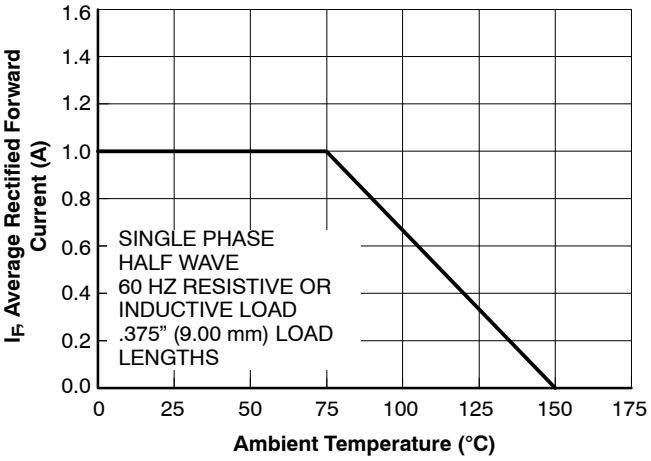


Figure 1. Forward Current Derating Curve

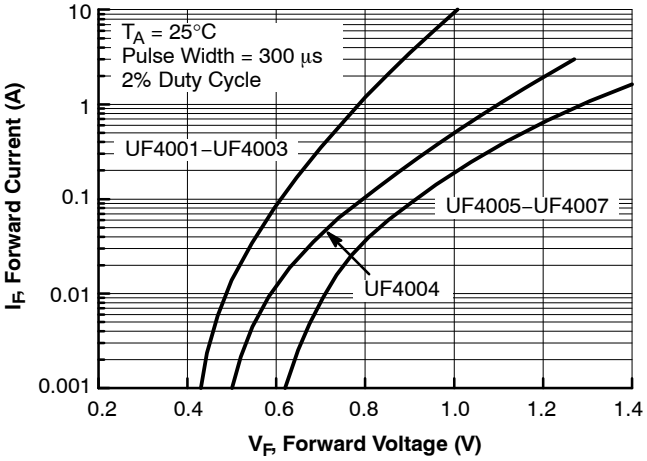


Figure 2. Forward Characteristics

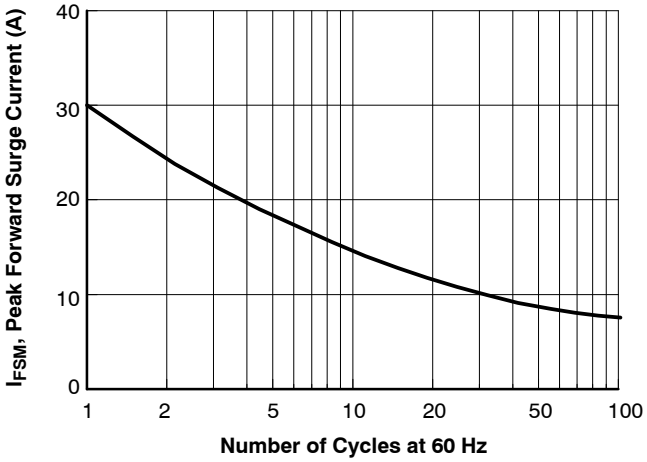


Figure 3. Non–Repetitive Surge Current

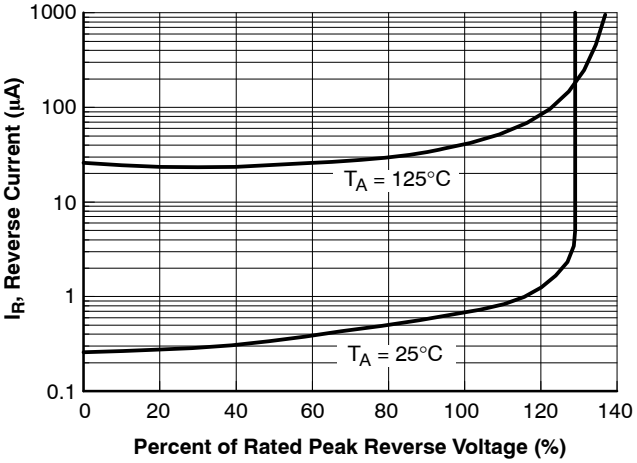


Figure 4. Reverse Characteristics

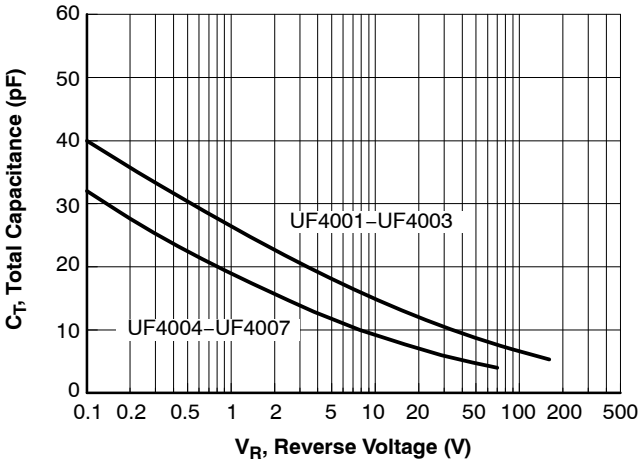
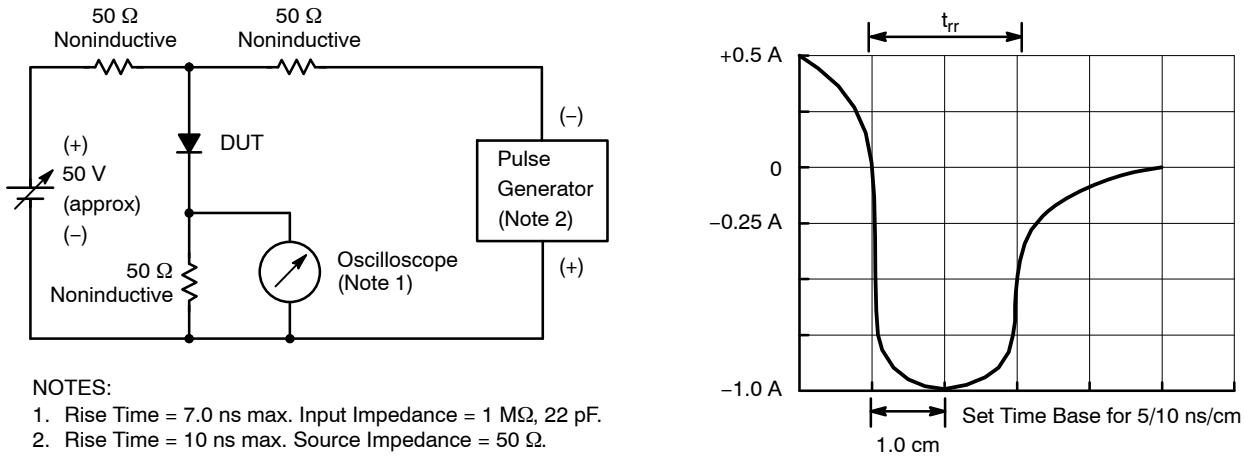


Figure 5. Typical Junction Capacitance

TEST CIRCUIT DIAGRAM

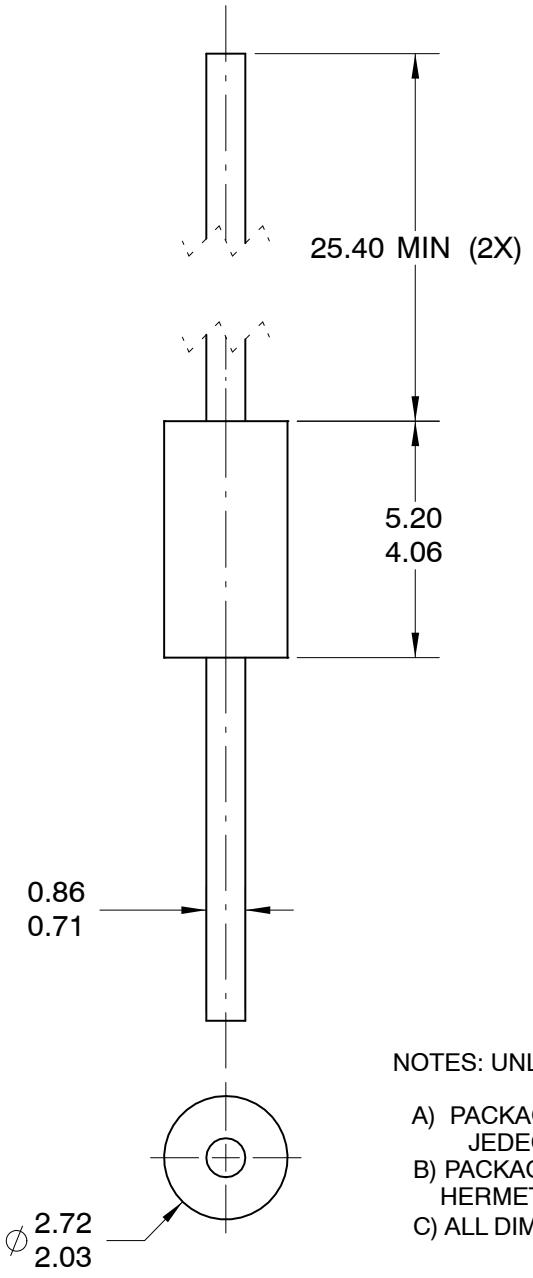


NOTES:
1. Rise Time = 7.0 ns max. Input Impedance = 1 MΩ, 22 pF.
2. Rise Time = 10 ns max. Source Impedance = 50 Ω.

Figure 6. Reverse Recovery Time Characteristic and Test Circuit Diagram

AXIAL LEAD / DO−41
CASE 017AH
ISSUE O

DATE 31 AUG 2016



NOTES: UNLESS OTHERWISE SPECIFIED

A) PACKAGE STANDARD REFERENCE: JEDEC DO−204 VARIATION AL.
B) PACKAGE BODY CAN BE PLASTIC OR HERMETICALLY SEALED GLASS.
C) ALL DIMENSIONS ARE IN MILLIMETERS.

DOCUMENT NUMBER:	**98AON13444G**	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	**AXIAL LEAD / DO−41**	**PAGE 1 OF 1**

onsemi and onsemi are trademarks of Semiconductor Components Industries, LLC dba **onsemi** or its subsidiaries in the United States and/or other countries. **onsemi** reserves the right to make changes without further notice to any products herein. **onsemi** makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. **onsemi** does not convey any license under its patent rights nor the rights of others.

onsemi, onsemi, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent−Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as−is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:
Technical Library: www.onsemi.com/design/resources/technical−documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support
For additional information, please contact your local Sales Representative at
www.onsemi.com/support/sales