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Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

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August 2016



UF4001 - UF4007

Fast Rectifiers

Features

- Low Forward Voltage Drop
- High Surge Current Capability
- High Reliability
- High Current Capability
- Glass-Passivated Junction



Ordering Information

Part Number	Top Mark	Package	Packing Method
UF4001	UF4001	DO-204AL (DO-41)	Tape and Reel
UF4002	UF4002	DO-204AL (DO-41)	Tape and Reel
UF4003	UF4003	DO-204AL (DO-41)	Tape and Reel
UF4004	UF4004	DO-204AL (DO-41)	Tape and Reel
UF4005	UF4005	DO-204AL (DO-41)	Tape and Reel
UF4006	UF4006	DO-204AL (DO-41)	Tape and Reel
UF4007	UF4007	DO-204AL (DO-41)	Tape and Reel

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^\circ\text{C}$ 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 $T_A = 75^\circ\text{C}$				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

Thermal Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

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

Electrical Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Conditions	Value							Unit
			UF 4001	UF 4002	UF 4003	UF 4004	UF 4005	UF 4006	UF 4007	
V_F	Maximum Forward Voltage	$I_F = 1.0 \text{ A}$	1.0				1.7			V
t_{rr}	Maximum Reverse Recovery Time	$I_F = 0.5 \text{ A}$, $I_R = 1.0 \text{ A}$, $I_{RR} = 0.25 \text{ A}$	50				75			ns
I_R	Maximum Reverse Current at Rated V_R	$T_A = 25^\circ\text{C}$	10							μA
		$T_A = 100^\circ\text{C}$		50						
C_T	Maximum Total Capacitance	$V_R = 4.0 \text{ V}$, $f = 1.0 \text{ MHz}$	17							pF

Typical Performance Characteristics

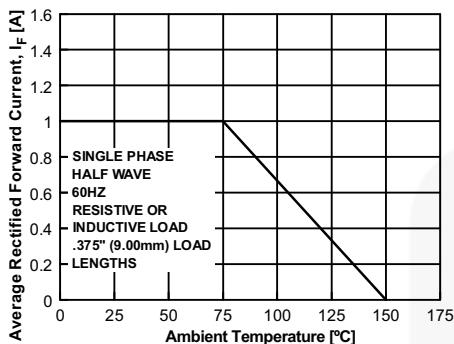


Figure 1. Forward Current Derating Curve

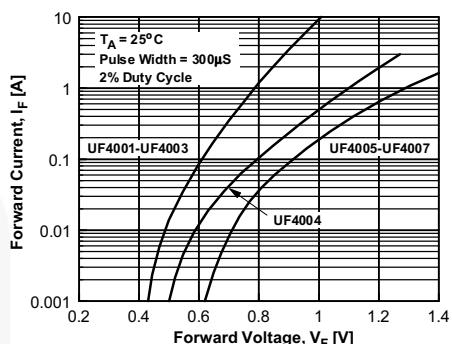


Figure 2. Forward Characteristics

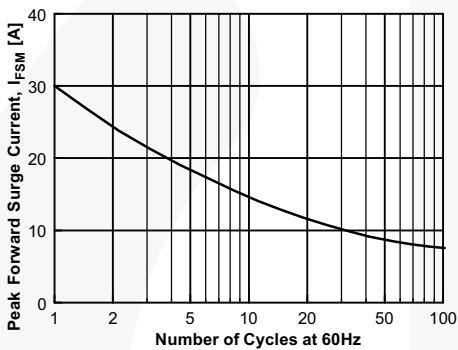


Figure 3. Non-Repetitive Surge Current

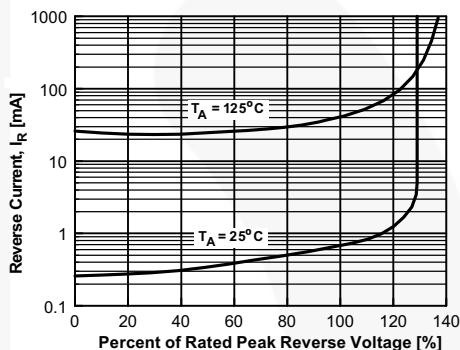


Figure 4. Reverse Characteristics

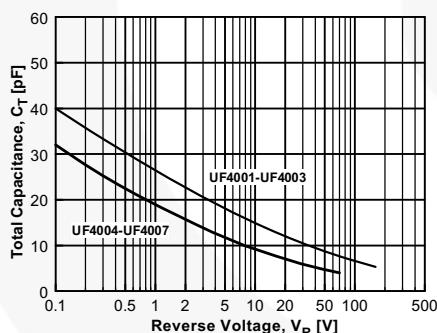


Figure 5. Typical Junction Capacitance

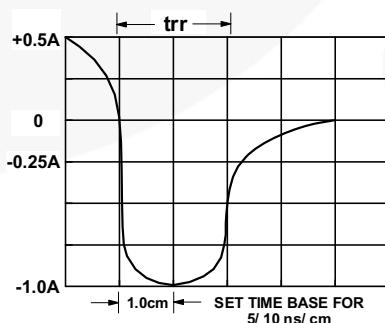
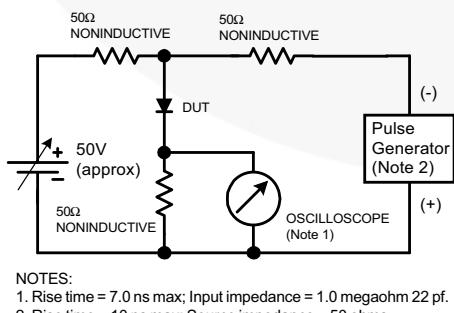
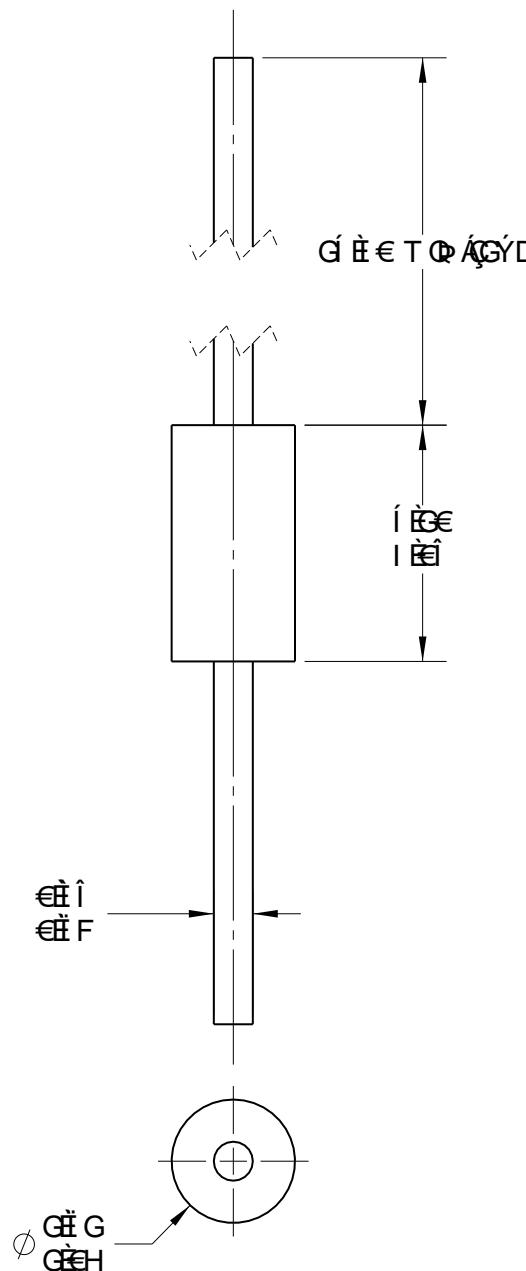


Figure 6. Reverse Recovery Time Characteristic and Test Circuit Diagram

ÜÒХÀФИРÙ				
ÞÓÜ	ÓÓСÚØУФИР	ÓСØÙ	ÓҮФЕÚÚÖ	
F	ÜÒХÀФИРØÓÙ/ØÓÓ	GIRNSÉ	PÝØPØÙWZPUW	
G	ÓРØФØÓÙ EGÁJU EÆÉ ÓРØФØÓÙ UVØMØDØÓÙ/ØÓÙ VØDØU ØÝÈ UØT UXØMØSØUØMØ PØ/ØSØE	FJÜØÙÉ	PÝØPØÙWZPUW	



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