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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 guestions@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.

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

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

Electrical Characteristics

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

			Value							
Symbol	Parameter	Conditions	UF 4001	UF 4002	UF 4003	UF 4004	UF 4005	UF 4006	UF 4007	Unit
V _F	Maximum Forward Voltage	I _F = 1.0 A		1	.0			1.7		V
t _{rr}	Maximum Reverse Recovery Time	$I_F = 0.5 A,$ $I_R = 1.0 A,$ $I_{RR} = 0.25 A$		5	50			75		ns
1_	Maximum Reverse Current	$T_A = 25^{\circ}C$		10					μА	
I _R	at Rated V _R	T _A = 100°C	50				μΑ			
C _T	Maximum Total Capacitance	$V_R = 4.0 \text{ V},$ f = 1.0 MHz				17				pF

Typical Performance Characteristics

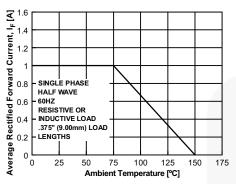


Figure 1. Forward Current Derating Curve

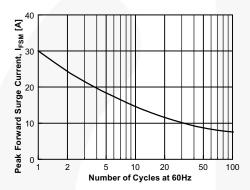


Figure 3. Non-Repetitive Surge Current

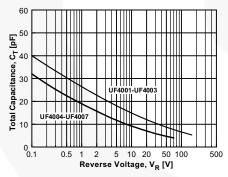
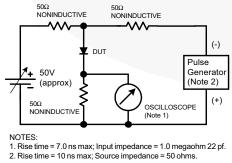


Figure 5. Typical Junction Capacitance







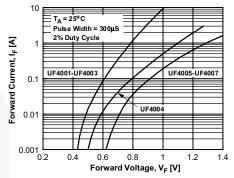


Figure 2. Forward Characteristics

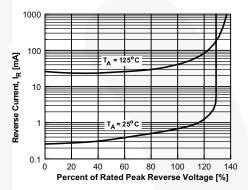


Figure 4. Reverse Characteristics

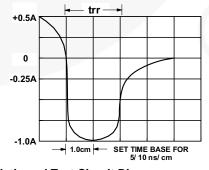
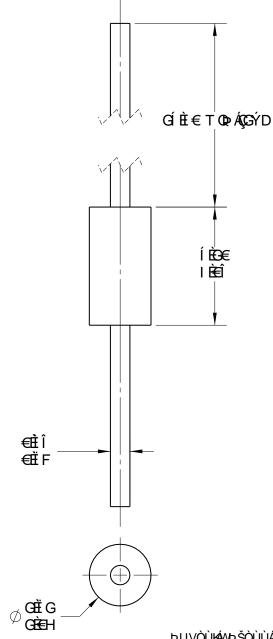


Figure 6. Reverse Recovery Time Characteristic and Test Circuit Diagram

ÚÞUÐÁ					
ÞÓÜ	ÖÒÙÔÜŒVŒÞ	ÖŒ/Ò	ÓŸĐŒÚÚ ©		
F	ÜÒŠÒŒÙÒÖÁ/UÁÖÔÔ	GJRWŠ€Ì	PŸŒÞÕÐÁÛWZPUW		
G	ÔPCEÞŐÒÁ ÉЀÁVUÁ ÉÐFÈ ÔPCEÞŐÒÁÞUVÒÁÓÁKEÖÖÖÖÁÚŠCEÚVÔGÓUÖŸÈ ŰÖTUXÓÁŐŠCEJUÁÚÞÁVGSÖÉ	FJÙÒÚ€Ì	PŸŒÞÕÐÂÛWZPUW		



ÞU V Ò Ù KÁN Þ Š Ò Ù Ú ÁU V P Ò Ü Y QÙ Ò ÁU Ú Ò Ô Q Q Ò Ö

AMOEMÁJOEÔS CEÕ ÒÁJVOEÞÖCE JÖÁJ ÒZOÒU ÒÞÔÒKÁ
RÒÖOÔÁÖU EÐEL ÁK CEJ QEVQU ÞÁQEŠÈ
AMÓDÁJOEÔS CEÑ ÒÁÓU ÖŸ ÁÔCEÞÁÓ ÁJ ŠCEÙ VQĎÁJ Ü ÁK
AMMIMIR ÒÜT ÒV QÔCEŠŠÝ ÁJ ÒCEŠOÖ ÁŐ ŠCEÙ ÚÆ:
AMÖDÁGEŠÁÖGT ÒÞ ÙQU Þ ÙÁQEJ ÒÁQÞÁT (SŠST ÒV ÒÜ ÙÈ
AMÖDÁGEŠÝÖGT QÞÔÁZSŠÒÁÞ CET ÒKÖU I FOEÜ ÒX G

ŒÚÚÜUXŒŠÙ	ÓÆOÖ					
ÖÜGY ÞK ÓUÓUŸÁT ŒŠÖU	FJÙÒÚ€Ì	FAIRCHILD SEMICONDUCTOR TM				
^{ôpòòsòòK} PÒÞÜŸÁŸŒÞÕ						
ŒŰŰÜUXÒÖK ÓŸÁRWŒÐÕ		OÉ ŒŠÃŒ ČŒ				
œúúuxòök PUY ŒÜÖÁŒŠŠÒÞ		RÒÖÒÔÁÖUGEI ÉKCEÜQEZQUÞÁQEŠ				
ÚÚURÓÓVQIÞ ŽT T Á QC ÓP		FIFE PEDE T SVEÖUI FOE G				
		ØUÜTÖÜŠŸKÞEŒÜE ÙPÒÖVÁK FÁUØÁF				

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Офис по работе с юридическими лицами:

105318, г. Москва, ул. Щербаковская д. 3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru moschip.ru_6 moschip.ru 4 moschip.ru 9