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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



**DO-41 (Plastic)**  
COLOR BAND DENOTES CATHODE

## 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							$^\circ\text{C}$
$T_J$	Operating Junction Temperature	-65 to +150							$^\circ\text{C}$

## 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	$^\circ\text{C}/\text{W}$
$R_{\theta JL}$	Thermal Resistance, Junction-to-Lead	30	$^\circ\text{C}/\text{W}$

## 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	
$V_F$	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						$\mu\text{A}$
		$T_A = 100^\circ\text{C}$	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

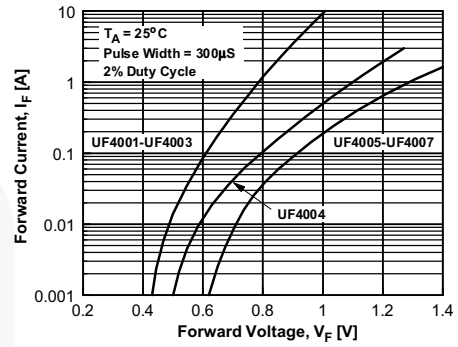


Figure 2. Forward Characteristics



Figure 3. Non-Repetitive Surge Current



Figure 4. Reverse Characteristics



Figure 5. Typical Junction Capacitance



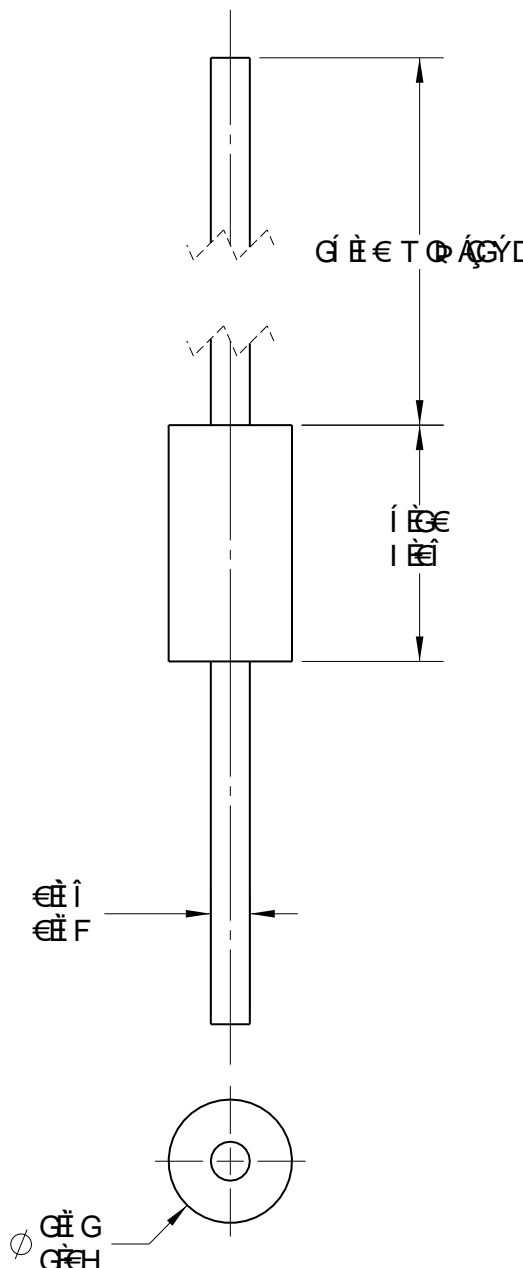
- NOTES:  
 1. Rise time = 7.0 ns max; Input impedance = 1.0 megaohm 22 pf.  
 2. Rise time = 10 ns max; Source impedance = 50 ohms.

Figure 6. Reverse Recovery Time Characteristic and Test Circuit Diagram



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 VP:OUUOP:ESSOAT QDOUVP:OUP:Φ:UEAUB:OOUO:OAKU OAUUUDUUDUOBEP:BUAMUO  
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ΎΟΧΩΠΕΨ			
ΠΟΨ	ΟΟΨΟΨΩΠΩΠ	ΟΟΨΟ	ΟΨΩΨΨ
F	ΨΟΨΟΨΟΨΑΨΨΟΨ	GJRMSEI	PΨOPEΨUMZPUW
G	OPPE OOA EEAUA EPE OPPE OOP UNVOA OAE OOA JSCEV O OAU OYE UOT UXOA OSGEUA UP A O VSOE	FJUOUEI	PΨOPEΨUMZPUW



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OUOY PK OUOUYA CEOU	FJUOUEI	
OPOSOK POPUYA OPO		
CEUUXOK OYAV OPO		
CEUUXOK PUY CEUOESSOP		CEY OES SOCE O O EA R O O O A O U E I A K E U O E V O P A C E E
UOUROVWP		UOEB FK UOZO PDE OUBP OAVIT OOU T SV E O U I F C E UOK G
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