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[Vishay Semiconductor/Diodes Division](#)  
[UF4001-M3/73](#)

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**UF4001-M3, UF4002-M3, UF4003-M3, UF4004-M3, UF4005-M3, UF4006-M3, UF4007-M3**

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Vishay General Semiconductor



**DO-204AL (DO-41)**

## FEATURES

- Glass passivated chip junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



## TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, and telecommunication.

## MECHANICAL DATA

**Case:** DO-204AL (DO-41)

Molding compound meets UL 94 V-0 flammability rating  
 Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102  
 M3 suffix meets JESD 201 class 1A whisker test

**Polarity:** Color band denotes cathode end

<b>PRIMARY CHARACTERISTICS</b>	
$I_{F(AV)}$	1.0 A
$V_{RRM}$	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V
$I_{FSM}$	30 A
$t_{rr}$	50 ns, 75 ns
$V_F$	1.0 V, 1.7 V
$T_J$ max.	150 °C
Package	DO-204AL (DO-41)
Diode variations	Single die

<b>MAXIMUM RATINGS</b> ( $T_A = 25$ °C unless otherwise noted)									
PARAMETER	SYMBOL	UF4001	UF4002	UF4003	UF4004	UF4005	UF4006	UF4007	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55$ °C	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	30							A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 150							°C



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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)											
PARAMETER	TEST CONDITIONS		SYMBOL	UF4001	UF4002	UF4003	UF4004	UF4005	UF4006	UF4007	UNIT
Maximum instantaneous forward voltage	1.0 A		$V_F$ <sup>(1)</sup>	1.0			1.7			V	
Maximum DC reverse current at rated DC blocking voltage		$T_A = 25^\circ\text{C}$	$I_R$	10			50			$\mu\text{A}$	
		$T_A = 100^\circ\text{C}$		50			75				
Maximum reverse recovery time	$I_F = 0.5 \text{ A}$ , $I_R = 1.0 \text{ A}$ , $I_{rr} = 0.25 \text{ A}$		$t_{rr}$	50			75			ns	
Typical junction capacitance	4.0 V, 1 MHz		$C_J$	17			17			$\text{pF}$	

**Note**

<sup>(1)</sup> Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	UF4001	UF4002	UF4003	UF4004	UF4005	UF4006	UF4007	UNIT
Typical thermal resistance		$R_{0JA}$ <sup>(1)</sup>		60			$R_{0JL}$ <sup>(1)</sup>		
				15					

**Note**

<sup>(1)</sup> Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
UF4007-M3/54	0.33	54	5500	13" diameter paper tape and reel
UF4007-M3/73	0.34	73	3000	Ammo pack packaging

**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

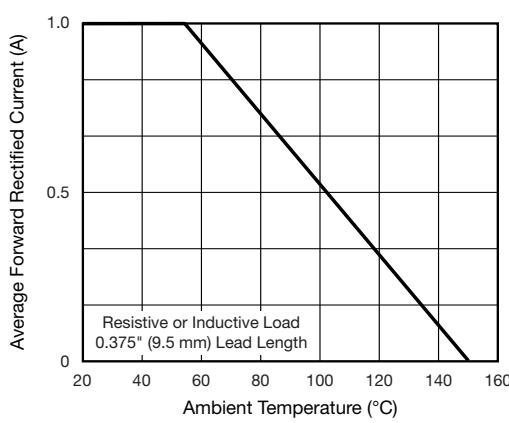


Fig. 1 - Maximum Forward Current Derating Curve

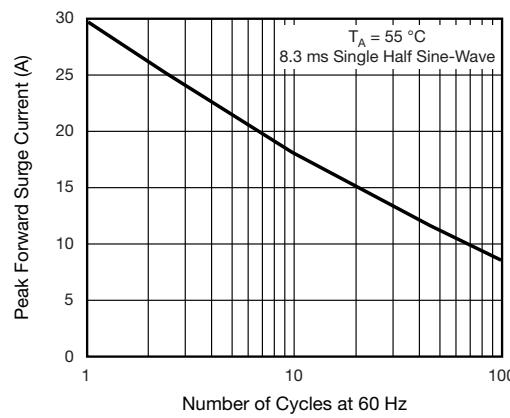


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



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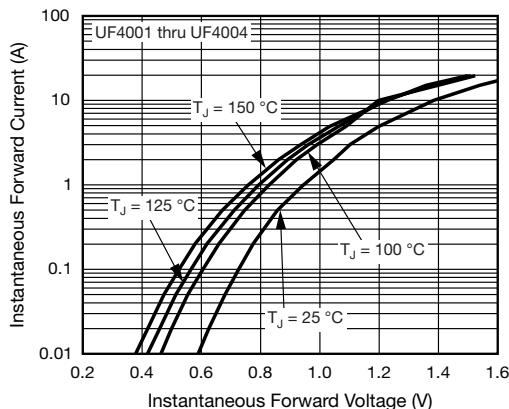


Fig. 3 - Typical Instantaneous Forward Characteristics

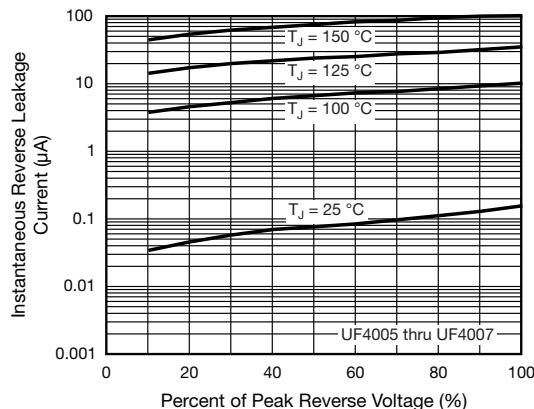


Fig. 6 - Typical Reverse Leakage Characteristics

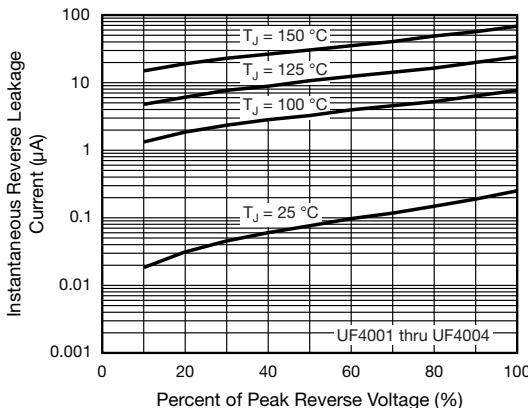


Fig. 4 - Typical Reverse Leakage Characteristics

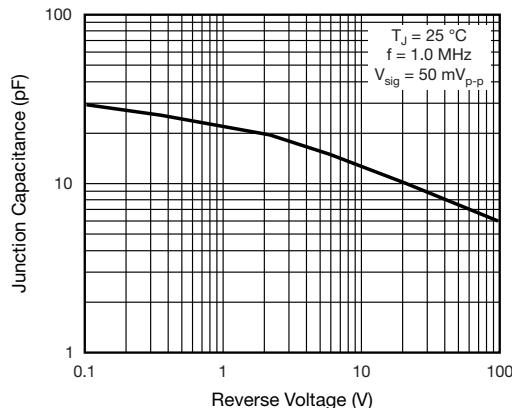


Fig. 7 - Typical Junction Capacitance

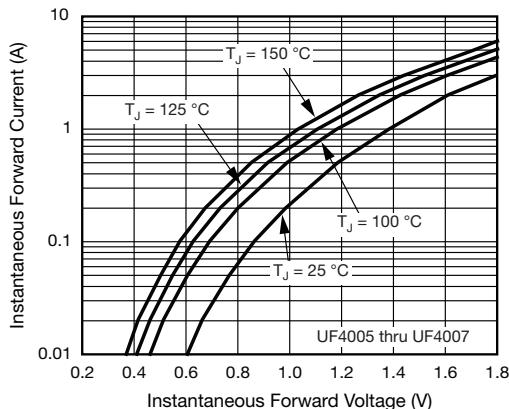


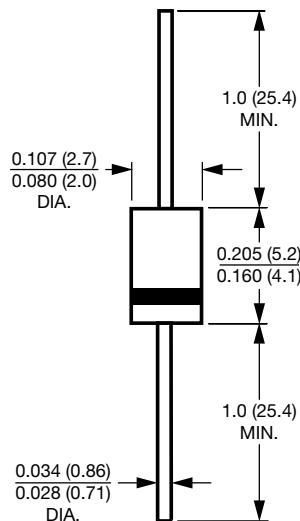
Fig. 5 - Typical Instantaneous Forward Characteristics

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**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

DO-204AL (DO-41)



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