

UF4001, UF4002, UF4003, UF4004, UF4005, UF4006, UF4007

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Vishay General Semiconductor

COMPLIANT

HALOGEN FREE

Ultrafast Plastic Rectifier



PRIMARY CHARACTERISTICS							
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-41 (DO-204AL)						
Circuit configuration	Single						

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

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-41 (DO-204AL)

Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade

Terminals: matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

E3 and M3 suffix meets JESD 201 class 1A whisker test

Polarity: color band denotes cathode end

MAXIMUM RATINGS (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					Α		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	м 30					Α		
Operating junction and storage temperature range	T _J , T _{STG}	, T _{STG} -55 to +150					°C		

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ELECTRICAL CHARACTERISTICS (T _A = 25 °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 ⁽¹⁾	1.0 1.7					V		
Maximum DC reverse current at rated DC		T _A = 25 °C	I_	10							
blocking voltage		T _A = 100 °C	IR	50							μA
Maximum reverse recovery time	I _F = 0. I _{rr} = 0.	5 A, I _R = 1.0 A, 25 A	t _{rr}	50 75					ns		
Typical junction capacitance	4.0 V,	1 MHz	CJ	17					pF		

Note

⁽¹⁾ Pulse test: 300 µs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER SYMBOL UF4001 UF4002 UF4003 UF4004 UF4005 UF4006 UF4007 UN							UNIT		
Typical thermal resistance	R _{0JA} (1)	60							°C/W
Typical thermal resistance	R _{0JL} (1)	15						G/ VV	

Note

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

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE					
UF4007-E3/54	0.33	54	5500	13" diameter paper tape and reel					
UF4007-E3/73	0.34	73	3000	Ammo pack packaging					
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 °C unless otherwise noted)

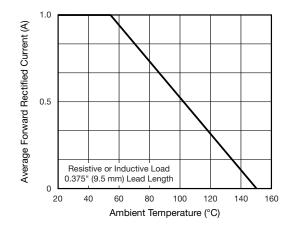


Fig. 1 - Maximum Forward Current Derating Curve

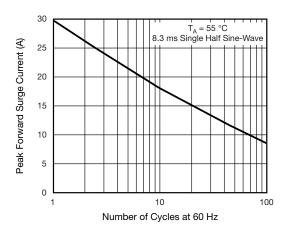


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

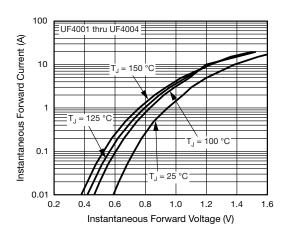


Fig. 3 - Typical Instantaneous Forward Characteristics

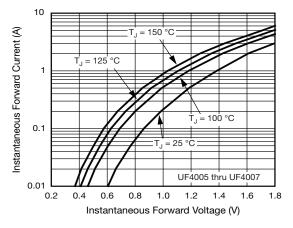


Fig. 4 - Typical Instantaneous Forward Characteristics

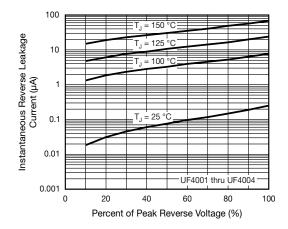


Fig. 5 - Typical Reverse Leakage Characteristics

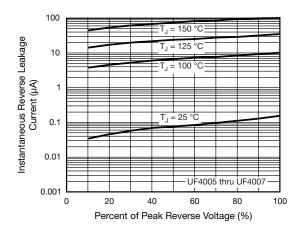


Fig. 6 - Typical Reverse Leakage Characteristics

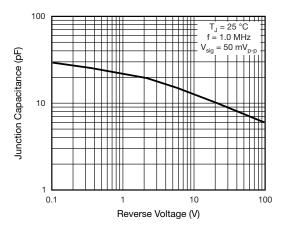


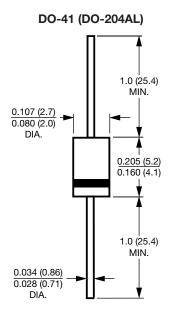
Fig. 7 - Typical Junction Capacitance

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)







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