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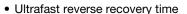
Ultrafast Plastic Rectifier

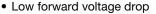


PRIMARY CHARACTERISTICS							
I _{F(AV)}	1.0 A						
V_{RRM}	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V						
I _{FSM}	30 A						
t _{rr}	50 ns, 75 ns						
V_{F}	1.0 V, 1.7 V						
T _J max.	150 °C						
Package	DO-204AL (DO-41)						
Diode variations	Single die						

FEATURES







· 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 <u>www.vishay.com/doc?99912</u>

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-E3 - RoHS-compliant, commercial grade

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

E3 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 50 100 200 400 600 800 1000 ٧ V_{RRM} reverse voltage Maximum RMS voltage 35 70 140 280 420 560 700 ٧ V_{RMS} Maximum DC blocking voltage $V_{\text{DC}} \\$ 50 100 200 400 600 800 1000 ٧ Maximum average forward rectified current 1.0 Α I_{F(AV)} 0.375" (9.5 mm) lead length at $T_A = 55$ °C Peak forward surge current 8.3 ms single half 30 Α I_{FSM} sine-wave superimposed on rated load °C - 55 to + 150 Operating junction and storage temperature range T_J , T_{STG}

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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	1.0 A V _F ⁽¹⁾			1.0			1.7			V
Maximum DC reverse current at rated DC		T _A = 25 °C	1_	10						μА	
blocking voltage		T _A = 100 °C	I _R	50							
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	
Typical junction capacitance	4.0 V, 1 MHz C _J			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				UNIT				
Typical thermal resistance	R _{0JA} (1)	60							°C/W
Typical trieffial resistance	R _{0JL} (1)	15						•	C/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				

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

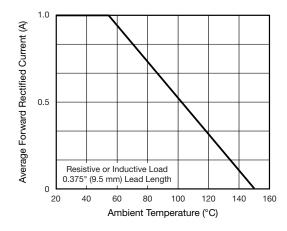


Fig. 1 - Maximum Forward Current Derating Curve

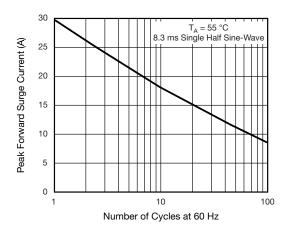


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



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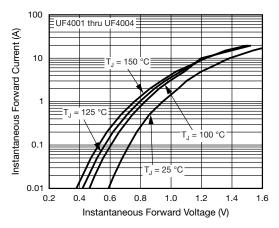


Fig. 3 - Typical Instantaneous Forward Characteristics

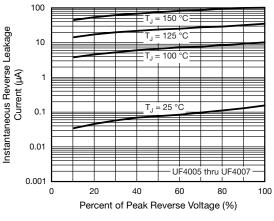


Fig. 6 - Typical Reverse Leakage Characteristics

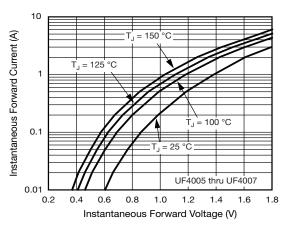


Fig. 4 - Typical Reverse Leakage Characteristics

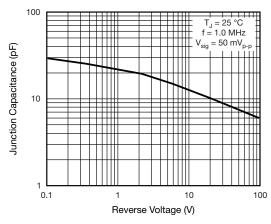


Fig. 7 - Typical Junction Capacitance

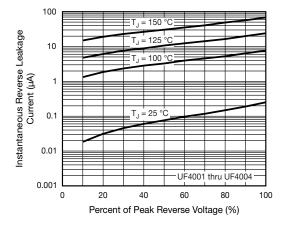


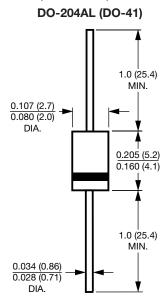
Fig. 5 - Typical Instantaneous Forward Characteristics



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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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