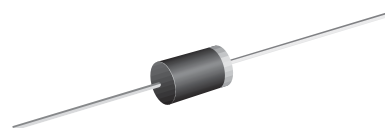


Ultrafast Plastic Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	1.0 A
V_{RRM}	50 V to 1000 V
I_{FSM}	30 A
t_{rr}	50 ns, 75 ns
V_F	1.0 V, 1.7 V
$T_j \text{ max.}$	150 °C



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 260 °C, 40 seconds



Mechanical Data

Case: DO-204AL (DO-41)

Epoxy meets UL-94V-0 Flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade

Polarity: Color band denotes cathode end

Typical Applications

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

Maximum Ratings

$T_A = 25\text{ °C}$ unless otherwise specified

Parameter	Symbols	UF 4001	UF 4002	UF 4003	UF 4004	UF 4005	UF 4006	UF 4007	Units
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 $T_A = 55\text{ °C}$	$I_{F(AV)}$	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

UF4001 thru UF4007

Vishay Semiconductors



Electrical Characteristics

$T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise specified

Parameter	Test condition	Symbols	UF 4001	UF 4002	UF 4003	UF 4004	UF 4005	UF 4006	UF 4007	Units
Maximum instantaneous forward voltage	at 1.0 A ⁽¹⁾	V_F	1.0				1.7			V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^{\circ}\text{C}$ $T_A = 100\text{ }^{\circ}\text{C}$	I_R	10 50							μA
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	at 4.0 V, 1 MHz	C_J	17							pF

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

Thermal Characteristics

$T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbols	UF 4001	UF 4002	UF 4003	UF 4004	UF 4005	UF 4006	UF 4007	Units
Typical thermal resistance ⁽¹⁾	R _{θJA}	60							°C/W
	R _{θJL}	15							

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

Ratings and Characteristics Curves

($T_A = 25^\circ\text{C}$ unless otherwise noted)

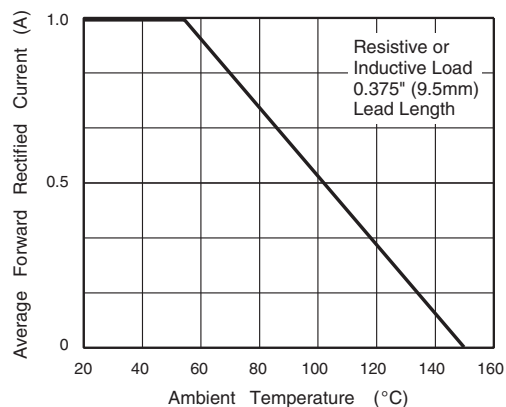


Figure 1. Maximum Forward Current Derating Curve

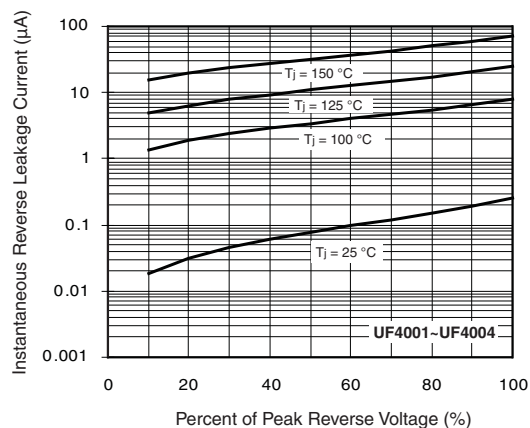


Figure 4. Typical Reverse Leakage Characteristics

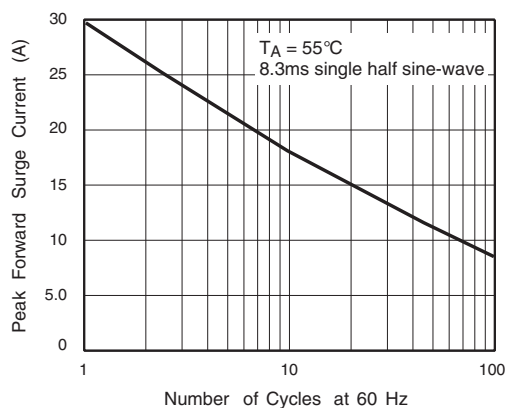


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

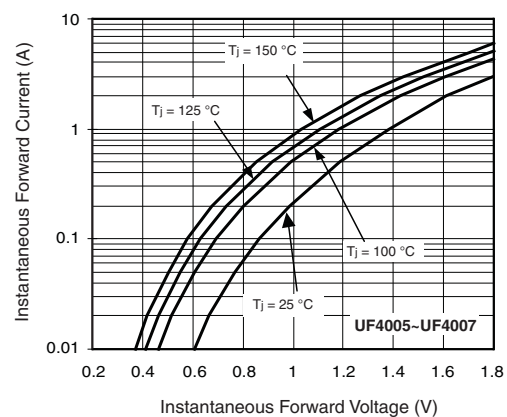


Figure 5. Typical Instantaneous Forward Characteristics

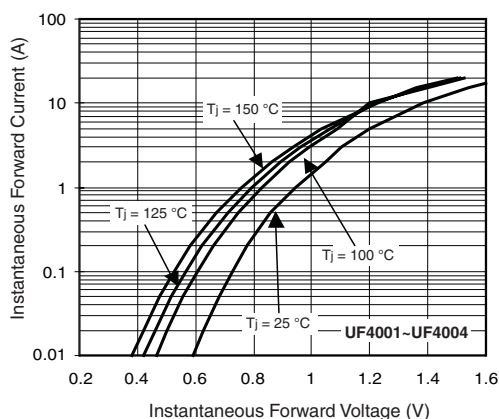


Figure 3. Typical Instantaneous Forward Characteristics

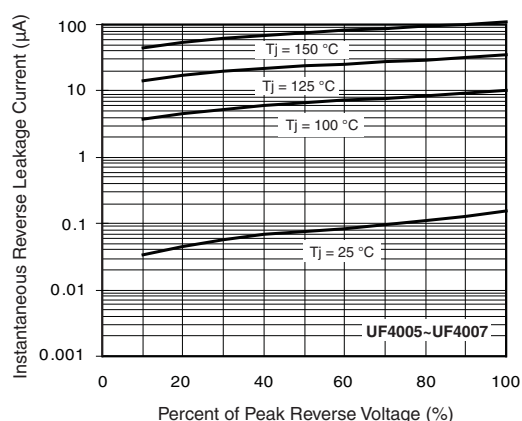


Figure 6. Typical Reverse Leakage Characteristics

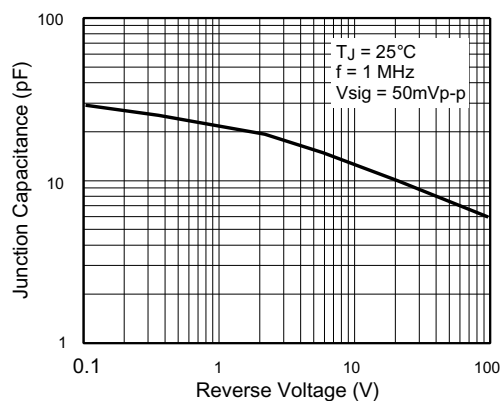


Figure 7. Typical Junction Capacitance

Package outline dimensions in inches (millimeters)

