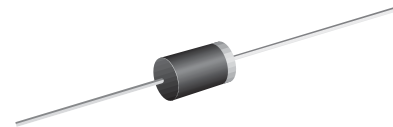




## Ultrafast Plastic Rectifier

### 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 General Semiconductor

## 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 <sup>(1)</sup>	$V_F$	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			$\mu\text{A}$
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  $\mu\text{s}$  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 <sup>(1)</sup>	$R_{\theta JA}$	60							$^\circ\text{C/W}$
	$R_{\theta JL}$	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)

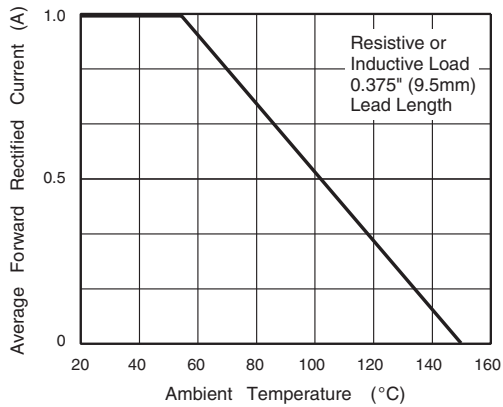


Figure 1. Maximum Forward Current Derating Curve

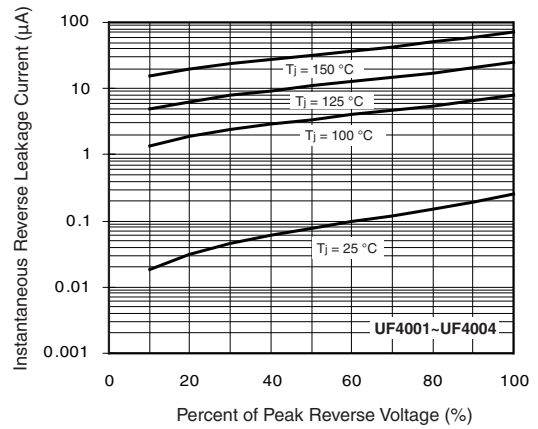


Figure 4. Typical Reverse Leakage Characteristics

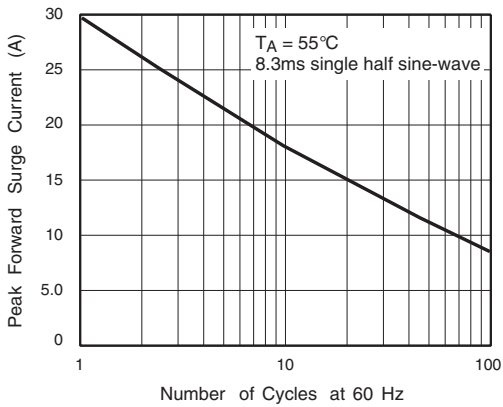


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

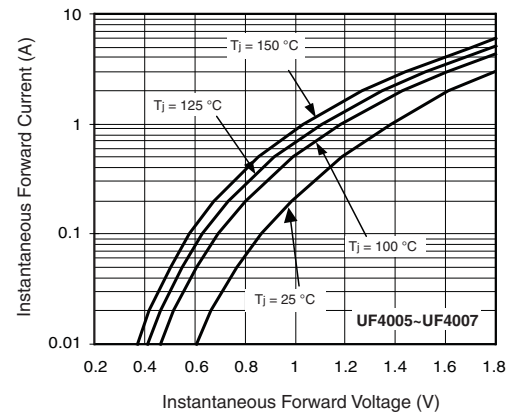


Figure 5. Typical Instantaneous Forward Characteristics

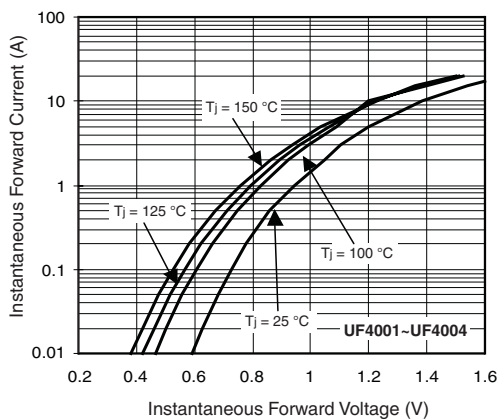


Figure 3. Typical Instantaneous Forward Characteristics

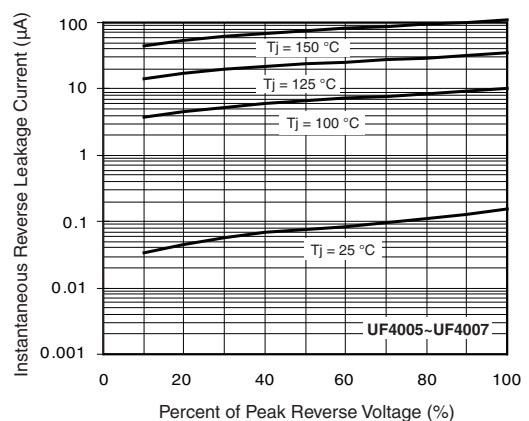


Figure 6. Typical Reverse Leakage Characteristics

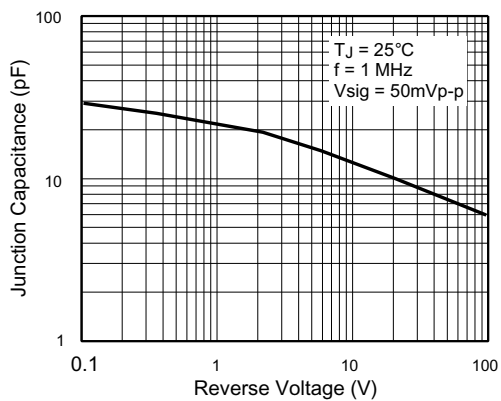
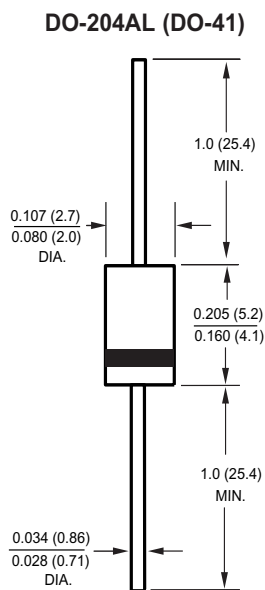


Figure 7. Typical Junction Capacitance

## Package outline dimensions in inches (millimeters)





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