

## Soft Recovery Ultrafast Plastic Rectifier


**DO-201AD**

### 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)


**RoHS**  
COMPLIANT

### 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-201AD

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.0 A
$V_{RRM}$	50 V, 100 V, 200 V, 300 V, 400 V, 500 V, 600 V, 800 V, 1000 V
$I_{FSM}$	150 A
$t_{rr}$	50 ns, 75 ns
$V_F$	1.0 V, 1.7 V
$T_J$ max.	150 °C
Package	DO-201AD
Diode variations	Single die

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)											
PARAMETER	SYMBOL	UF5400	UF5401	UF5402	UF5403	UF5404	UF5405	UF5406	UF5407	UF5408	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	300	400	500	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	210	280	350	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	300	400	500	600	800	1000	V
Maximum average forward rectified current, 0.375" (9.5 mm) lead length at $T_A = 55$ °C	$I_{F(AV)}$	3.0									A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	150									A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 150									°C

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)													
PARAMETER	TEST CONDITIONS		SYMBOL	UF5400	UF5401	UF5402	UF5403	UF5404	UF5405	UF5406	UF5407	UF5408	UNIT
Maximum instantaneous forward voltage	3.0 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								$\mu\text{A}$	
		$T_A = 100^\circ\text{C}$		75				200					
Maximum reverse recovery time	$I_F = 0.5 \text{ A}$ , $I_R = 1.0 \text{ A}$ , $I_{rr} = 0.25 \text{ A}$	$T_J = 25^\circ\text{C}$	$t_{rr}$	50				75				ns	
Typical junction capacitance	4.0 V, 1 MHz		$C_J$	45				36				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	UF5400	UF5401	UF5402	UF5403	UF5404	UF5405	UF5406	UF5407	UF5408	UNIT	
Typical thermal resistance	$R_{\theta JA}$ <sup>(1)</sup>	20								$^\circ\text{C}/\text{W}$		
	$R_{\theta JL}$ <sup>(1)</sup>	8.5										

**Note**

<sup>(1)</sup> Thermal resistance from junction to lead and from junction to ambient with 0.375" (9.5 mm) lead length, both leads attached to heatsink

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
UF5406-E3/54	1.172	54	1400	13" diameter paper tape and reel
UF5406-E3/73	1.172	73	1000	Ammo pack packaging

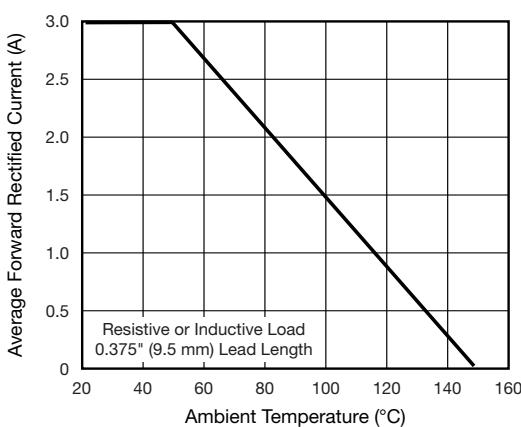
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

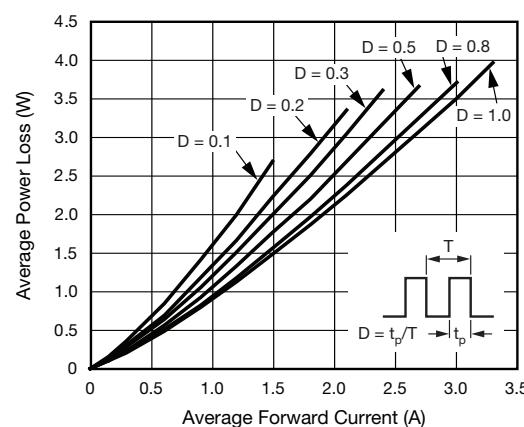


Fig. 2 - Forward Power Loss Characteristics

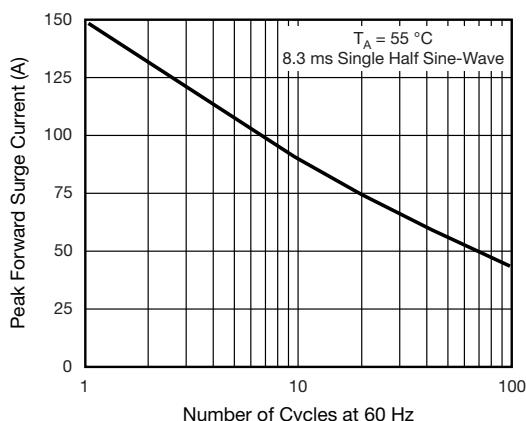


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

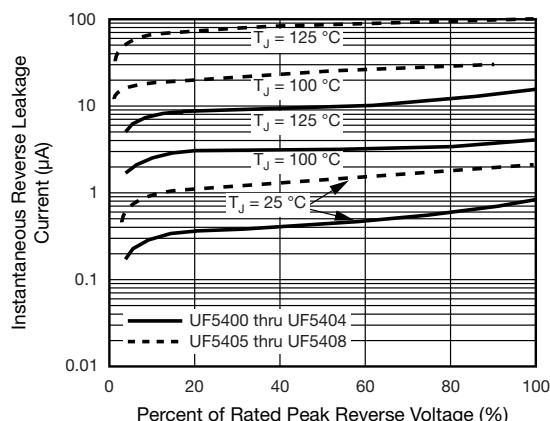


Fig. 5 - Typical Reverse Leakage Characteristics

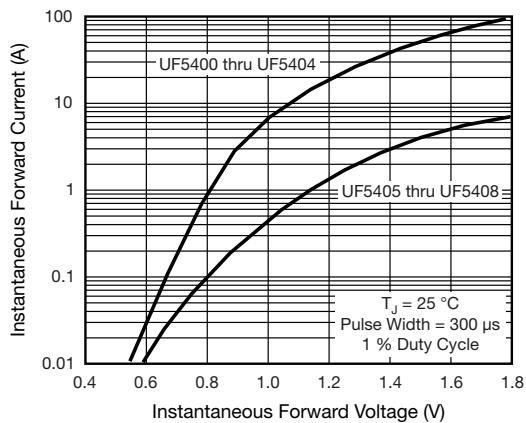


Fig. 4 - Typical Instantaneous Forward Characteristics

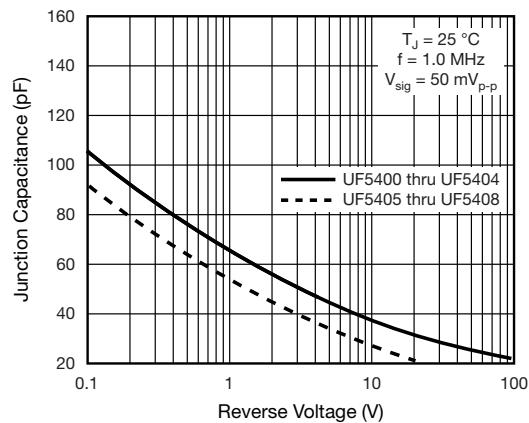
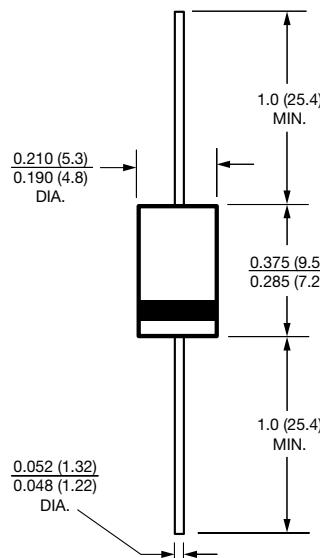


Fig. 6 - Typical Junction Capacitance

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

DO-201AD



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