



## Soft Recovery Ultrafast Plastic Rectifier



DO-201AD

### FEATURES

- Glass passivated pellet 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
$T_J \text{ max.}$	150 °C
Package	DO-201AD
Circuit configuration	Single

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ 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 $T_A = 55\text{ °C}$	$I_{F(AV)}$	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

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  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 <sub>F</sub> <sup>(1)</sup>	1.0					1.7				V
Maximum DC reverse current at rated DC blocking voltage		T <sub>A</sub> = 25 °C	I <sub>R</sub>	10									μA
		T <sub>A</sub> = 100 °C		75				200					
Maximum reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A	T <sub>J</sub> = 25 °C	t <sub>rr</sub>	50					75				ns
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>	45					36				pF

**Note**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

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

PARAMETER	SYMBOL	UF5400	UF5401	UF5402	UF5403	UF5404	UF5405	UF5406	UF5407	UF5408	UNIT
Typical thermal resistance	$R\theta_{JA}^{(1)}$	20									°C/W
	$R\theta_{JL}^{(1)}$	8.5									

**Note**

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

**ORDERING INFORMATION** (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

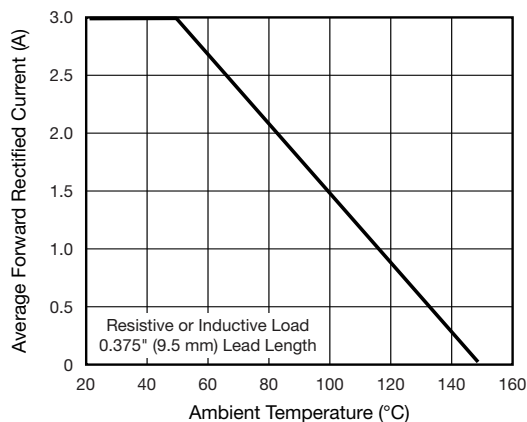
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Maximum Forward Current Derating Curve

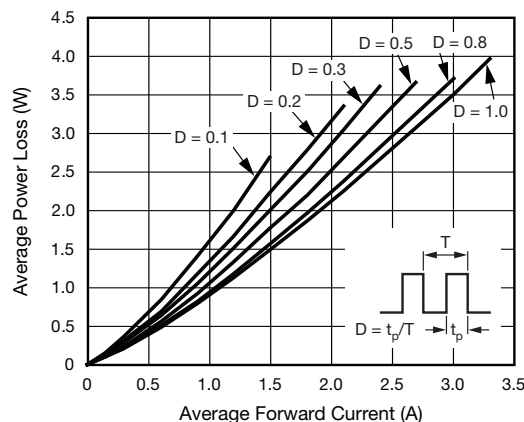


Fig. 2 - Forward Power Loss Characteristics

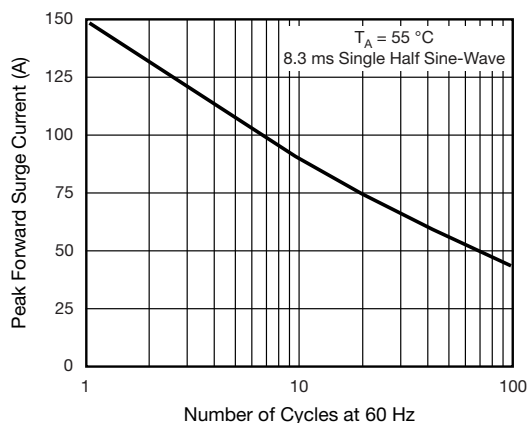


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

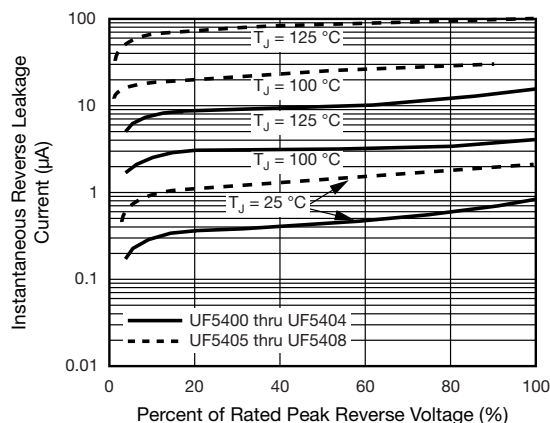


Fig. 5 - Typical Reverse Leakage Characteristics

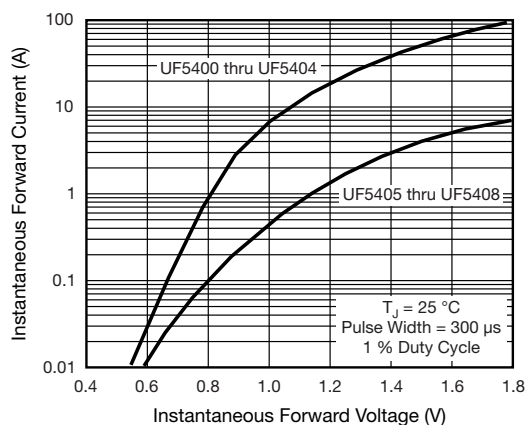


Fig. 4 - Typical Instantaneous Forward Characteristics

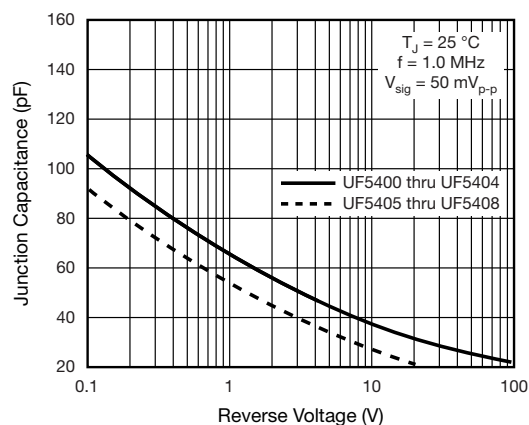
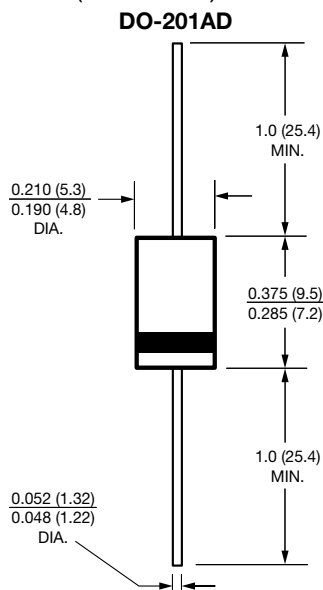


Fig. 6 - Typical Junction Capacitance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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