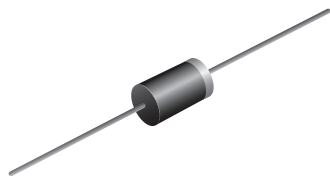


# Ultrafast Plastic Rectifier



DO-201AD

## FEATURES

- Glass passivated pellet chip junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low leakage current
- 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  
HALOGEN  
**FREE**  
Available

## 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  
Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 and M3 suffix meets JESD 201 class 1A whisker test

**Polarity:** color band denotes cathode end

## PRIMARY CHARACTERISTICS

$I_{F(AV)}$	4.0 A
$V_{RRM}$	200 V
$I_{FSM}$	150 A
$t_{rr}$	25 ns
$V_F$	0.710 V
$T_J$ max.	175 °C
Package	DO-201AD
Circuit configuration	Single

## MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	200	V
Working peak reverse voltage	$V_{RWM}$	200	
Maximum DC blocking voltage	$V_{DC}$	200	
Maximum average forward rectified current at $T_A = 80$ °C (fig. 1)	$I_{F(AV)}$	4.0	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	150	
Operating junction and storage temperature range	$T_J, T_{STG}$	-65 to +175	°C

## ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted)

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	VALUE	UNIT
Maximum instantaneous forward voltage	3.0 A	T <sub>J</sub> = 150 °C	V <sub>F</sub> <sup>(1)</sup>	0.710	V
		T <sub>J</sub> = 25 °C		0.875	
	4.0 A			0.890	
Maximum instantaneous reverse current at rated DC blocking voltage		T <sub>J</sub> = 25 °C	I <sub>R</sub> <sup>(1)</sup>	5.0	µA
		T <sub>J</sub> = 150 °C		150	
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>rr</sub>	25	ns
	I <sub>F</sub> = 1.0 A, dI/dt = 50 A/µs, V <sub>R</sub> = 30 V, I <sub>rr</sub> = 10 % I <sub>RM</sub>			35	
Maximum forward recovery time	I <sub>F</sub> = 1.0 A, dI/dt = 100 A/µs, recovery to 1.0 V		t <sub>fr</sub>	25	

### Note

(1) Pulse test:  $t_p = 300$  µs pulse, duty cycle  $\leq 2$  %

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

PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance junction to ambient	$R_{\theta JA}^{(1)}$	28	$^{\circ}\text{C/W}$

**Note**

(1) Lead length = 1/2" on PCB with 1.2" x 1.2" (30.5 mm x 30.5 mm) copper surface

**ORDERING INFORMATION** (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
MUR420-E3/54	1.138	54	1400	13" diameter paper tape and reel
MUR420-E3/73	1.138	73	1000	Ammo pack packaging
MUR420-M3/54	1.138	54	1400	13" diameter paper tape and reel
MUR420-M3/73	1.138	73	1000	Ammo pack packaging

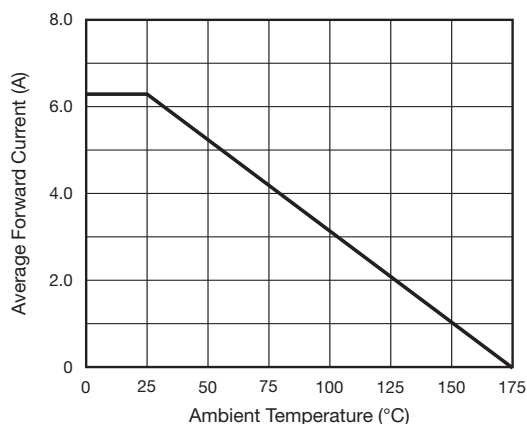
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

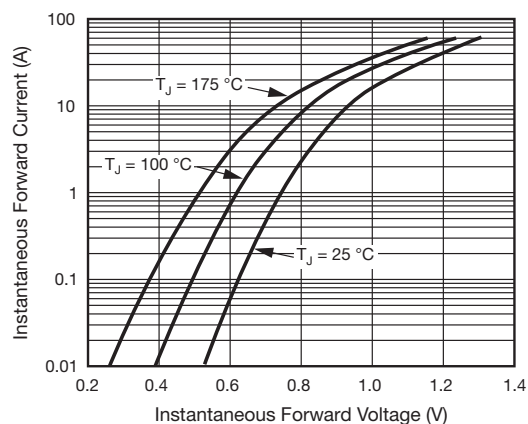


Fig. 3 - Typical Instantaneous Forward Characteristics

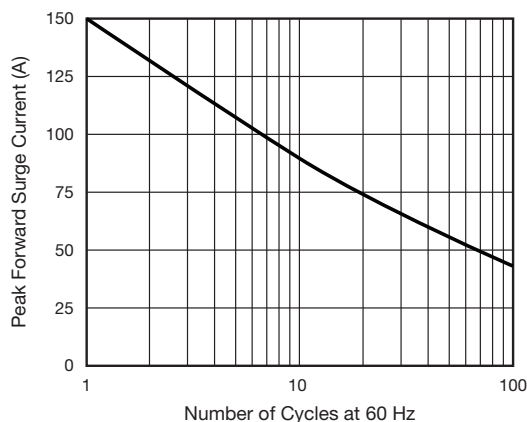


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

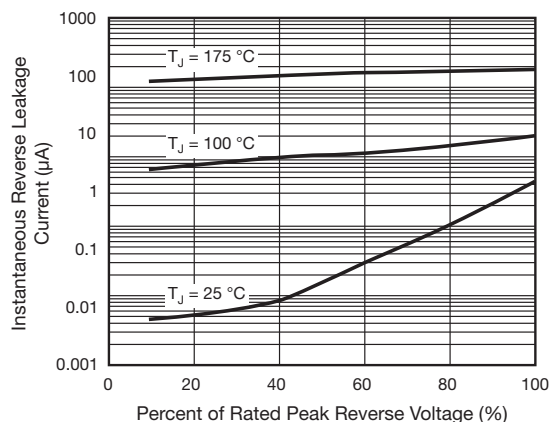


Fig. 4 - Typical Reverse Leakage Characteristics

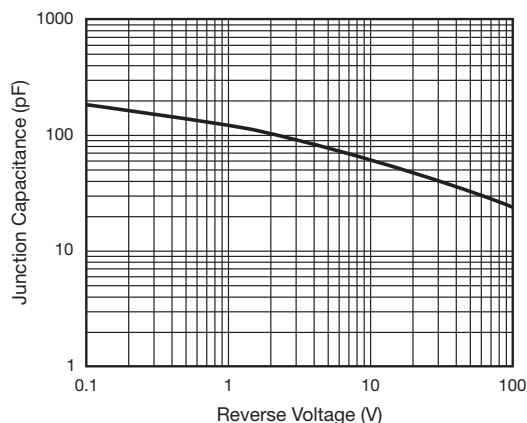
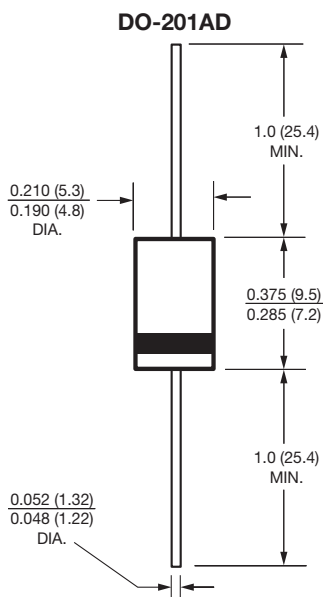


Fig. 5 - Typical Junction Capacitance

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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