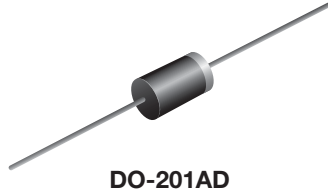


## Ultrafast Plastic Rectifier



### 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
$T_J \text{ max.}$	175 °C
Package	DO-201AD
Circuit configuration	Single

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ 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 $T_A = 80\text{ °C}$ (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 ( $T_A = 25\text{ °C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	VALUE	UNIT
Maximum instantaneous forward voltage	3.0 A	$T_J = 150\text{ °C}$	$V_F^{(1)}$	0.710	V
		$T_J = 25\text{ °C}$		0.875	
	4.0 A			0.890	
Maximum instantaneous reverse current at rated DC blocking voltage		$T_J = 25\text{ °C}$	$I_R^{(1)}$	5.0	$\mu\text{A}$
		$T_J = 150\text{ °C}$		150	
Maximum reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{rr} = 0.25\text{ A}$		$t_{rr}$	25	ns
	$I_F = 1.0\text{ A}, dI/dt = 50\text{ A}/\mu\text{s}, V_R = 30\text{ V}, I_{rr} = 10\% I_{RM}$			35	
Maximum forward recovery time	$I_F = 1.0\text{ A}, dI/dt = 100\text{ A}/\mu\text{s}, \text{recovery to } 1.0\text{ V}$		$t_{fr}$	25	

#### Note

(1) Pulse test:  $t_p = 300\text{ }\mu\text{s}$  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)**

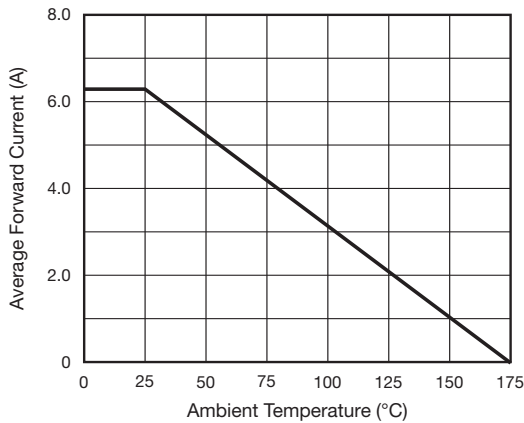


Fig. 1 - Forward Current Derating Curve

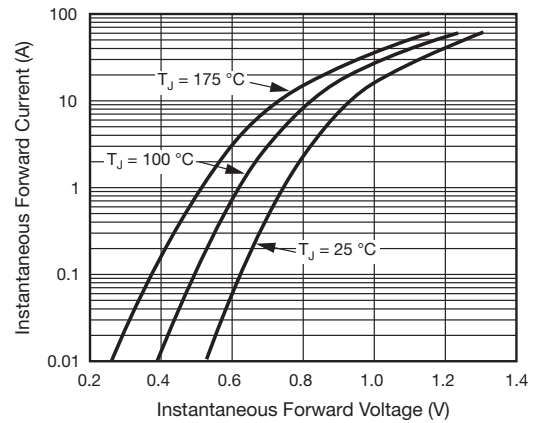


Fig. 3 - Typical Instantaneous Forward Characteristics

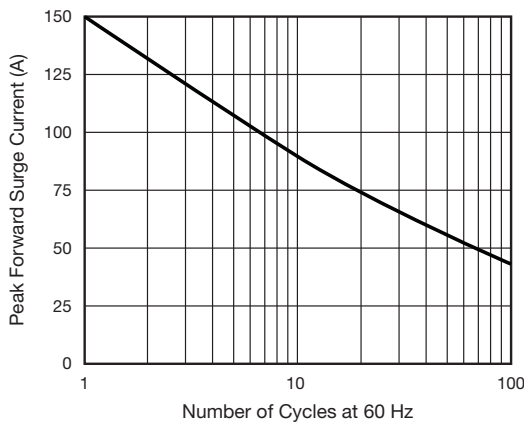


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

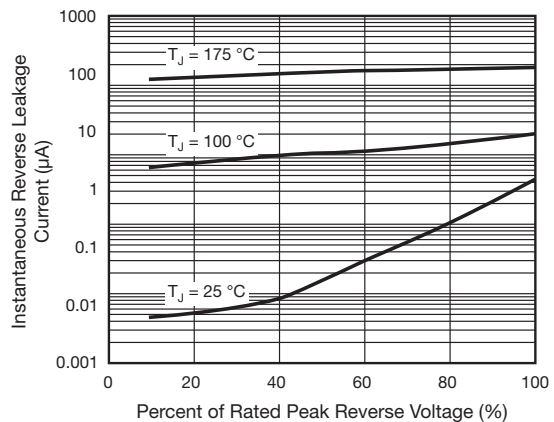


Fig. 4 - Typical Reverse Leakage Characteristics

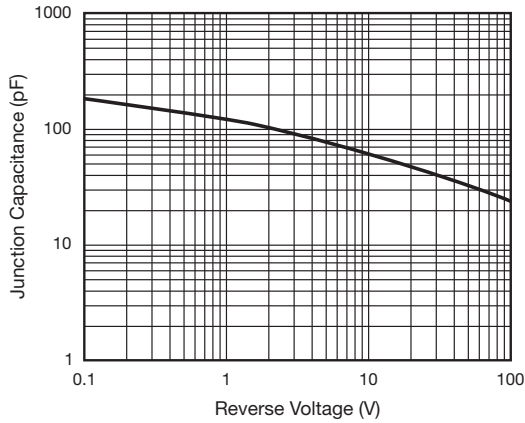
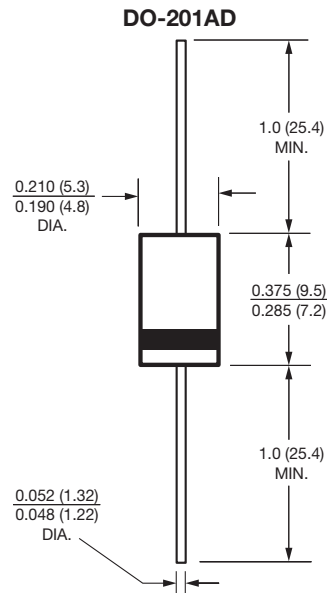


Fig. 5 - Typical Junction Capacitance

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





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