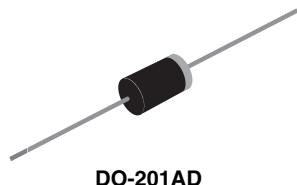


## Ultrafast Plastic Rectifier



### FEATURES

- Glass passivated chip junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low leakage current
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



**RoHS**  
COMPLIANT

### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	4.0 A
$V_{RRM}$	400 V and 600 V
$I_{FSM}$	125 A
$t_{rr}$	50 ns
$V_F$	1.05 V
$T_J \text{ max.}$	175 °C

### 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

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test

**Polarity:** Color band denotes cathode end

### MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	MUR440	MUR460	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	400	600	V
Working peak reverse voltage	$V_{RWM}$	400	600	V
Maximum DC blocking voltage	$V_{DC}$	400	600	V
Maximum average forward rectified current (Fig. 1)	$I_{F(AV)}$	4.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	125		A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175		C

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	MUR440	MUR460	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	3.0 A	T <sub>J</sub> = 150 °C	V <sub>F</sub>	1.05		V
	3.0 A	T <sub>J</sub> = 25 °C		1.25		
	4.0 A	T <sub>J</sub> = 25 °C		1.28		
Maximum instantaneous reverse current at rated DC blocking voltage <sup>(1)</sup>		T <sub>J</sub> = 25 °C T <sub>J</sub> = 150 °C	I <sub>R</sub>	10 250		μA
Max. reverse recovery time	I <sub>F</sub> = 0.5, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A		t <sub>rr</sub>	50		ns
Maximum reverse recovery time	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>		t <sub>rr</sub>	75		ns
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>	50		ns

**Note:**(1) Pulse test:  $t_p = 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$ 

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	MUR440	MUR460	UNIT
Typical thermal resistance junction to ambient <sup>(1)</sup>	$R_{\theta JA}$	28		$^{\circ}\text{C}/\text{W}$

**Note:**

(1) Lead length = 1/2" on P.C. board with 1.5" x 1.5" copper surface

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE	BASE QUANTITY	DELIVERY MODE
MUR460-E3/54	1.138	54	1400	13" diameter paper tape
MUR460-E3/73	1.138	73	1000	Ammo pack packaging

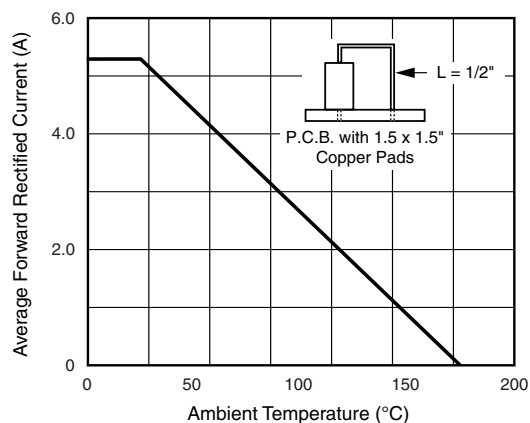
**RATINGS AND CHARACTERISTICS CURVES**( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Figure 1. Forward Current Derating Curve

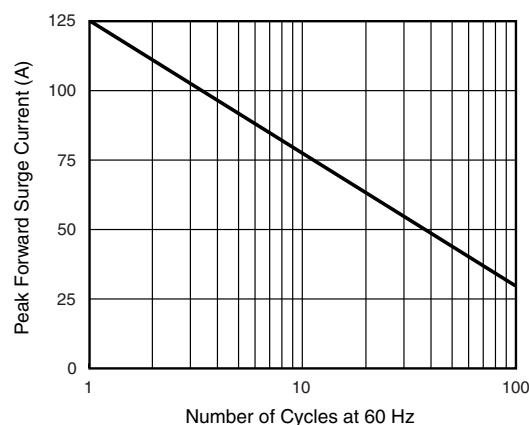


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

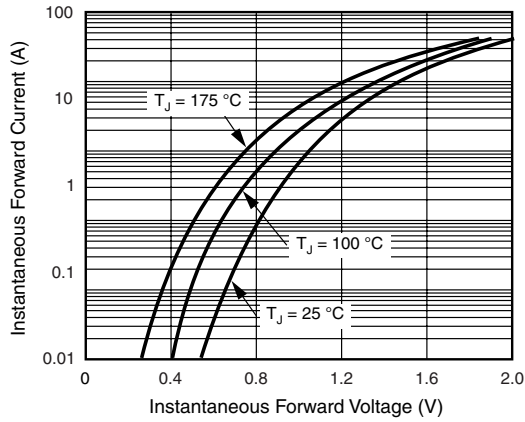


Figure 3. Typical Instantaneous Forward Characteristics

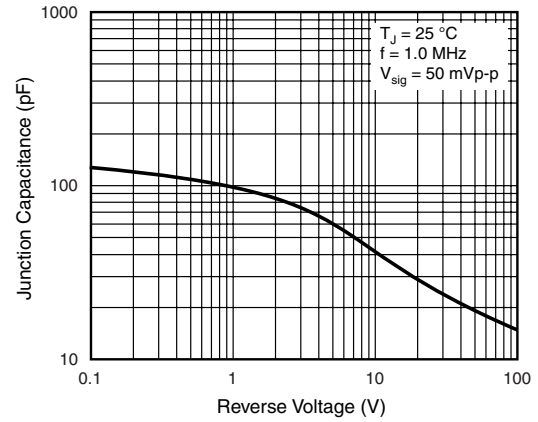


Figure 5. Typical Junction Capacitance per Leg

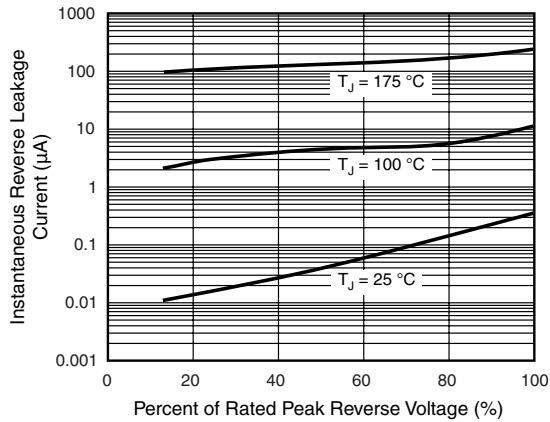
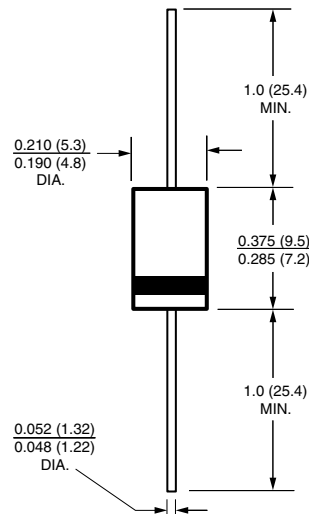


Figure 4. Typical Reverse Characteristics

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### DO-201AD





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