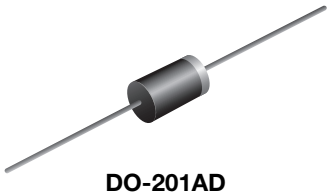
Ultrafast Plastic Rectifier



DO-201AD

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 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see 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	
$I_{F(AV)}$	4.0 A
V_{RRM}	400 V, 600 V
I_{FSM}	150 A
t_{rr}	50 ns
V_F at I_F	1.05 V
T_J max.	175 °C
Package	DO-201AD
Diode variations	Single die

MAXIMUM RATINGS (T_A = 25 °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}	150		A
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +175		°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**MUR440**	**MUR460**	**UNIT**
Maximum instantaneous forward voltage	3.0 A	T_J = 150 °C	V_F (1)	1.05		V
		T_J = 25 °C		1.25		
	4.0 A			1.28		
Maximum instantaneous reverse current at rated DC blocking voltage		T_J = 25 °C	I_R (1)	10		μA
		T_J = 150 °C		250		
Max. reverse recovery time	I_F = 0.5, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	50		ns
Maximum reverse recovery time	I_F = 1.0 A, dI/dt = 50 A/μs, V_R = 30 V, I_{rr} = 10 % I_{RM}		t_{rr}	75		ns
Maximum forward recovery time	I_F = 1.0 A, dI/dt = 100 A/μs, recovery to 1.0 V		t_{fr}	50		ns

Note

(1) Pulse test: t_p = 300 μs, duty cycle ≤ 2 %

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)				
PARAMETER	**SYMBOL**	**MUR440**	**MUR460**	**UNIT**
Typical thermal resistance junction to ambient	$R_{\theta JA}$ (1)	28		°C/W

Note

(1) Lead length = 1/2" on PCB with 1.5" x 1.5" copper surface

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

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

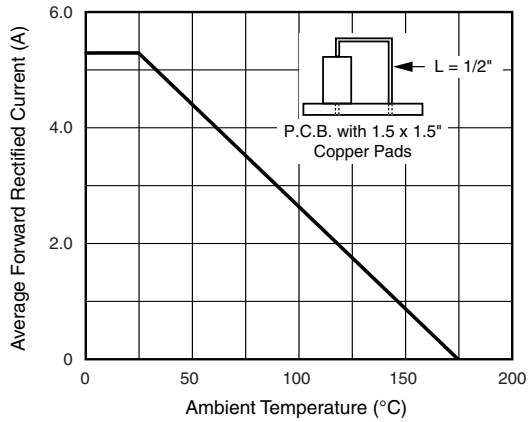


Fig. 1 - Forward Current Derating Curve

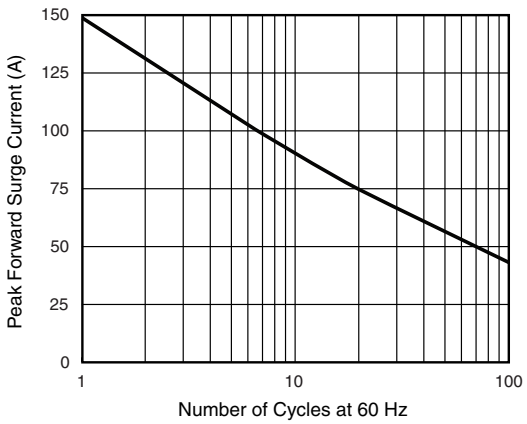


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

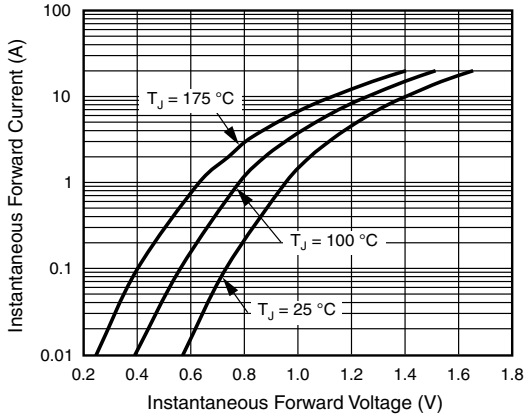


Fig. 3 - Typical Instantaneous Forward Characteristics

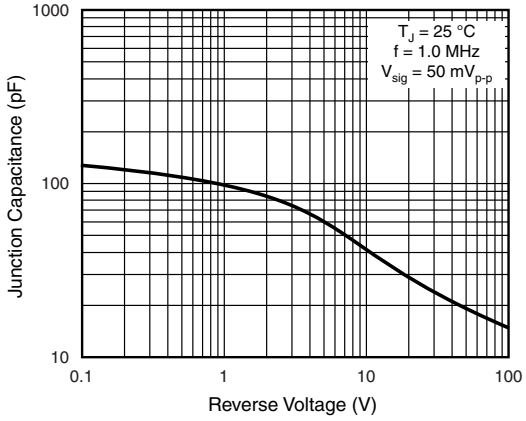


Fig. 5 - Typical Junction Capacitance per Leg

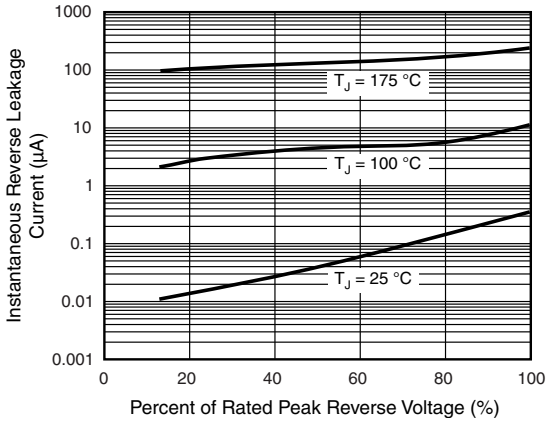
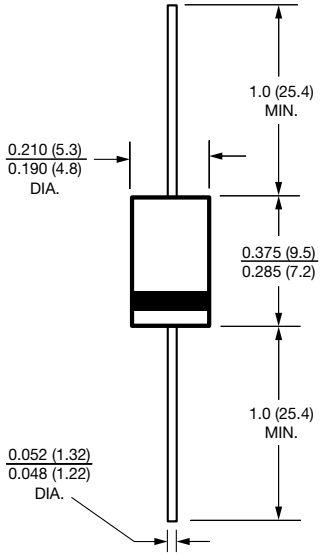


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD



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