

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



RoHS
COMPLIANT
HALOGEN
FREE

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-M3 - halogen-free, RoHS-compliant, and commercial grade

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

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

PARAMETER	SYMBOL	MUR440	MUR460	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 1.5" x 1.5" copper surface

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
MUR460-M3/54	1.138	54	1400	13" diameter paper tape and reel
MUR460-M3/73	1.138	73	1000	Ammo pack packaging

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

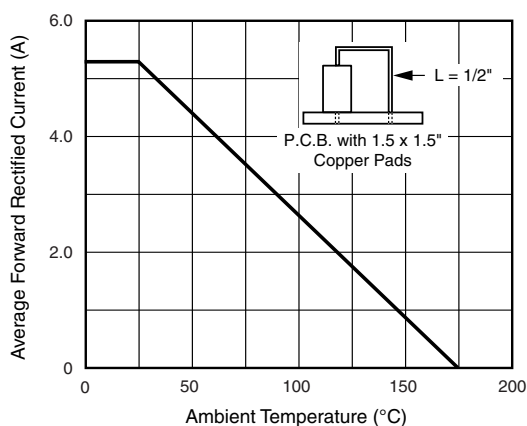


Fig. 1 - Forward Current Derating Curve

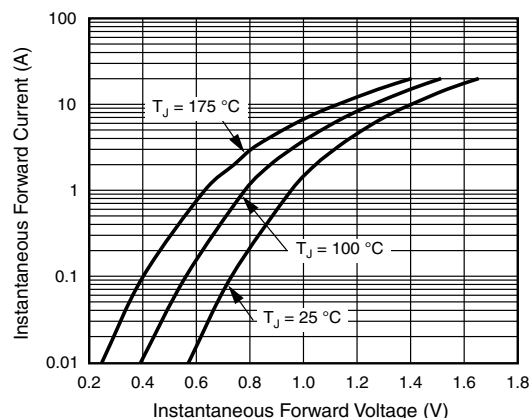


Fig. 3 - Typical Instantaneous Forward Characteristics

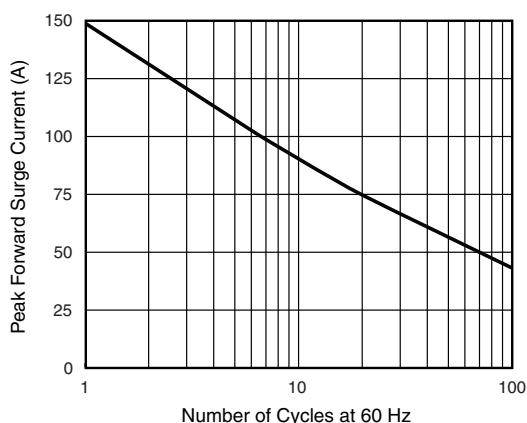


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

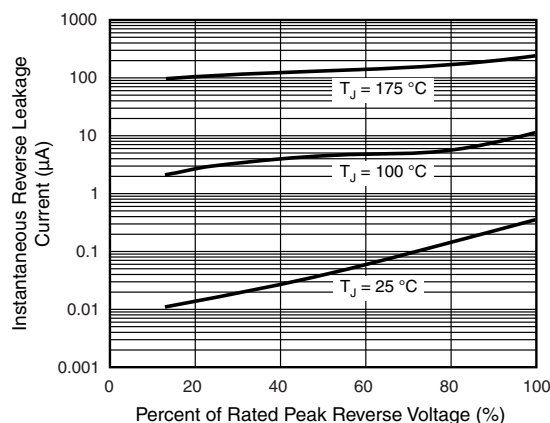


Fig. 4 - Typical Reverse Characteristics

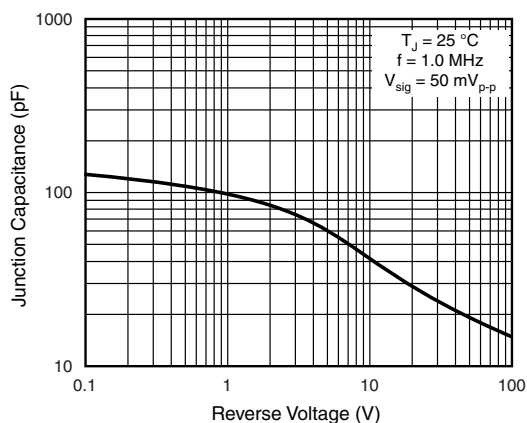
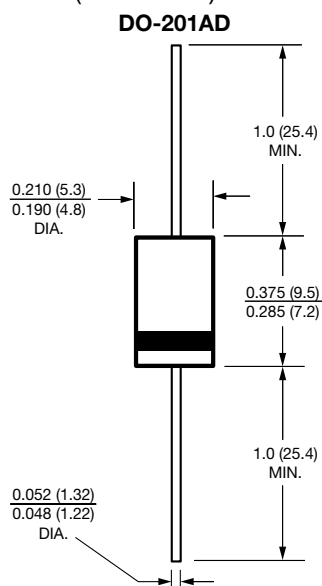


Fig. 5 - Typical Junction Capacitance Per Leg

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)




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