COMPLIANT

HALOGEN

FREE



Vishay General Semiconductor

Ultrafast Plastic Rectifier



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			
Circuit configuration	Single			

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.vishav.com/doc?99912

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, and commercial grade

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

J-31D-002 and JE3D 22-B102

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

Polarity: color band denotes cathode end

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	MUR440	MUR460	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	400	600	
Working peak reverse voltage	V_{RWM}	400	600	V
Maximum DC blocking voltage	V_{DC}	400	600	
Maximum average forward rectified current (fig. 1)	I _{F(AV)}	4.0		^
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	150		Α
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⁾	1.0	05		
				1.25		V	
	4.0 A	T _J = 25 °C		1.3	28		
Maximum instantaneous reverse current		T _J = 25 °C	I _R ⁽¹⁾	1	0		
at rated DC blocking voltage		T _J = 150 °C	'R \''	25	50	μΑ	
Max. reverse recovery time	I _F = 0.5, I _R = 1.0 A, I _{rr} = 0.25 A		t _{rr}	50			
Maximum reverse recovery time	$I_F = 1.0 \text{ A}, \text{ dI/dt} = 50 \text{ A/}\mu\text{s}, V_R = 30 \text{ V}, I_{rr} = 10 \% I_{RM}$		t _{rr}	7	5	ns	
Maximum forward recovery time	I _F = 1.0 A, dI/dt = 100 A/μs, recovery to 1.0 V		t _{fr}	5	0		

Note

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



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THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	MUR440	MUR460	UNIT		
Typical thermal resistance junction to ambient	R _{0JA} (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			
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 ($T_A = 25$ °C unless otherwise noted)

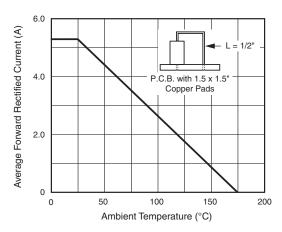


Fig. 1 - Forward Current Derating Curve

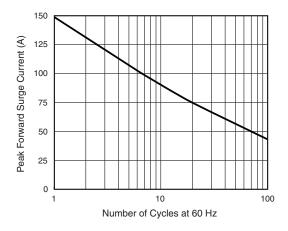


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

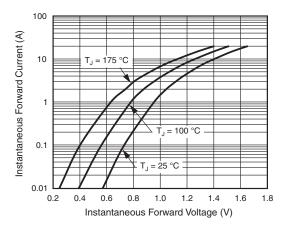


Fig. 3 - Typical Instantaneous Forward Characteristics

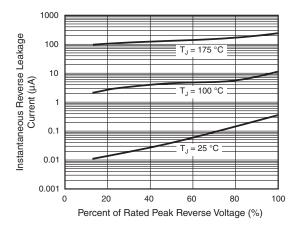


Fig. 4 - Typical Reverse Characteristics



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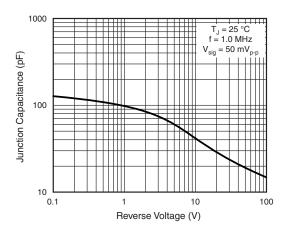
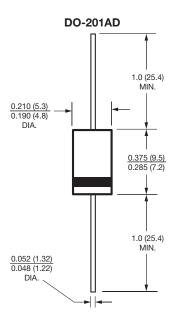


Fig. 5 - Typical Junction Capacitance per Leg

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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