MURS320

Vishay General Semiconductor

Surface Mount Ultrafast Plastic Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	3.0 A
V_{RRM}	200 V
I_{FSM}	125 A
t_{rr}	25 ns
V_F	0.71 V
T_j max.	175 °C

DO-214AB (SMC)

Features

- Glass passivated chip junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020C
- Solder Dip 260 °C, 40 seconds

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-214AB (SMC)

Epoxy meets UL 94V-0 Flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade

Polarity: Color band denotes cathode end

Maximum Ratings

T_A = 25 °C unless otherwise specified

Parameter	Symbol	MURS320	Unit
Device Marking Codes		MD	
Maximum repetitive peak reverse voltage	V_{RRM}	200	V
Working peak reverse voltage	V_{RWM}	200	V
Maximum DC blocking voltage	V_{DC}	200	V
Maximum average forward rectified current at: T_L = 140 °C (See figure 1) T_L = 130 °C	$I_{F(AV)}$	3.0 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_A = 25 °C unless otherwise specified#

Parameter	Test condition	Symbol	MURS320	Unit
Maximum instantaneous forward voltage (1)	at I_F = 3.0 A, T_J = 25 °C at I_F = 4.0 A, T_J = 25 °C at I_F = 3.0 A, T_J = 150 °C	V_F	0.875 0.890 0.710	V
Maximum instantaneous reverse current at rated DC blocking voltage (1)	T_J = 25 °C T_J = 150 °C	I_R	5.0 150	µA
Maximum reverse recovery time	at I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	t_{rr}	25	ns
Maximum reverse recovery time	at I_F = 1.0 A, di/dt = 50 A/µs, V_R = 30 V, I_{rr} = 10 % I_{RM}	t_{rr}	35	ns
Maximum forward recovery time	I_F = 1.0 A, di/dt = 100 A/µs, Rec. to 1.0 V	t_{fr}	25	ns

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

Thermal Characteristics

T_A = 25 °C unless otherwise specified

Parameter	Symbol	MURS320	Unit
Typical thermal resistance junction to ambient	$R_{\theta JL}$	11	°C/W

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise noted)

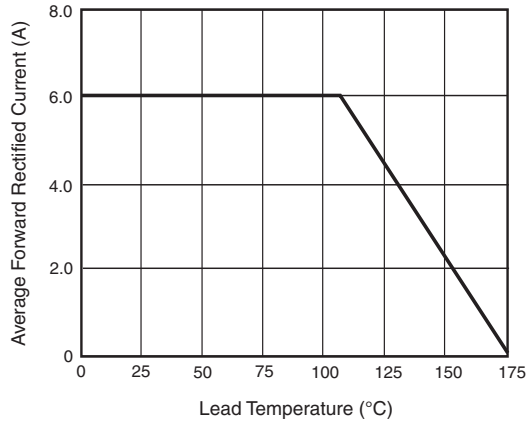


Figure 1. Forward Current Derating Curve

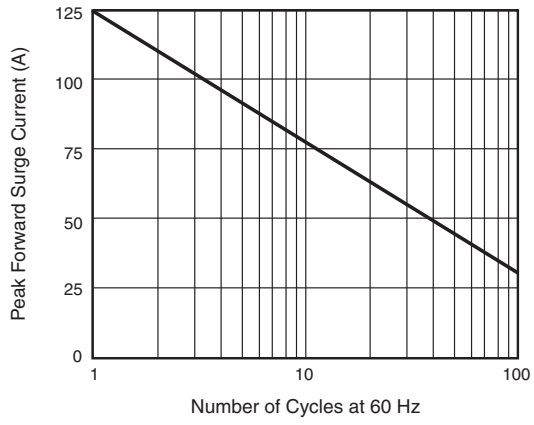


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

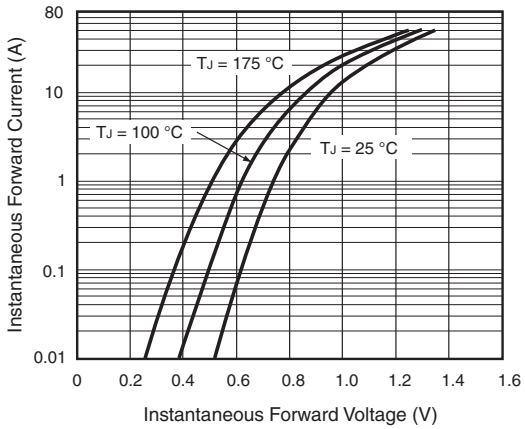


Figure 3. Typical Forward Voltage

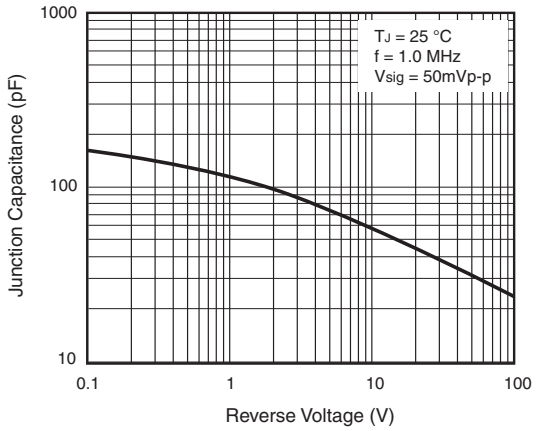


Figure 5. Typical Junction Capacitance

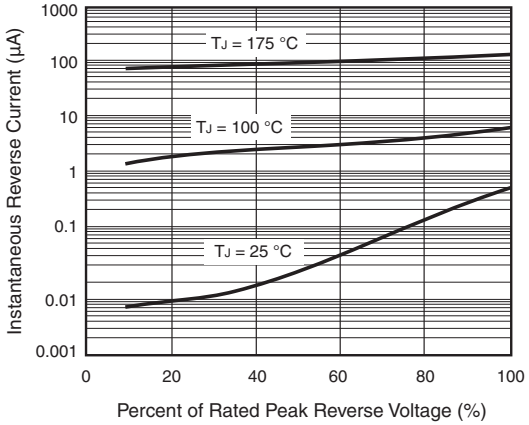
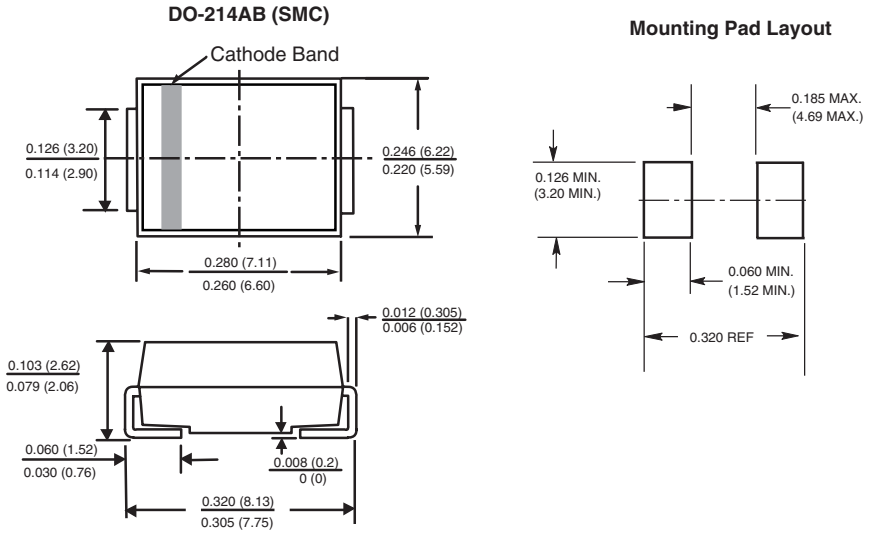


Figure 4. Typical Reverse Leakage Characteristics

Package outline dimensions in inches (millimeters)



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