

Surface-Mount Ultrafast Plastic Rectifier


SMC (DO-214AB)

 Cathode  Anode

LINKS TO ADDITIONAL RESOURCES


[3D Models](#)

PRIMARY 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
Package	SMC (DO-214AB)
Circuit configuration	Single

FEATURES

- Glass passivated pellet 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-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

 AUTOMOTIVE
GRADE
Available

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: SMC (DO-214AB)

Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade Base P/NHE3_X - RoHS-compliant and AEC-Q101 qualified (“_X” denotes revision code e.g. A, B,)

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

E3 suffix meets JESD 201 class 2 whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: color band denotes cathode end

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	MURS320	UNIT
Device marking code		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: (fig. 1)		$T_L = 140\text{ °C}$	3.0
		$T_L = 130\text{ °C}$	4.0
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 ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	MURS320	UNIT
Maximum instantaneous forward voltage	$I_F = 3.0\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$	$V_F^{(1)}$	0.875	V
	$I_F = 4.0\text{ A}$			0.890	
	$I_F = 3.0\text{ A}$	$T_J = 150\text{ }^\circ\text{C}$		0.710	
Maximum instantaneous reverse current at rated DC blocking voltage			$I_R^{(1)}$	5.0	μA
				$T_J = 150\text{ }^\circ\text{C}$	
Maximum reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{rr} = 0.25\text{ A}$		t_{rr}	25	ns
Maximum reverse recovery time	$I_F = 1.0\text{ A}, di/dt = 50\text{ A}/\mu\text{s}, V_R = 30\text{ V}, I_{rr} = 10\% I_{RM}$		t_{rr}	35	ns
Maximum forward recovery time	$I_F = 1.0\text{ A}, di/dt = 100\text{ A}/\mu\text{s},$ recovery to 1.0 V		t_{fr}	25	ns

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

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	MURS320	UNIT
Typical thermal resistance junction to lead	$R_{\theta JL}$	11	$^\circ\text{C}/\text{W}$

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
MURS320-E3/57T	0.211	57T	850	7" diameter plastic tape and reel
MURS320-E3/9AT	0.211	9AT	3500	13" diameter plastic tape and reel
MURS320HE3_A/H ⁽¹⁾	0.211	H	850	7" diameter plastic tape and reel
MURS320HE3_A/I ⁽¹⁾	0.211	I	3500	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

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

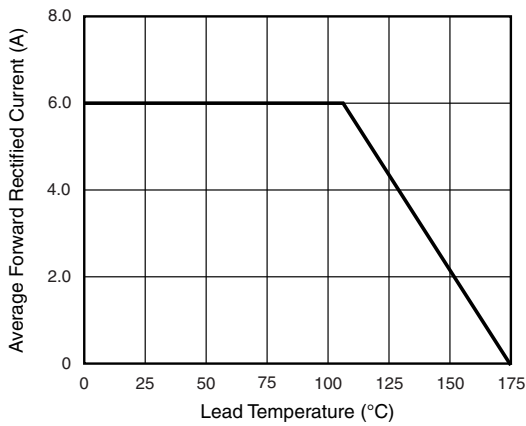


Fig. 1 - Forward Current Derating Curve

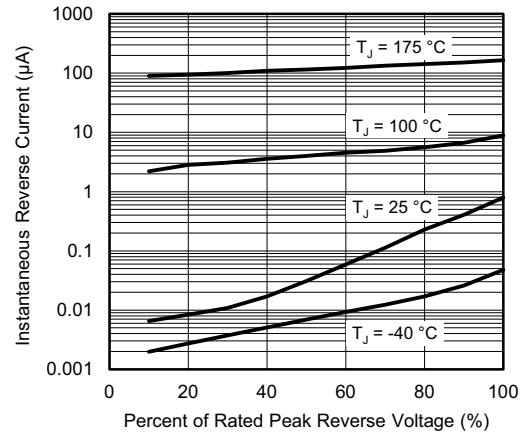


Fig. 4 - Typical Reverse Leakage Characteristics

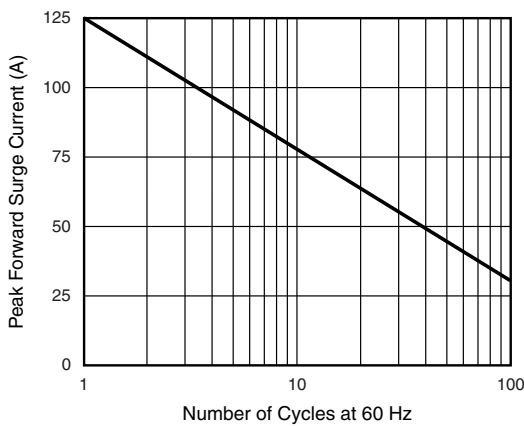


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

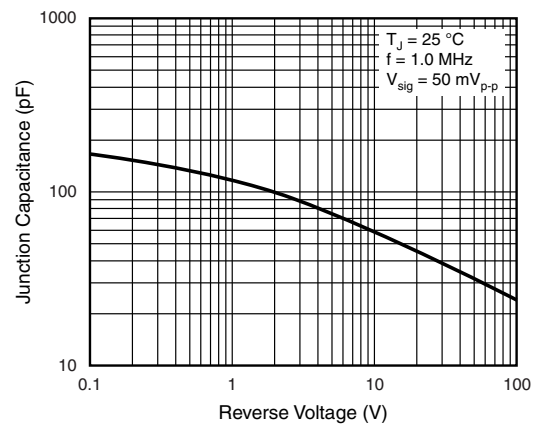


Fig. 5 - Typical Junction Capacitance

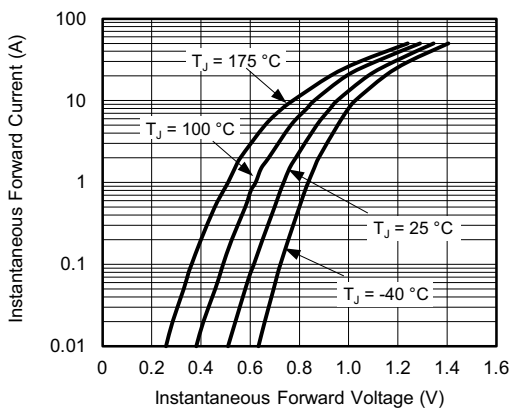
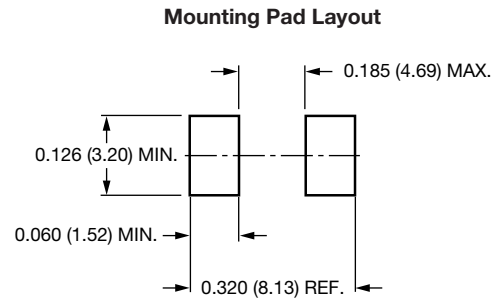
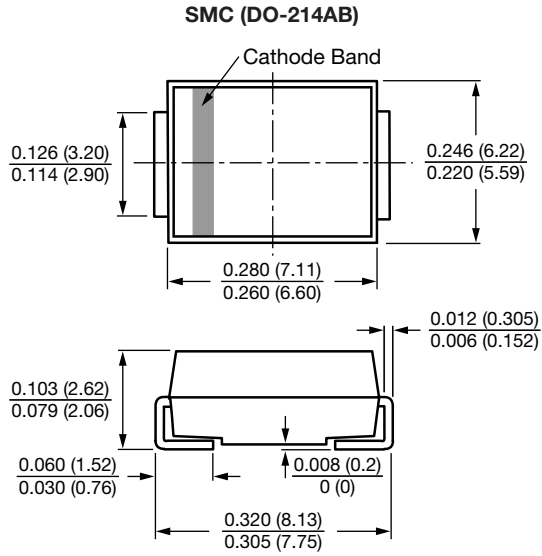


Fig. 3 - Typical Forward Voltage



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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