

Surface Mount Ultrafast Plastic Rectifier



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-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- 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, automotive and telecommunication.

MECHANICAL DATA

Case: DO-214AB (SMC)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade
Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified
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 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.0 A
V_{RRM}	400 V, 600 V
I_{FSM}	125 A
t_{rr}	50 ns
V_F	1.05 V
$T_J \text{ max.}$	175 °C

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)					
PARAMETER		SYMBOL	MURS340	MURS360	UNIT
Device marking code			MG	MJ	
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 at: (fig. 1)	T _L = 130 °C	I _{F(AV)}	3.0		A
	T _L = 115 °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	MURS340	MURS360	UNIT
Maximum instantaneous forward voltage	$I_F = 3.0\text{ A}$	$T_J = 25\text{ }^{\circ}\text{C}$	$V_F^{(1)}$	1.25		V
	$I_F = 4.0\text{ A}$			1.28		
	$I_F = 3.0\text{ A}$	$T_J = 150\text{ }^{\circ}\text{C}$		1.05		
Maximum instantaneous reverse current at rated DC blocking voltage		$T_J = 25\text{ }^{\circ}\text{C}$	$I_R^{(1)}$	10		μA
		$T_J = 150\text{ }^{\circ}\text{C}$		250		
Maximum reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$		t_{rr}	50		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}	75		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	MURS340	MURS360	UNIT
Typical thermal resistance junction to ambient	$R_{\theta JL}$	11		$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
MURS340-E3/57T	0.211	57T	850	7" diameter plastic tape and reel
MURS340-E3/9AT	0.211	9AT	3500	13" diameter plastic tape and reel
MURS340HE3/57T ⁽¹⁾	0.211	57T	850	7" diameter plastic tape and reel
MURS340HE3/9AT ⁽¹⁾	0.211	9AT	3500	13" diameter plastic tape and reel
MURS340HE3_A/H ⁽¹⁾	0.211	H	850	7" diameter plastic tape and reel
MURS340HE3_A/I ⁽¹⁾	0.211	I	3500	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

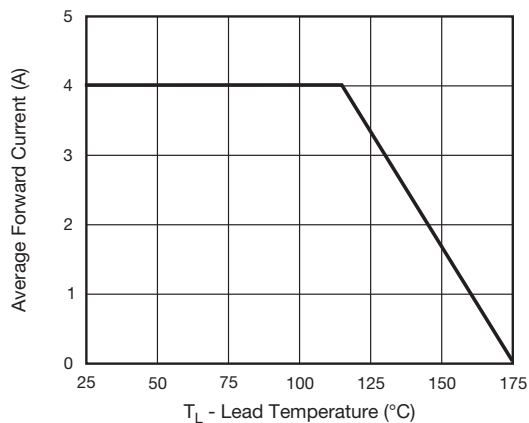
RATINGS AND CHARACTERISTICS CURVES($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

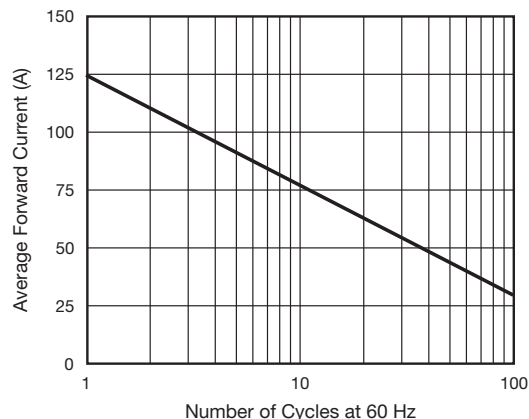


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

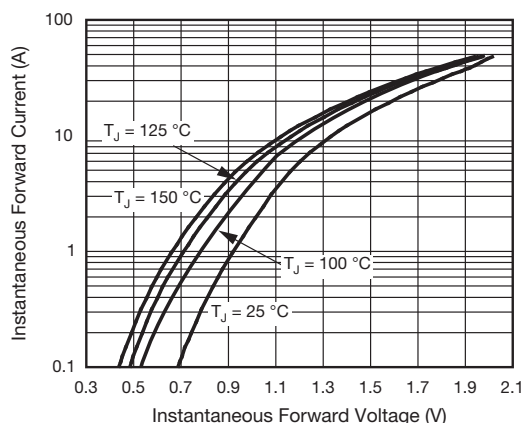


Fig. 3 - Typical Instantaneous Forward Characteristics

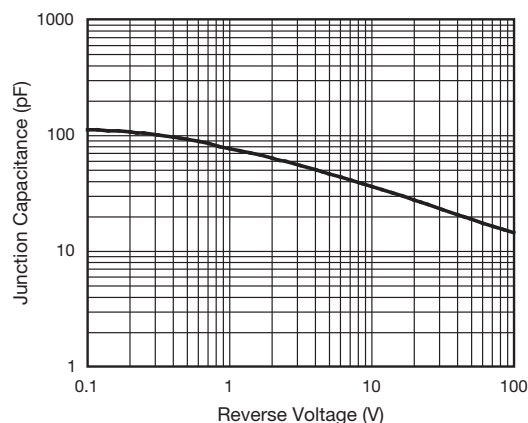


Fig. 5 - Typical Junction Capacitance

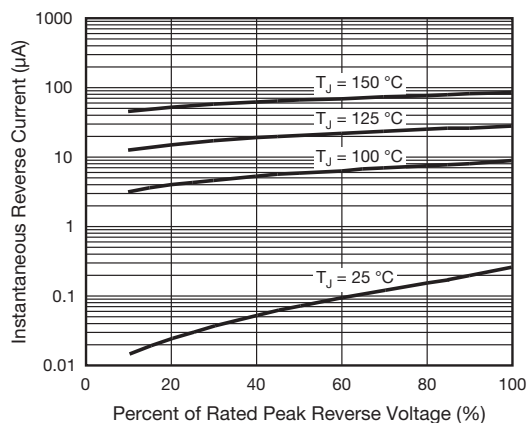


Fig. 4 - Typical Reverse Characteristics

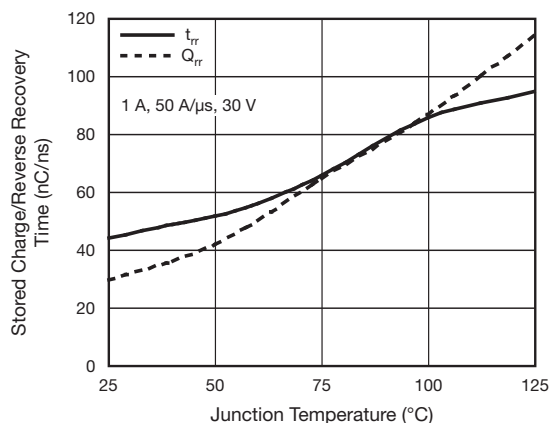
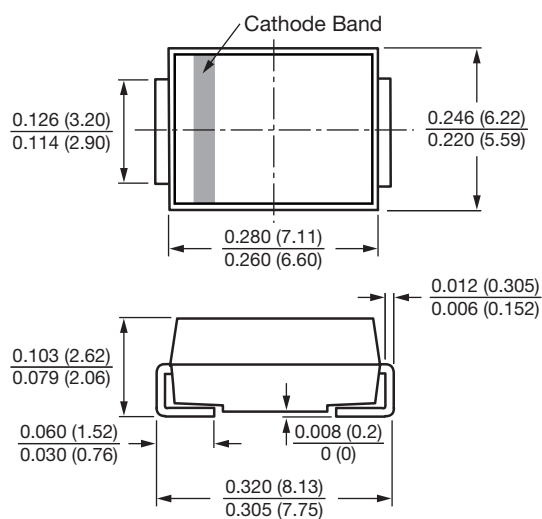


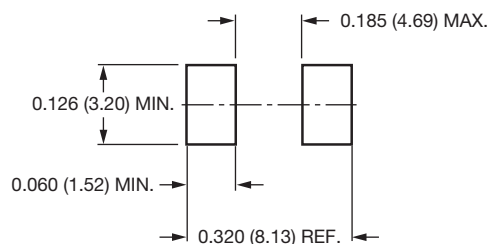
Fig. 6 - Typical Reverse Switching Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AB (SMC)



Mounting Pad Layout





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