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
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

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.

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 max.	175 °C

MECHANICAL DATA

Case: DO-214AB (SMC)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

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: (T_L = 130 °C / T_L = 115 °C) (Fig. 1)	$I_{F(AV)}$	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 noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**MURS340**	**MURS360**	**UNIT**
Maximum instantaneous forward voltage (1)	I_F = 3.0 A I_F = 4.0 A I_F = 3.0 A	T_J = 25 °C T_J = 25 °C T_J = 150 °C	V_F	1.25 1.28 1.05		V
Maximum instantaneous reverse current at rated DC blocking voltage (1)		T_J = 25 °C T_J = 150 °C	I_R	10 250		µA
Maximum reverse recovery time	I_F = 0.5 A, 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, rec. to 1.0 V		t_{fr}	25		ns

Note:

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

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)				
PARAMETER	**SYMBOL**	**MURS340**	**MURS360**	**UNIT**
Typical thermal resistance junction to ambient	$R_{\theta JL}$	11		°C/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	3200	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	3200	13" diameter plastic tape and reel

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

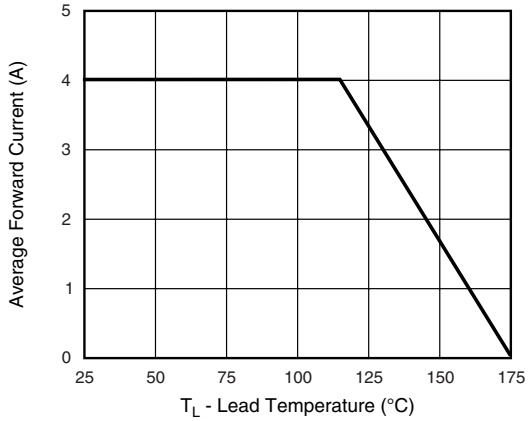


Figure 1. Forward Current Derating Curve

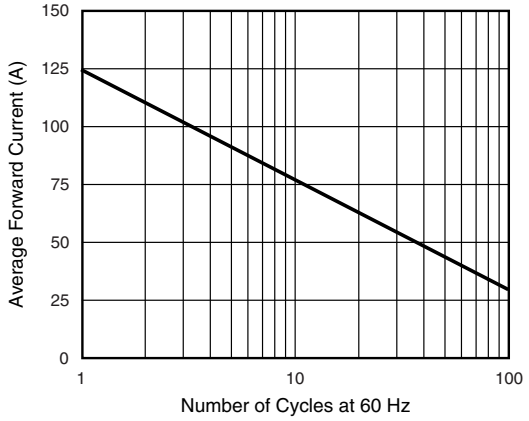


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

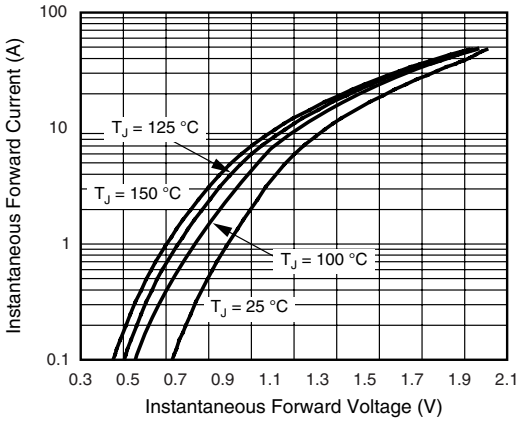


Figure 3. Typical Instantaneous Forward Characteristics

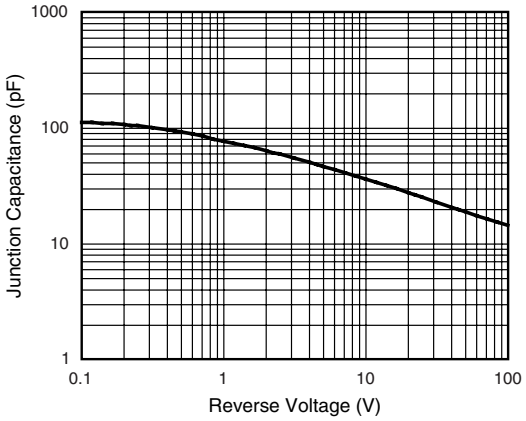


Figure 5. Typical Junction Capacitance

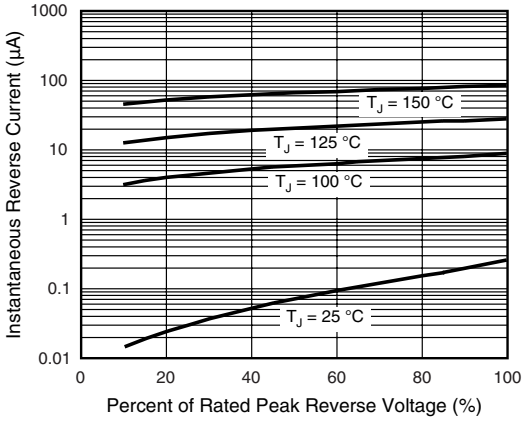


Figure 4. Typical Reverse Characteristics

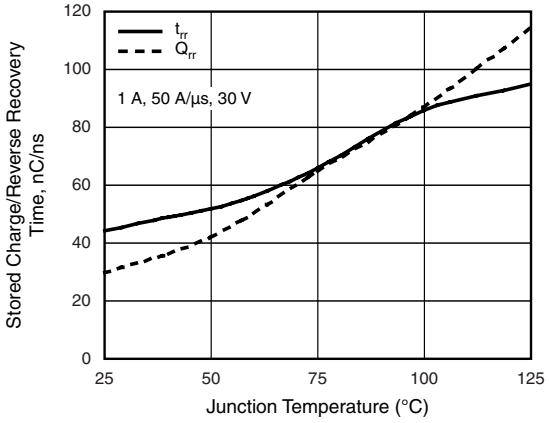
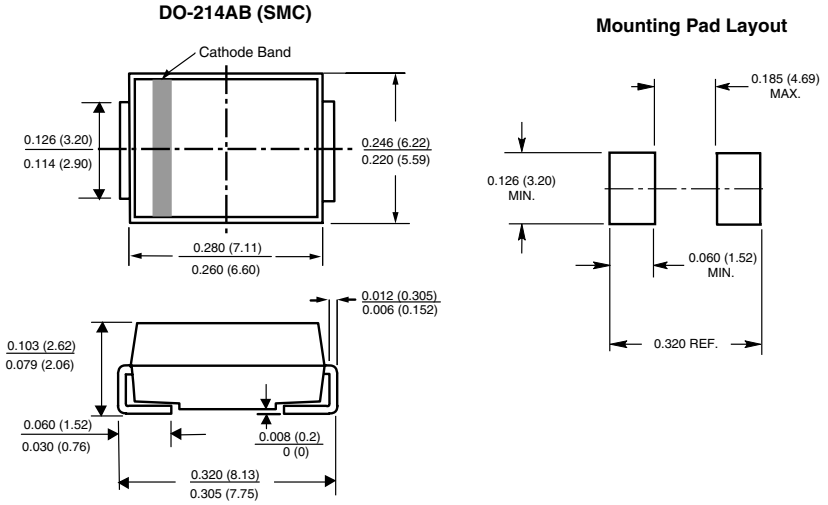


Figure 6. Typical Reverse Switching Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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