

Surface Mount Schottky Barrier Rectifier


DO-214AB (SMC)

FEATURES

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Low forward voltage drop
- High 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 low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

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 the cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	3.0 A
V_{RRM}	20 V to 60 V
I_{FSM}	100 A
E_{AS}	20 mJ
V_F	0.5 V, 0.75 V
T_J max.	125 °C, 150 °C

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)								
PARAMETER	SYMBOL	SS32	SS33	SS34	SS35	SS36	UNIT	
Device marking code		S2	S3	S4	S5	S6		
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	V	
Maximum RMS voltage	V_{RMS}	14	21	28	35	42	V	
Maximum DC blocking voltage	V_{DC}	20	30	40	50	60	V	
Maximum average forward rectified current at T_L (Fig. 1)	$I_{F(AV)}$	3.0						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100						A
Non-repetitive avalanche energy at $T_A = 25$ °C, $I_{AS} = 2.0$ A, $L = 10$ mH	E_{AS}	20						mJ
Voltage rate of change (rated V_R)	dv/dt	10 000						V/ μ s
Operating junction temperature range	T_J	- 55 to + 125			- 55 to + 150			°C
Storage temperature range	T_{STG}	- 55 to + 150						°C

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)									
PARAMETER	TEST CONDITIONS		SYMBOL	SS32	SS33	SS34	SS35	SS36	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	3.0 A		V_F	0.5			0.75		V
Maximum DC reverse current at rated DC blocking voltage ⁽¹⁾		$T_A = 25\text{ }^\circ\text{C}$ $T_A = 100\text{ }^\circ\text{C}$	I_R	0.5					mA
				20		10			

Note:

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	SS32	SS33	SS34	SS35	SS36	UNIT	
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$ $R_{\theta JL}$	55			17		$^\circ\text{C/W}$	

Note:

(1) P.C.B. mounted 0.55 x 0.55" (14 x 14 mm) copper pad areas

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SS34-E3/57T	0.235	57T	850	7" diameter plastic tape and reel
SS34-E3/9AT	0.235	9AT	3500	13" diameter plastic tape and reel
SS34HE3/57T ⁽¹⁾	0.235	57T	850	7" diameter plastic tape and reel
SS34HE3/9AT ⁽¹⁾	0.235	9AT	3500	13" diameter plastic tape and reel

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

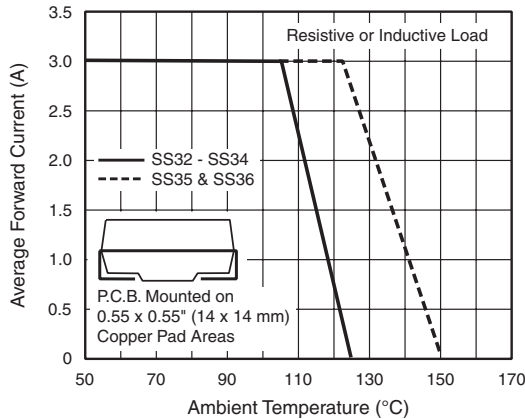


Figure 1. Forward Current Derating Curve

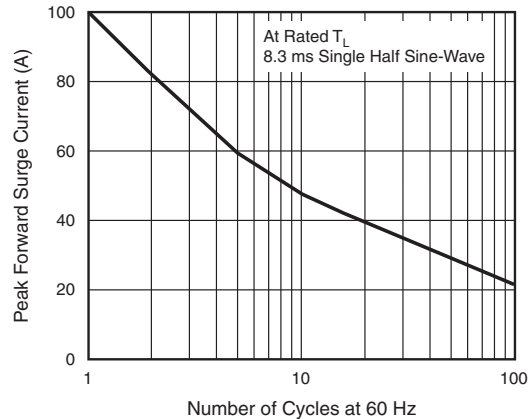


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

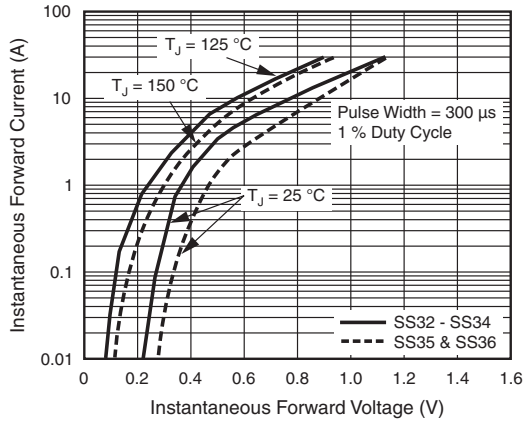


Figure 3. Typical Instantaneous Forward Characteristics

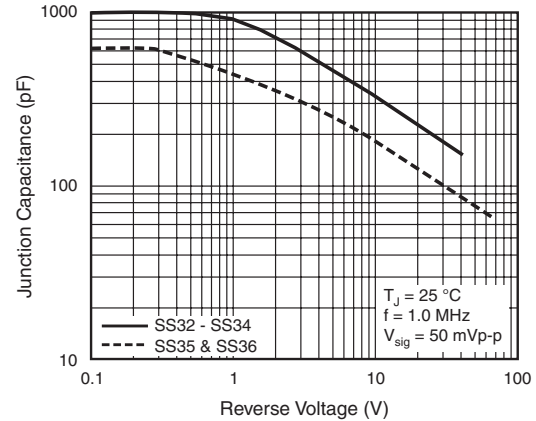


Figure 5. Typical Junction Capacitance

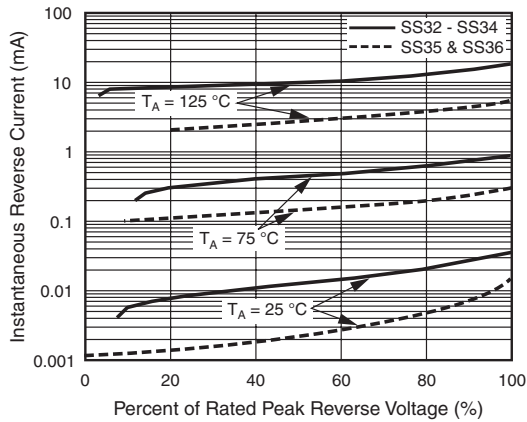


Figure 4. Typical Reverse Current Characteristics

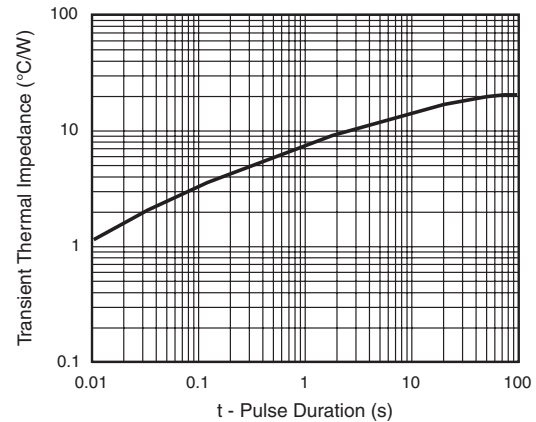
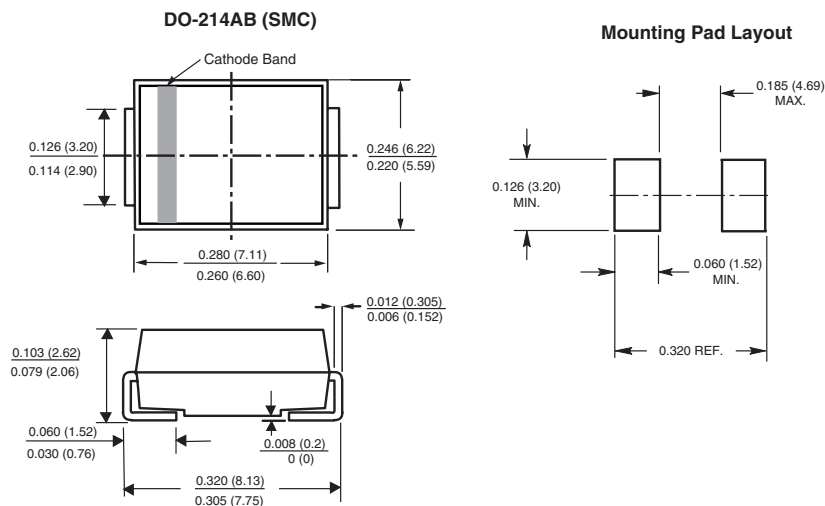


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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