

## 3A, 20V - 200V Surface Mount Schottky Barrier Rectifier

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- Guard ring for over-voltage protection
- High surge current capability
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	3	A
$V_{RRM}$	20 - 200	V
Package	DO-214AB (SMC)	
Configuration	Single die	

### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- Converter



### MECHANICAL DATA

- Case: DO-214AB (SMC)
- Molding compound meets UL 94V-0 flammability rating
- Part no. with suffix "H" means AEC-Q101 qualified
- Packing code with suffix "G" means green compound (halogen-free)
- Moisture sensitivity level: level 1, per J-STD-020
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.21 g (approximately)



DO-214AB (SMC)

ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)											
PARAMETER	SYMBOL	SS 32	SS 33	SS 34	SS 35	SS 36	SS 39	SS 310	SS 315	SS 320	UNIT
Marking code on the device		SS 32	SS 33	SS 34	SS 35	SS 36	SS 39	SS 310	SS 315	SS 320	
Repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	90	100	150	200	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	35	42	63	70	105	140	V
Maximum DC blocking voltage	$V_{DC}$	20	30	40	50	60	90	100	150	200	V
Forward current	$I_{F(AV)}$	3									A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	100				75					A
Critical rate of rise of off-state voltage	dV/dt	10,000									V/ $\mu\text{s}$
Junction temperature	$T_J$	- 55 to +125				- 55 to +150					$^\circ\text{C}$
Storage temperature	$T_{STG}$	- 55 to +150									$^\circ\text{C}$

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-lead thermal resistance per diode	$R_{\theta JL}$	17	°C/W
Junction-to-ambient thermal resistance per diode	$R_{\theta JA}$	55	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)						
<b>PARAMETER</b>		<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP.</b>	<b>MAX.</b>	<b>UNIT</b>
Forward voltage per diode <sup>(1)</sup>	SS32 SS33 SS34	$I_F = 3\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	0.50	V
	SS35 SS36			-	0.75	V
	SS39 SS310			-	0.85	V
	SS315 SS320			-	0.95	V
Forward voltage per diode <sup>(1)</sup>	SS32 SS33 SS34	$I_F = 3\text{A}, T_J = 100^\circ\text{C}$	$V_F$	-	0.40	V
	SS35 SS36			-	0.65	V
	SS39 SS310			-	0.70	V
	SS315 SS320			-	0.80	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	SS32 SS33 SS34 SS35 SS36	$T_J = 25^\circ\text{C}$	$I_R$	-	0.5	mA
	SS39 SS310 SS315 SS320			-	0.1	mA
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	SS32 SS33 SS34	$T_J = 100^\circ\text{C}$	$I_R$	-	10	mA
	SS35 SS36			-	5	mA
	SS39 SS310 SS315 SS320			-	-	mA
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	SS32 SS33 SS34	$T_J = 125^\circ\text{C}$	$I_R$	-	-	mA
	SS35 SS36			-	-	mA
	SS39 SS310 SS315 SS320			-	0.5	mA

**Notes:**

1. Pulse test with  $PW=0.3\text{ ms}$
2. Pulse test with  $PW=30\text{ ms}$

<b>ORDERING INFORMATION</b>					
<b>PART NO.</b>	<b>PART NO. SUFFIX</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>PACKAGE</b>	<b>PACKING</b>
SS3xx (Note 1,2)	H	R7	G	SMC	850 / 7" Plastic reel
		R6		SMC	3,000 / 13" Paper reel
		M6		SMC	3,000 / 13" Plastic reel
		V7		Matrix SMC	850 / 7" Plastic reel
		V6		Matrix SMC	3,000 / 13" Plastic reel

**Note :**

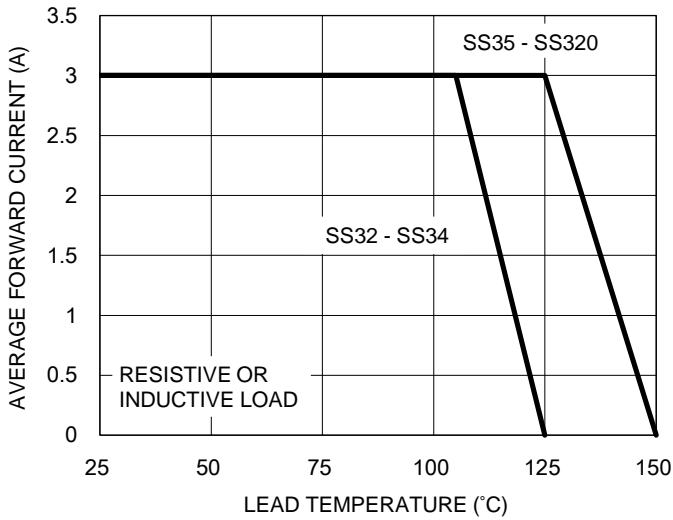
1. "xx" defines voltage from 20V (SS32) to 200V (SS320)
2. Only V6 and V7 are all green compound (halogen free)

<b>EXAMPLE</b>					
<b>EXAMPLE P/N</b>	<b>PART NO.</b>	<b>PART NO. SUFFIX</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>DESCRIPTION</b>
SS32HR7G	SS32	H	R7	G	AEC-Q101 qualified Green compound

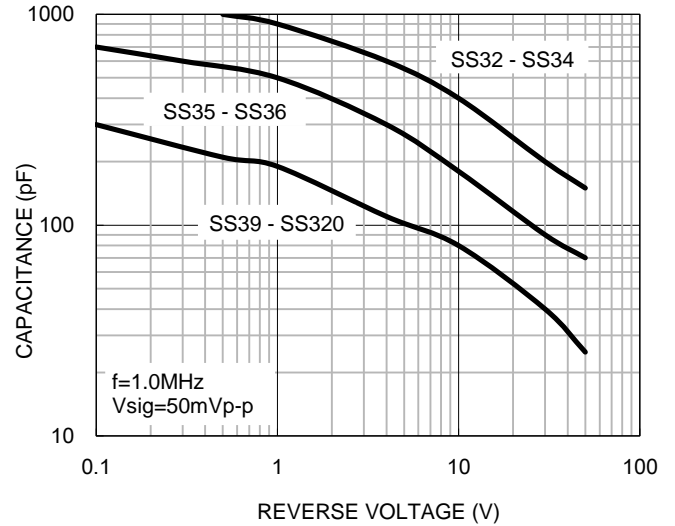
**CHARACTERISTICS CURVES**

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

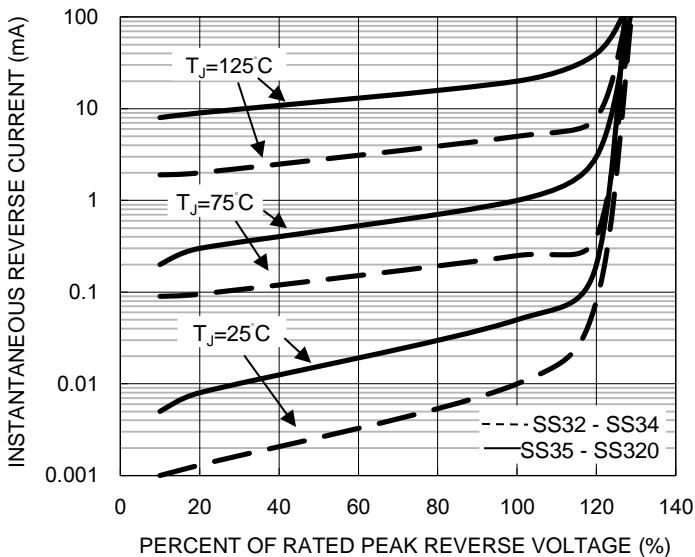
**Fig.1 Forward Current Derating Curve**



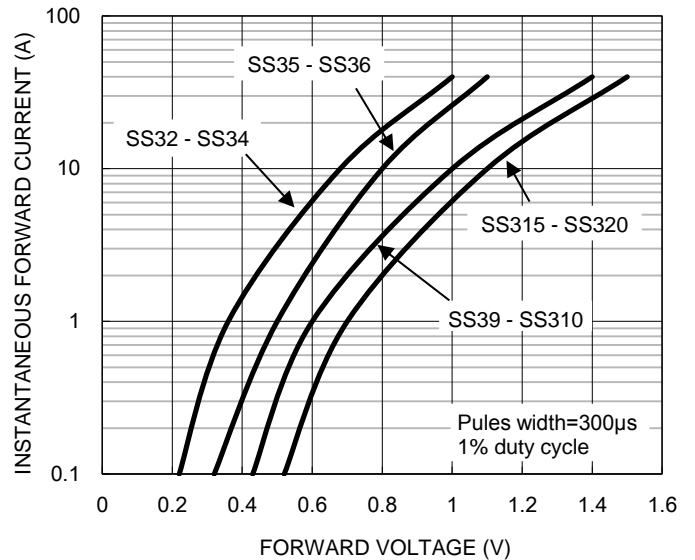
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



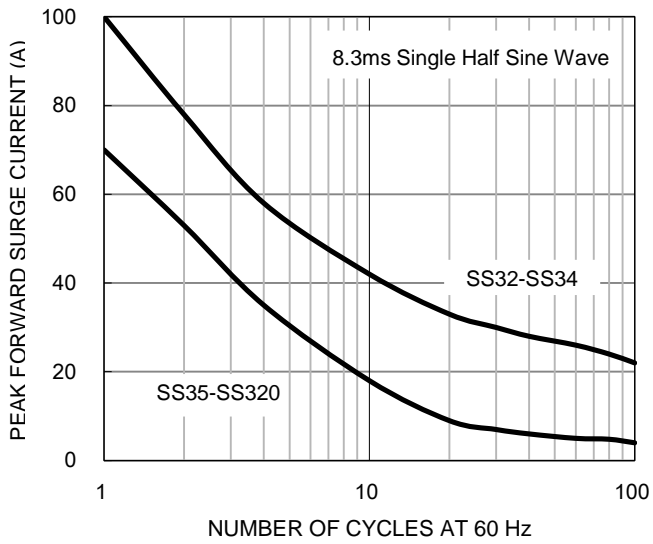
**Fig.4 Typical Forward Characteristics**



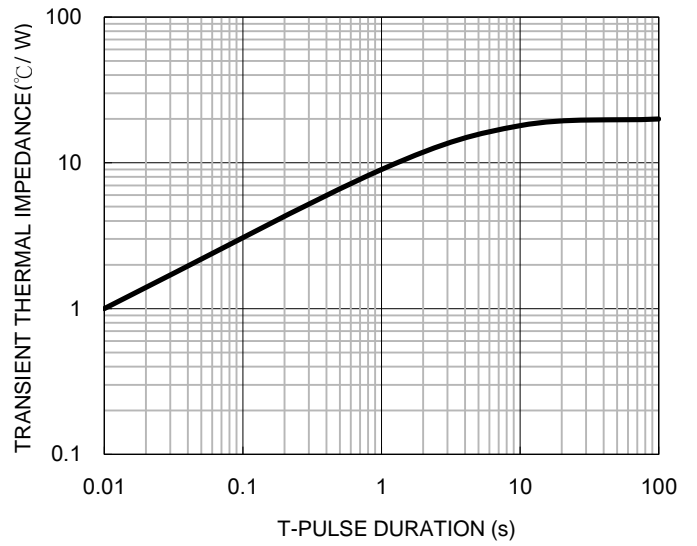
**CHARACTERISTICS CURVES**

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

**Fig.5 Maximum Non-repetitive Forward Surge Current**

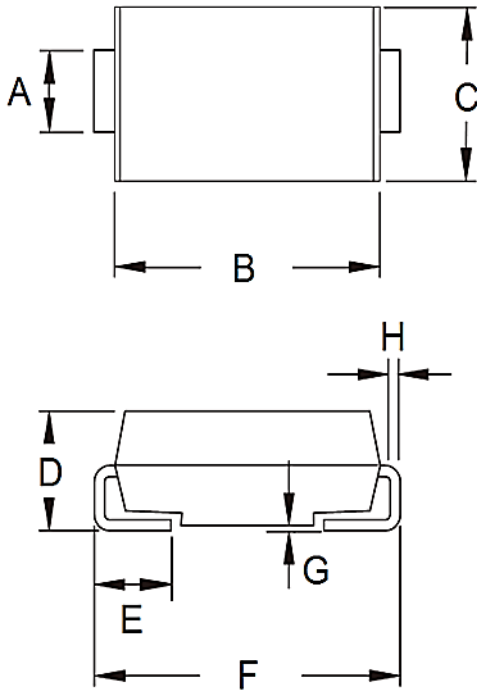


**Fig.6 Typical Transient Thermal Characteristics**



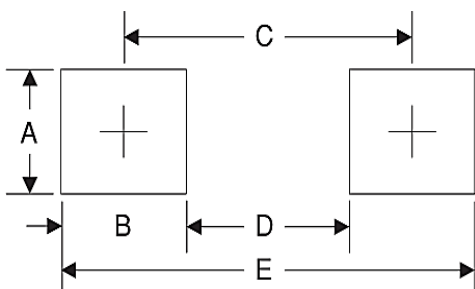
**PACKAGE OUTLINE DIMENSIONS**

DO-214AB (SMC)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	2.90	3.20	0.114	0.126
B	6.60	7.11	0.260	0.280
C	5.59	6.22	0.220	0.245
D	2.00	2.62	0.079	0.103
E	1.00	1.60	0.039	0.063
F	7.75	8.13	0.305	0.320
G	0.10	0.20	0.004	0.008
H	0.15	0.31	0.006	0.012

**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	3.30	0.130
B	2.50	0.098
C	6.80	0.268
D	4.40	0.173
E	9.40	0.370

**MARKING DIAGRAM**

Matrix SMC

SMC



- P/N =Marking Code
- G =Green Compound
- YW =Date Code
- F =Factory Code

## Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.