

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

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- Guard ring for overvoltage protection
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

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

### MECHANICAL DATA

- Case: DO-214AB (SMC)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.210g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	3	A
$V_{RRM}$	20 - 200	V
$I_{FSM}$	75, 100	A
$T_{J\ MAX}$	125, 150	°C
Package	DO-214AB (SMC)	
Configuration	Single die	



**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
Forward current	$I_F$	3									A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	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					°C
Storage temperature	$T_{STG}$	- 55 to +150									°C

**THERMAL PERFORMANCE**

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	17	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	55	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT				
Forward voltage <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			
	SS32 SS33 SS34			$I_F = 3\text{A}, T_J = 100^\circ\text{C}$	-	0.40	V		
	SS35 SS36				-	0.65	V		
	SS39 SS310	-			0.70	V			
	SS315 SS320	-			0.80	V			
	Reverse current @ rated $V_R$ <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
		SS32 SS33 SS34		$T_J = 100^\circ\text{C}$	-		10	mA	
		SS35 SS36			-		5	mA	
SS39 SS310 SS315 SS320		-	-		mA				
SS32 SS33 SS34		$T_J = 125^\circ\text{C}$	-		-		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  $PW = 30\text{ms}$

**ORDERING INFORMATION**

<b>ORDERING CODE<sup>(1)</sup></b>	<b>PACKAGE</b>	<b>PACKING</b>
SS3x	DO-214AB (SMC)	3,000 / Tape & Reel

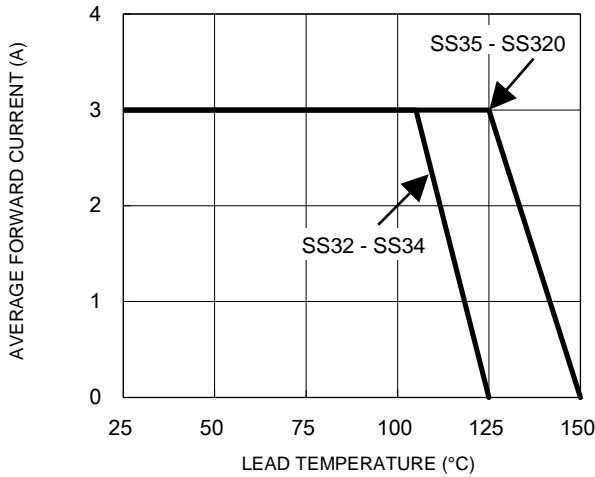
**Notes:**

1. “x” defines voltage from 20V(SS32) to 200V(SS320)

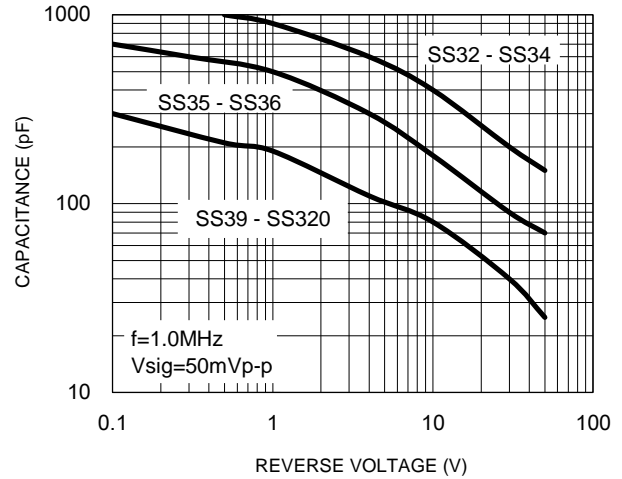
**CHARACTERISTICS CURVES**

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

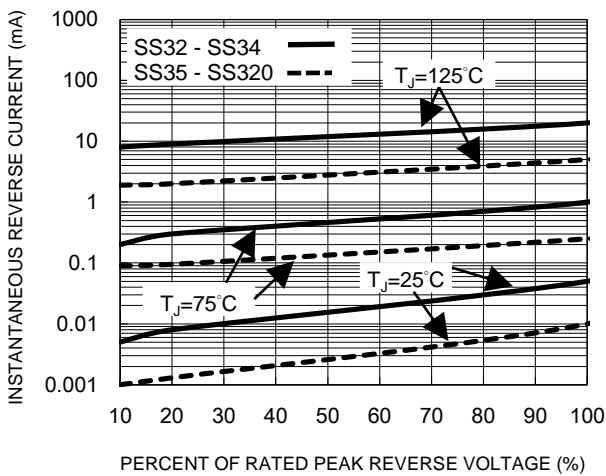
**Fig.1 Forward Current Derating Curve**



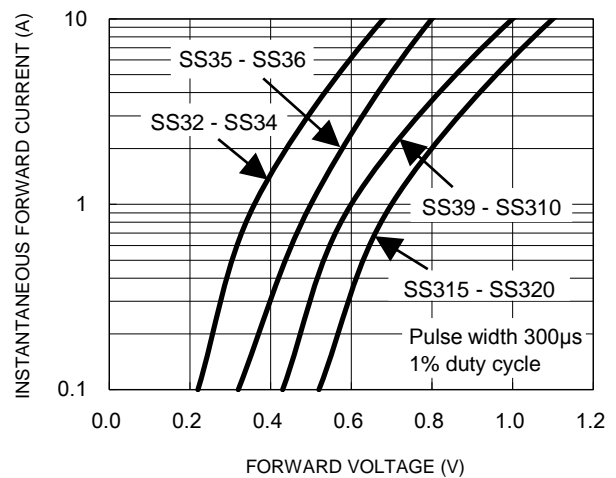
**Fig.2 Typical Junction Capacitance**



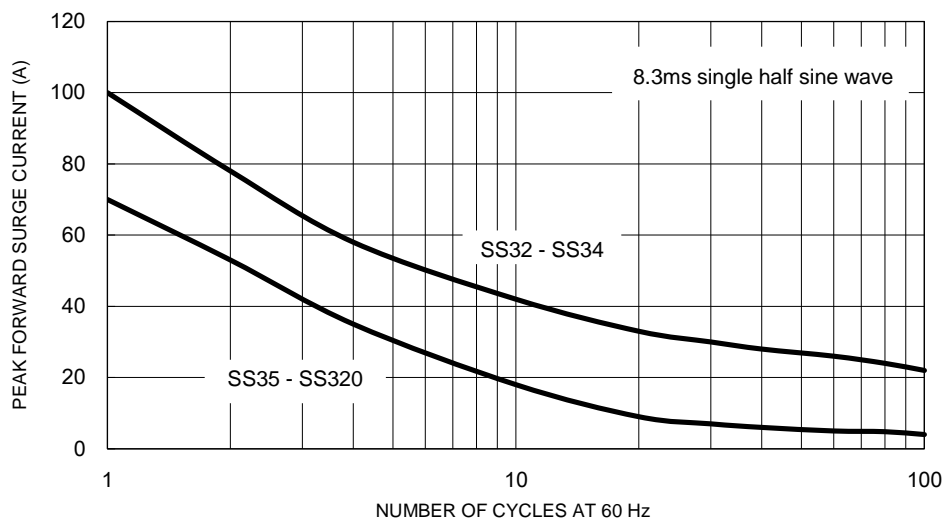
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



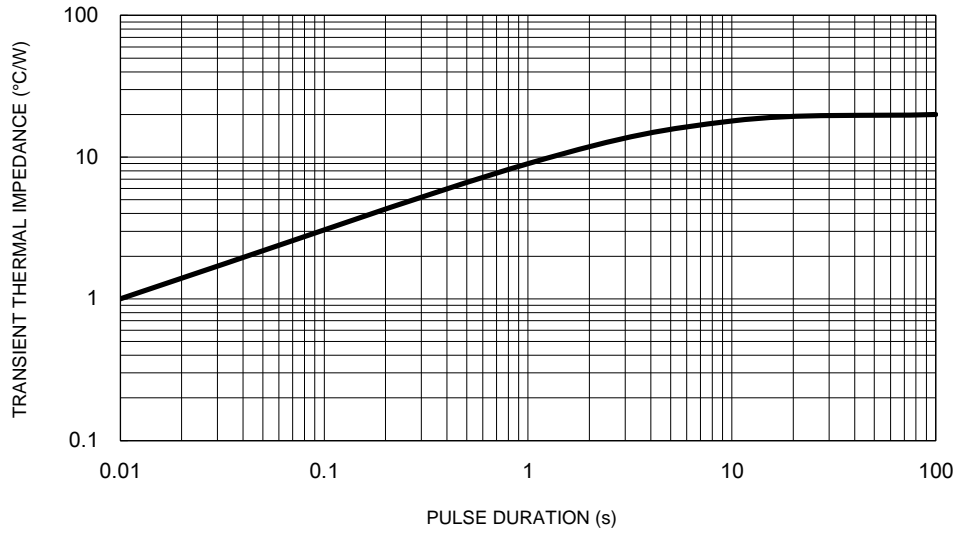
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



**CHARACTERISTICS CURVES**

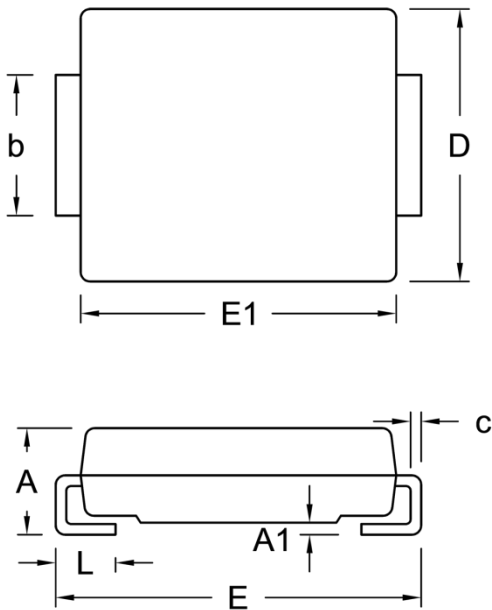
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.6 Typical Transient Thermal Characteristics**



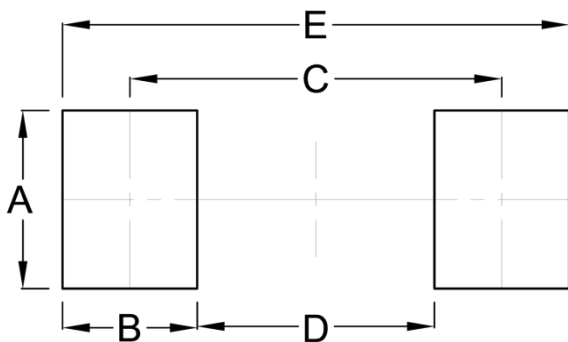
**PACKAGE OUTLINE DIMENSIONS**

DO-214AB (SMC)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	2.00	2.62	0.079	0.103
A1	0.10	0.20	0.004	0.008
b	2.90	3.20	0.114	0.126
c	0.15	0.31	0.006	0.012
D	5.59	6.22	0.220	0.245
E	7.75	8.13	0.305	0.320
E1	6.60	7.11	0.260	0.280
L	1.00	1.60	0.039	0.063

**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	3.30	0.130
B	2.50	0.098
C	6.90	0.272
D	4.40	0.173
E	9.40	0.370

**MARKING DIAGRAM**



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

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