

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

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- Guard ring for over-voltage 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-214AC (SMA)
- 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: 0.070g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	3	A
$V_{RRM}$	20 - 200	V
$I_{FSM}$	70	A
$T_{J\ MAX}$	150	°C
Package	DO-214AC (SMA)	
Configuration	Single die	



DO-214AC (SMA)



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)											
PARAMETER	SYMBOL	SK 32A	SK 33A	SK 34A	SK 35A	SK 36A	SK 39A	SK 310A	SK 315A	SK 320A	UNIT
Marking code on the device		SK 32A	SK 33A	SK 34A	SK 35A	SK 36A	SK 39A	SK 310A	SK 315A	SK 320A	
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
Surge peak forward current, 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	70									A
Critical rate of rise of off-state voltage	dV/dt	10,000									V/ $\mu\text{s}$
Junction temperature	$T_J$	- 55 to +150									°C
Storage temperature	$T_{STG}$	- 55 to +150									°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-lead thermal resistance	$R_{\theta JL}$	25	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	66	°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 <sup>(1)</sup>	SK32A SK33A SK34A	$I_F = 3\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	0.55	V
	SK35A SK36A			-	0.72	V
	SK39A SK310A			-	0.85	V
	SK315A SK320A			-	0.95	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	SK32A SK33A SK34A	$T_J = 25^\circ\text{C}$	$I_R$	-	0.5	mA
	SK35A SK36A			-	0.2	mA
	SK39A SK310A SK315A SK320A			-	0.1	mA
Reverse current @ rated $V_R$ <sup>(2)</sup>	SK32A SK33A SK34A	$T_J = 100^\circ\text{C}$	$I_R$	-	10	mA
	SK35A SK36A			-	5	mA
	SK39A SK310A SK315A SK320A			-	-	mA
Reverse current @ rated $V_R$ <sup>(2)</sup>	SK32A SK33A SK34A	$T_J = 125^\circ\text{C}$	$I_R$	-	-	mA
	SK35A SK36A			-	10	mA
	SK39A SK310A SK315A SK320A			-	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>ORDERING CODE</b> <sup>(1)</sup>	<b>PACKAGE</b>	<b>PACKING</b>
SK3xA	DO-214AC (SMA)	7,500 / Tape & Reel

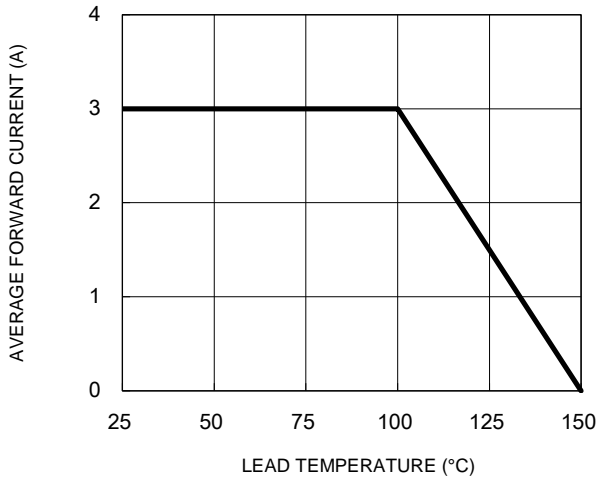
**Notes:**

1. "x" defines voltage from 20V(SK32A) to 200V(SK320A)

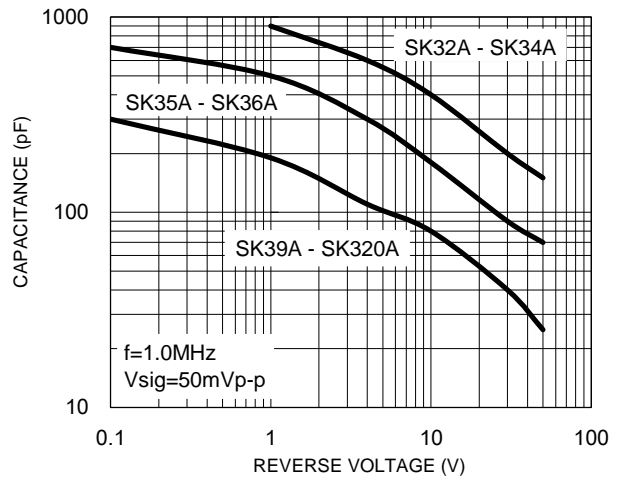
**CHARACTERISTICS CURVES**

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

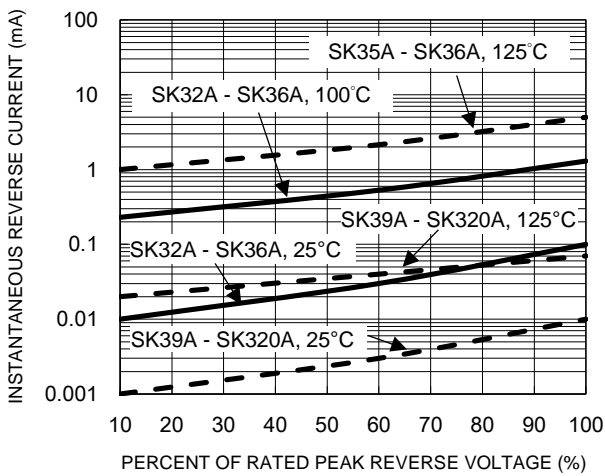
**Fig.1 Forward Current Derating Curve**



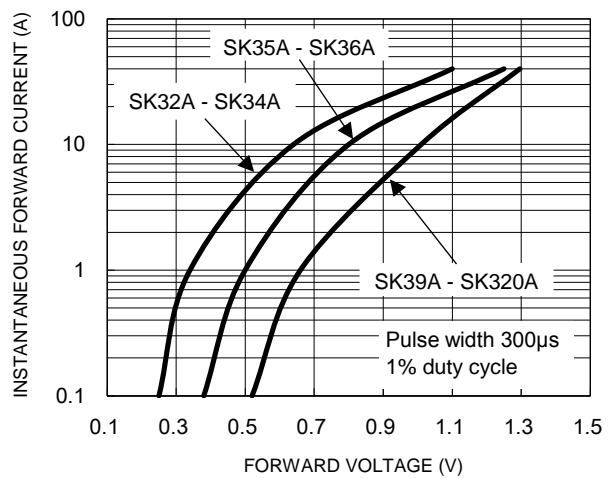
**Fig.2 Typical Junction Capacitance**



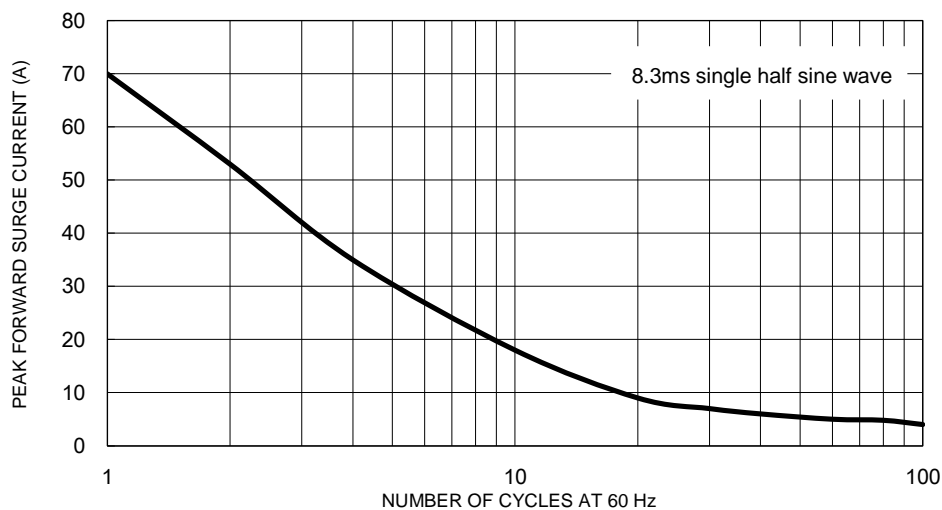
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



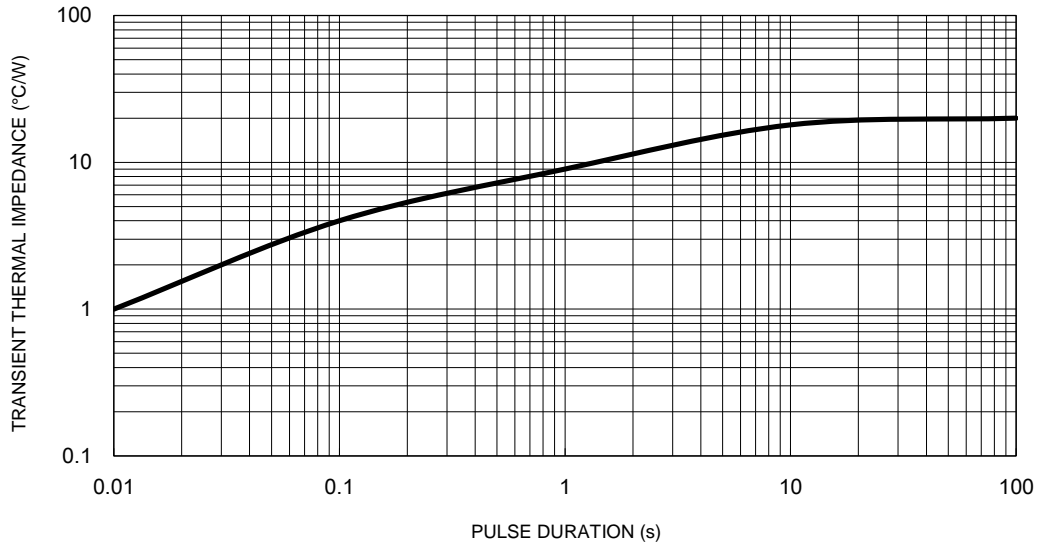
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



**CHARACTERISTICS CURVES**

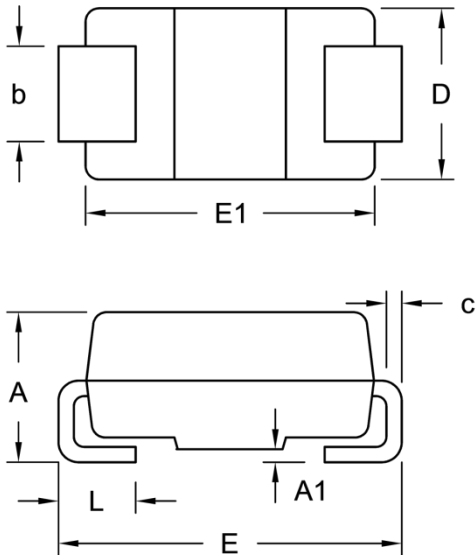
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.6 Typical Transient Thermal Characteristics**



**PACKAGE OUTLINE DIMENSIONS**

DO-214AC (SMA)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.99	2.50	0.078	0.098
A1	0.10	0.20	0.004	0.008
b	1.27	1.58	0.050	0.062
c	0.15	0.31	0.006	0.012
D	2.29	2.83	0.090	0.111
E	4.95	5.33	0.195	0.210
E1	4.06	4.60	0.160	0.181
L	0.90	1.41	0.035	0.056

**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	1.68	0.066
B	1.52	0.060
C	3.93	0.155
D	2.41	0.095
E	5.45	0.215

**MARKING DIAGRAM**



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

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