

## 8A, 20V - 100V 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

### 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)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	8	A
$V_{RRM}$	20 - 100	V
$I_{FSM}$	150	A
Package	DO-214AB (SMC)	
Configuration	Single die	



**DO-214AB (SMC)**

ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25°C unless otherwise noted)								
PARAMETER	SYMBOL	SK 82C	SK 83C	SK 84C	SK 85C	SK 86C	SK 810C	UNIT
Marking code on the device		SK 82C	SK 83C	SK 84C	SK 85C	SK 86C	SK 810C	
Repetitive peak reverse voltage	V <sub>RRM</sub>	20	30	40	50	60	100	V
Reverse voltage, total rms value	V <sub>R(RMS)</sub>	14	21	28	35	42	70	V
Maximum DC blocking voltage	V <sub>DC</sub>	20	30	40	50	60	100	V
Forward current	I <sub>F(AV)</sub>	8						A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	I <sub>FSM</sub>	150						A
Critical rate of rise of off-state voltage	dV/dt	10,000						V/μs
Junction temperature	T <sub>J</sub>	- 55 to +125			- 55 to +150			°C
Storage temperature	T <sub>STG</sub>	- 55 to +150						°C

## THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance per diode	R <sub>θJA</sub>	20	°C/W

## ELECTRICAL SPECIFICATIONS (T<sub>A</sub> = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Forward voltage per diode <sup>(1)</sup>	SK82C SK83C SK84C	$I_F = 8A, T_J = 25^\circ C$	$V_F$	-	0.55	V
	SK85C SK86C			-	0.75	V
	SK810C			-	0.90	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>		$T_J = 25^\circ C$	$I_R$	-	0.5	mA
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	SK82C SK83C SK84C	$T_J = 100^\circ C$	$I_R$	-	15	mA
	SK85C SK86C SK810C			-	10	mA

**Notes:**

1. Pulse test with  $PW=0.3$  ms
2. Pulse test with  $PW=30$  ms

**ORDERING INFORMATION**

PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
SK8xxC (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 (SK82C) to 100V (SK810C)
2. Only V6 and V7 are all green compound (halogen free)

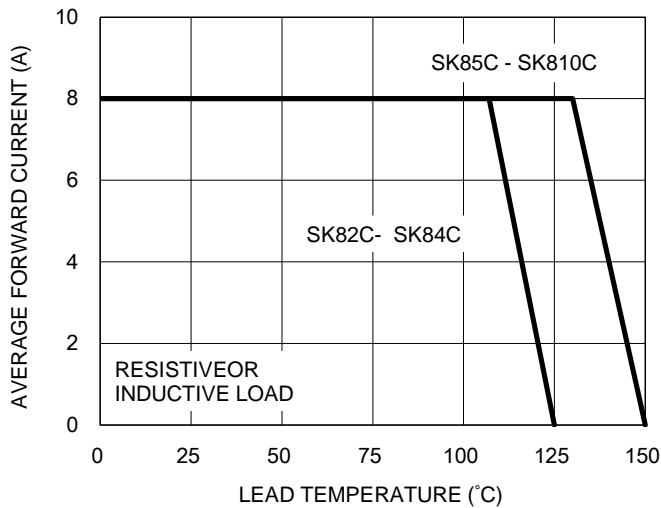
**EXAMPLE**

EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
SK82CHR7G	SK82C	H	R7	G	AEC-Q101 qualified Green compound

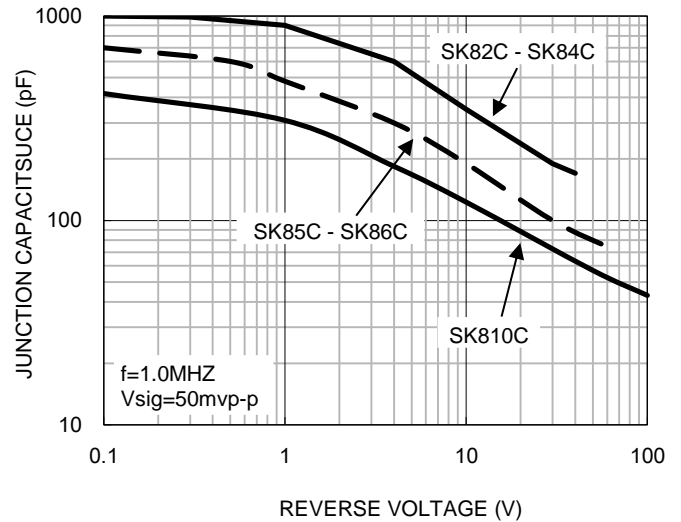
## CHARACTERISTICS CURVES

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

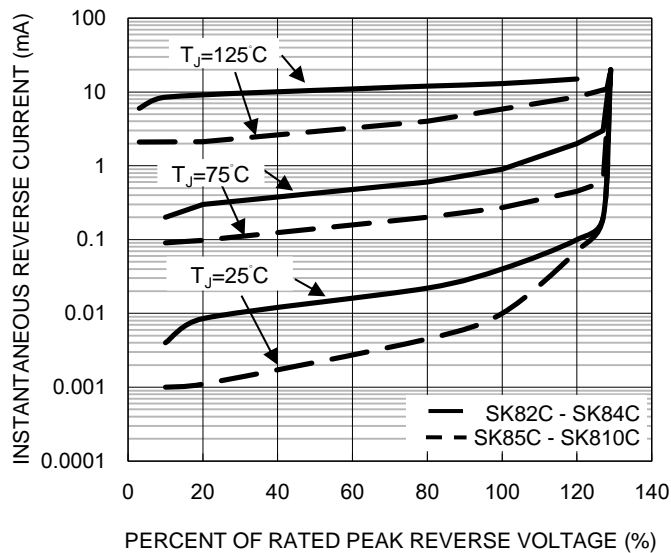
**Fig.1 Forward Current Derating Curve**



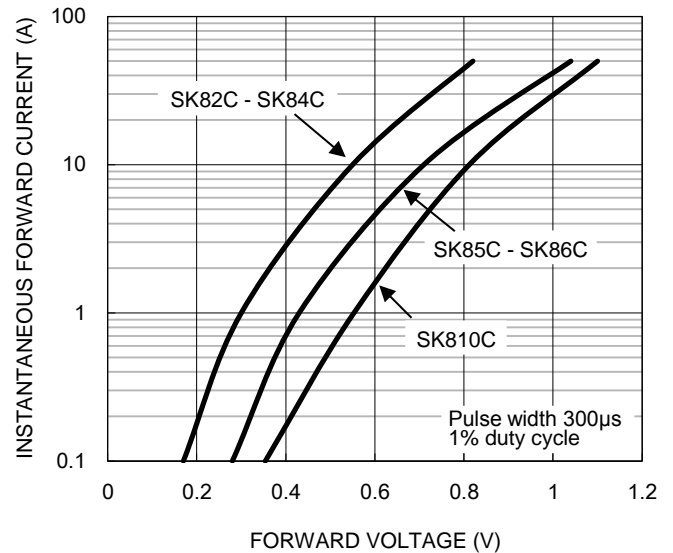
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



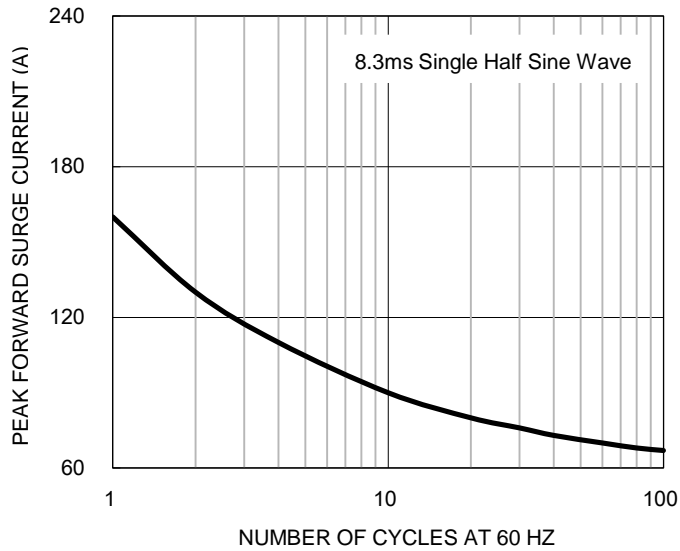
**Fig.4 Typical Forward Characteristics**



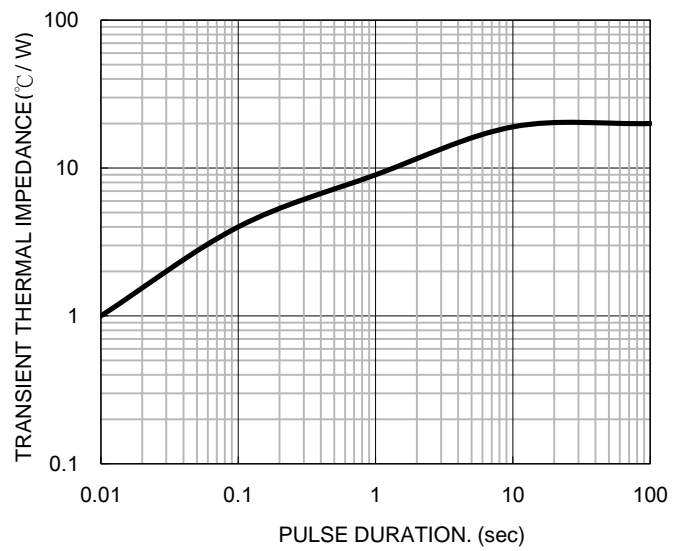
## CHARACTERISTICS CURVES

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

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

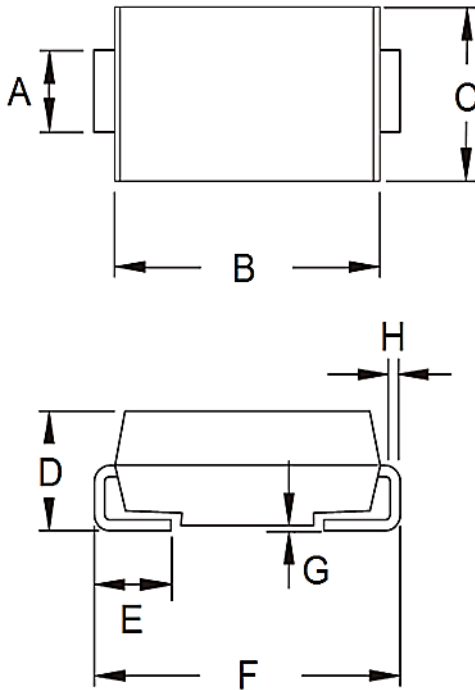


**Fig.6 Typical Transient Thermal Characteristics**



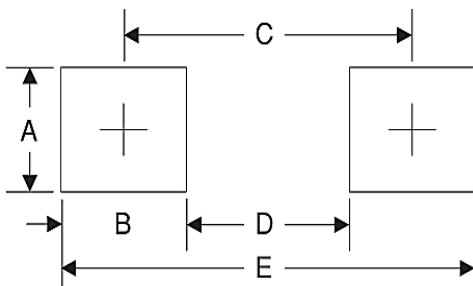
## PACKAGE OUTLINE DIMENSIONS

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

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