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
I_{FSM}	70	A
Package	DO-214AA (SMB)	
Configuration	Single Die	

APPLICATIONS

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

MECHANICAL DATA

- Case: DO-214AA (SMB)
- 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: 0.1 g (approximately)

Pb-Free RoHS COMPLIANT

DO-214AA (SMB)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	SK 32B	SK 33B	SK 34B	SK 35B	SK 36B	SK 39B	SK 310B	SK 315B	SK 320B	UNIT
Marking code on the device		SK 32B	SK 33B	SK 34B	SK 35B	SK 36B	SK 39B	SK 310B	SK 315B	SK 320B	
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}	70									A
Critical rate of rise of off-state voltage	dV/dt	10000									V/μs
Junction temperature	T_J	- 55 to +125			- 55 to +150						°C
Storage temperature	T_{STG}	- 55 to +150									°C

THERMAL PERFORMANCE			
PARAMETER	**SYMBOL**	**LIMIT**	**UNIT**
Junction-to-lead thermal resistance	$R_{\Theta JL}$	23	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	63	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode (1)	SK32B	I_F = 3A, T_J = 25°C	V_F	-	0.50	V
	SK33B					V
	SK34B					V
	SK35B			-	0.75	V
	SK36B					V
	SK39B			-	0.85	V
	SK310B					V
	SK315B			-	0.95	V
	SK320B					V
Reverse current @ rated V_R per diode (2)	SK32B	T_J = 25°C	I_R	-	0.5	mA
	SK33B					mA
	SK34B					mA
	SK35B					mA
	SK36B					mA
	SK39B			-	0.1	mA
	SK310B					mA
	SK315B					mA
	SK320B					mA
Reverse current @ rated V_R per diode (2)	SK32B	T_J = 100°C	I_R	-	10	mA
	SK33B					mA
	SK34B					mA
	SK35B			-	5	mA
	SK36B					mA
	SK39B			-	-	mA
	SK310B					mA
	SK315B					mA
	SK320B					mA
Reverse current @ rated V_R per diode (2)	SK32B	T_J = 125°C	I_R	-	-	mA
	SK33B					mA
	SK34B					mA
	SK35B			-	-	mA
	SK36B					mA
	SK39B			-	2	mA
	SK310B					mA
	SK315B					mA
	SK320B					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
SK3xxB (Note 1)	H	R5	G	SMB	850 / 7" Plastic reel
		R4		SMB	3,000 / 13" Paper reel
		M4		SMB	3,000 / 13" Plastic reel

Note:

1. "x" defines voltage from 20V (SK32B) to 200V (SK320B)

*: Optional available

EXAMPLE P/N

EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
SK36BHR5G	SK36B	H	R5	G	AEC-Q101 qualified Green compound

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

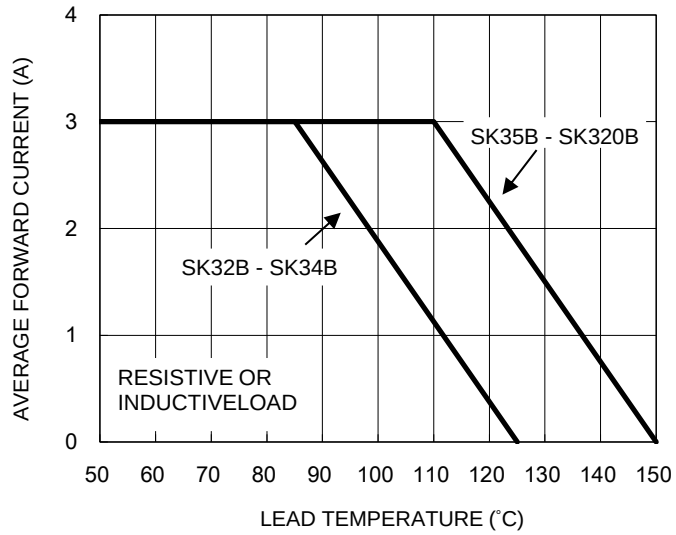


Fig.2 Typical Junction Capacitance

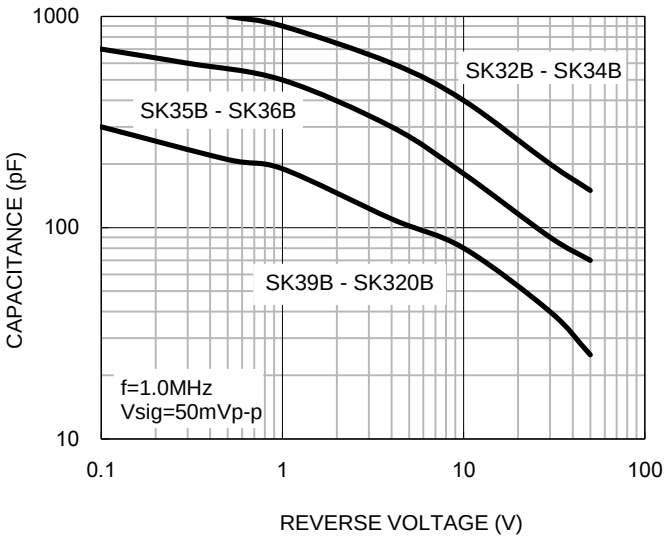


Fig.3 Typical Reverse Characteristics

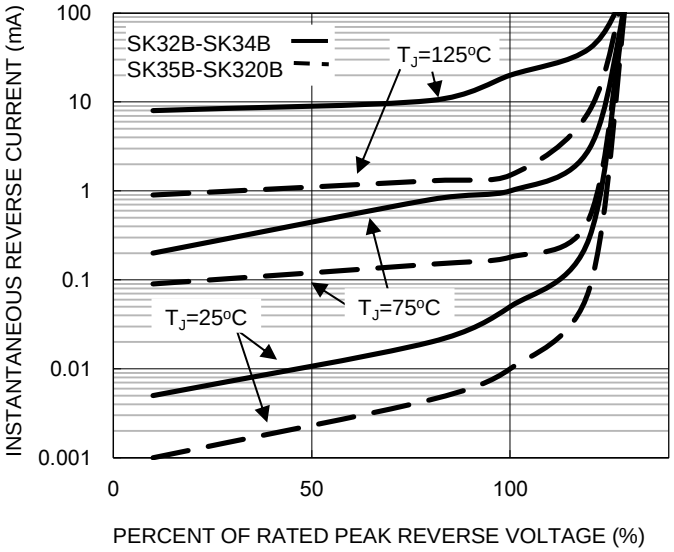
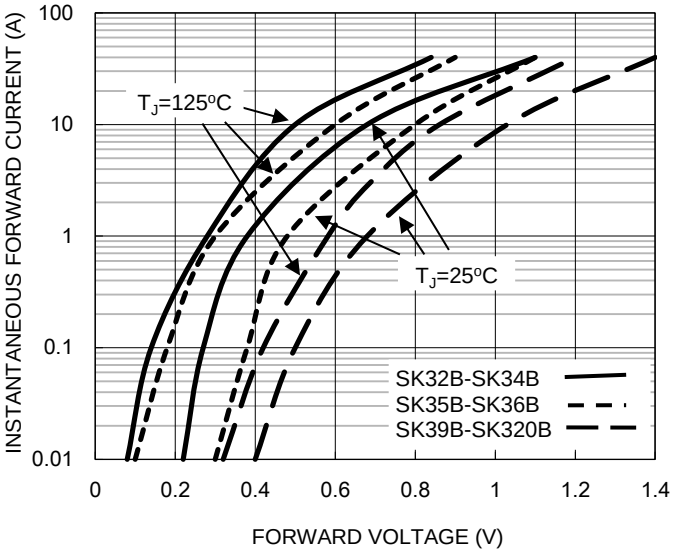


Fig.4 Typical Forward Characteristics



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.5 Maximum Non-repetitive Forward Surge Current

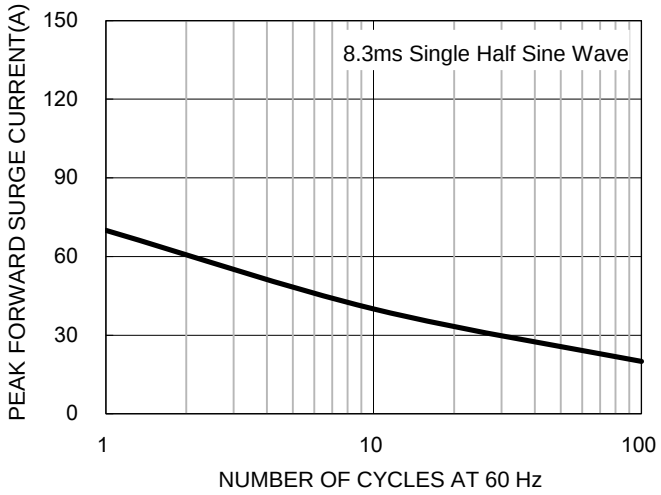
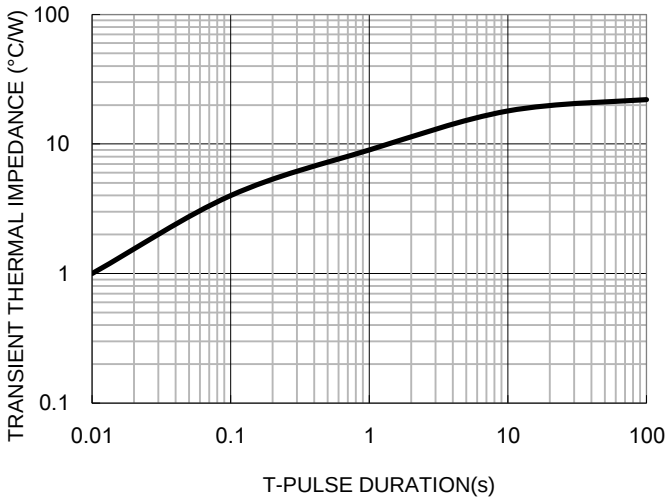
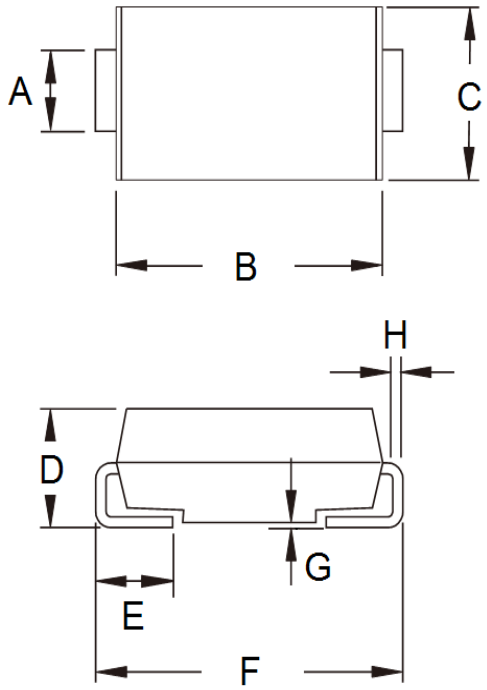


Fig.6 Typical Transient Thermal Characteristics



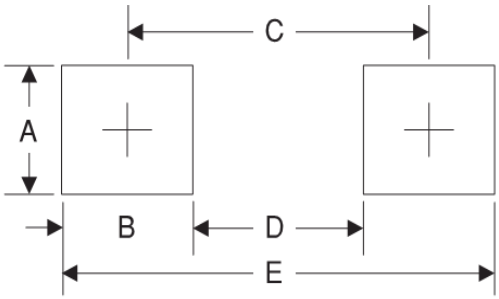
PACKAGE OUTLINE DIMENSIONS

DO-214AA (SMB)



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.95	2.20	0.077	0.087
B	4.05	4.60	0.159	0.181
C	3.30	3.95	0.130	0.156
D	1.95	2.65	0.077	0.104
E	0.75	1.60	0.030	0.063
F	5.10	5.60	0.201	0.220
G	0.05	0.20	0.002	0.008
H	0.15	0.31	0.006	0.012

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	2.3	0.091
B	2.5	0.098
C	4.3	0.169
D	1.8	0.071
E	6.8	0.268

MARKING DIAGRAM

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.