1A, 20V - 150V Schottky Barrier Surface Mount Rectifier

FEATURES

- 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-214AA (SMB)
- 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: 0.093g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	1	A
V_{RRM}	20 - 150	V
I_{FSM}	30	A
$T_{J\ MAX}$	125, 150	°C
Package	DO-214AA (SMB)	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

DO-214AA (SMB)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)										
PARAMETER	**SYMBOL**	**SK 12B**	**SK 13B**	**SK 14B**	**SK 15B**	**SK 16B**	**SK 19B**	**SK 110B**	**SK 115B**	**UNIT**
Marking code on the device		SK 12B	SK 13B	SK 14B	SK 15B	SK 16B	SK 19B	SK 110B	SK 115B	
Repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	90	100	150	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	35	42	63	70	105	V
Forward current	I_F	1								A
Surge peak forward current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	30								A
Critical rate of rise of off-state voltage	dV/dt	10,000								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	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\Theta JL}$	25	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage(1)	SK12B SK13B SK14B	I_F = 1A, T_J = 25°C	V_F	-	0.50	V
	SK15B SK16B			-	0.75	V
	SK19B SK110B			-	0.85	V
	SK115B			-	0.95	V
Reverse current @ rated V_R(2)	SK12B SK13B SK14B SK15B SK16B	T_J = 25°C	I_R	-	500	μA
	SK19B SK110B SK115B			-	100	μA
Reverse current @ rated V_R(2)	SK12B SK13B SK14B	T_J = 100°C	I_R	-	10	mA
	SK15B SK16B			-	5	mA
	SK19B SK110B SK115B			-	-	mA
Reverse current @ rated V_R(2)	SK12B SK13B SK14B	T_J = 125°C	I_R	-	-	mA
	SK15B SK16B			-	-	mA
	SK19B SK110B SK115B			-	2	mA

Notes:

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

ORDERING INFORMATION

ORDERING CODE(1)	PACKAGE	PACKING
SK1xB	DO-214AA (SMB)	3,000 / Tape & Reel

Notes:

1. "x" defines voltage from 20V(SK12B) to 150V(SK115B)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

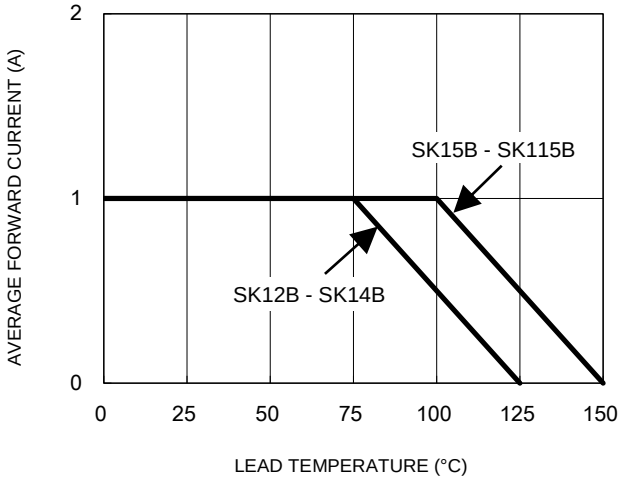


Fig.2 Typical Junction Capacitance

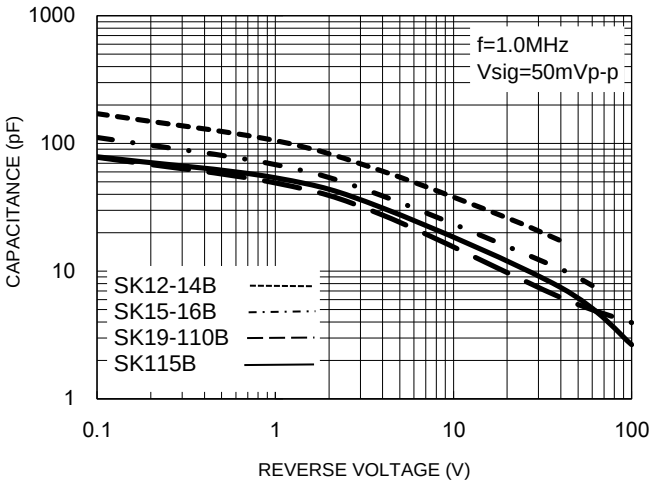


Fig.3 Typical Reverse Characteristics

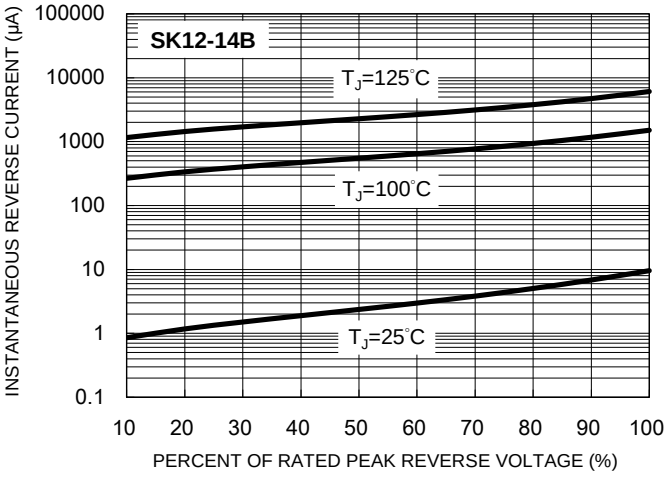


Fig.4 Typical Forward Characteristics

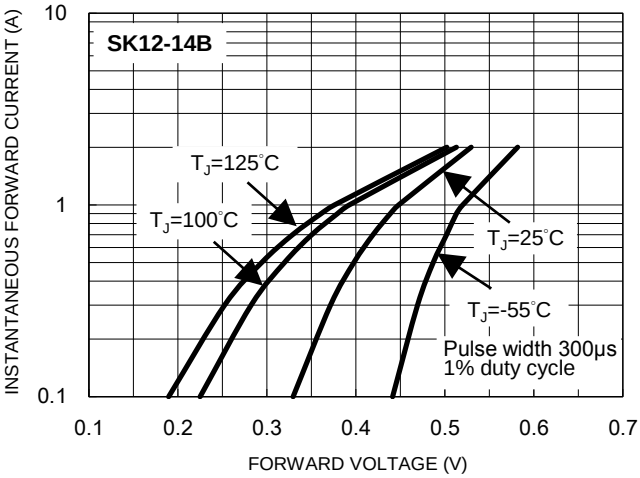


Fig.5 Typical Reverse Characteristics

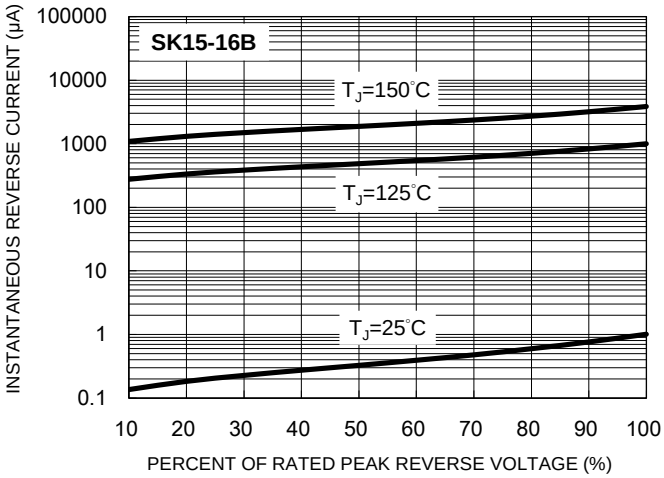
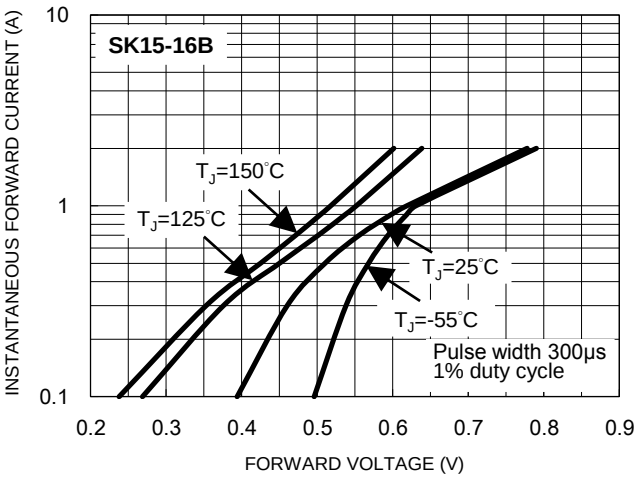


Fig.6 Typical Forward Characteristics



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.7 Typical Reverse Characteristics

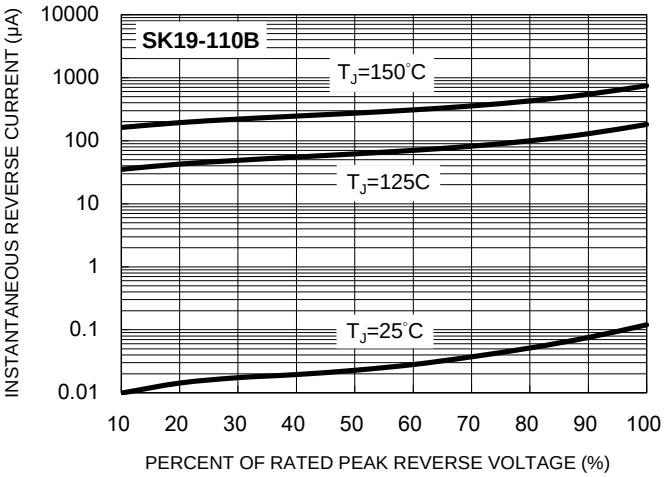


Fig.8 Typical Forward Characteristics

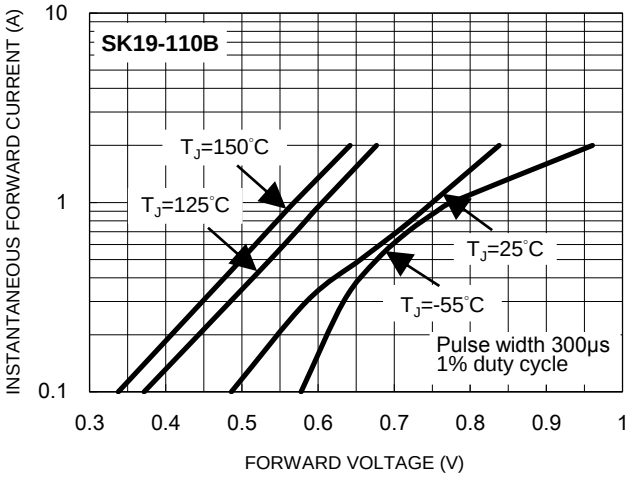


Fig.9 Typical Reverse Characteristics

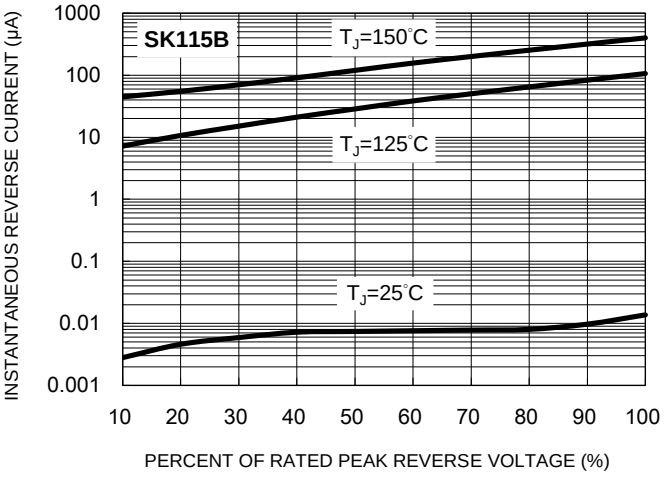


Fig.10 Typical Forward Characteristics

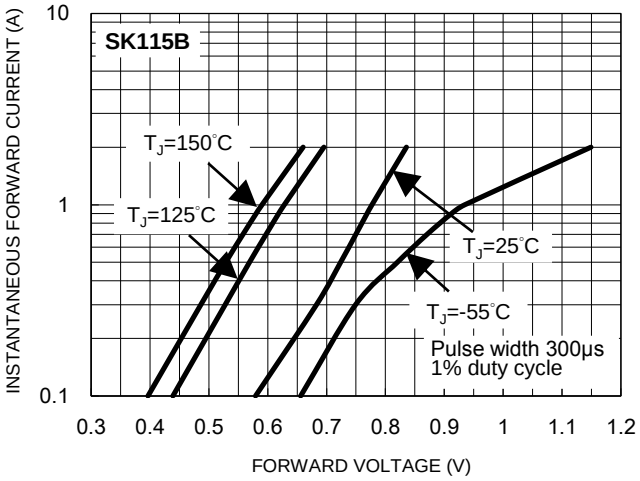
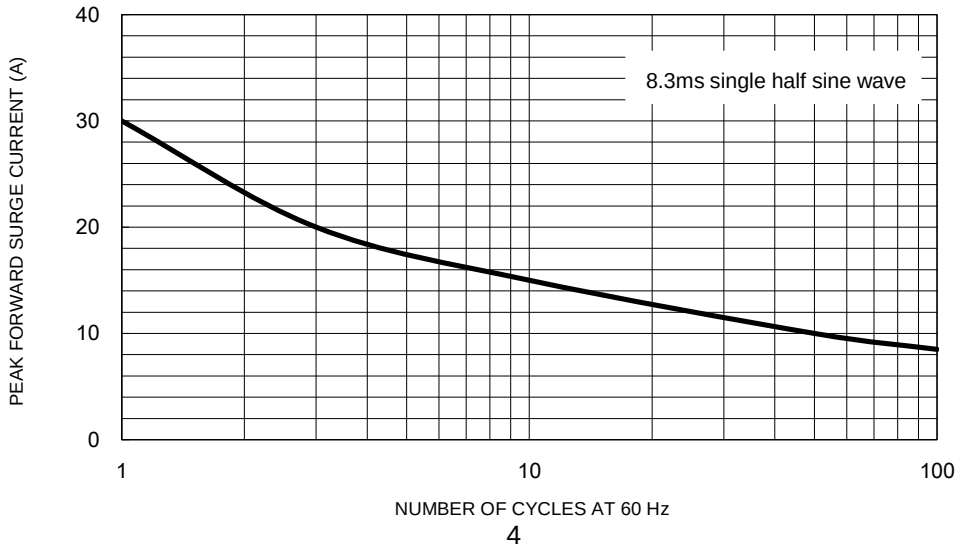


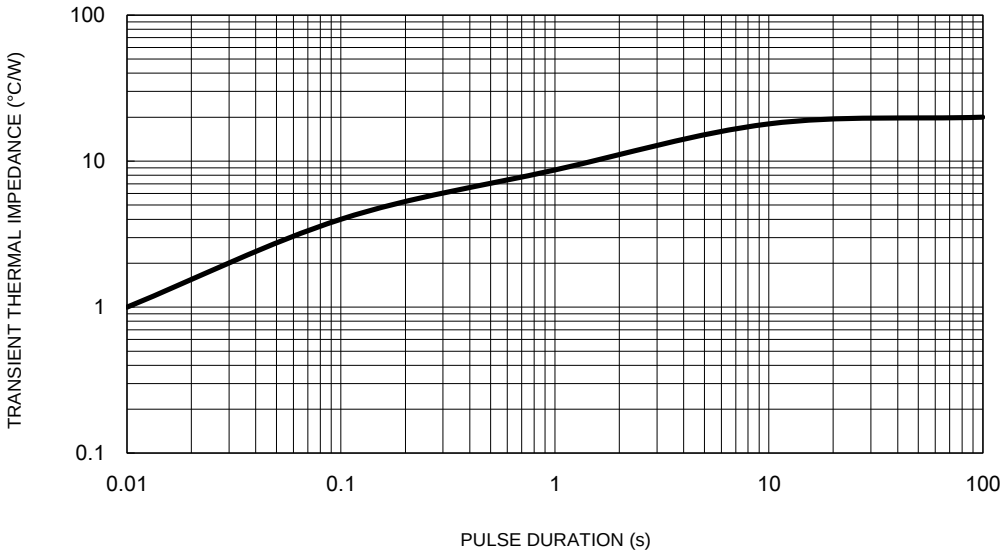
Fig.11 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

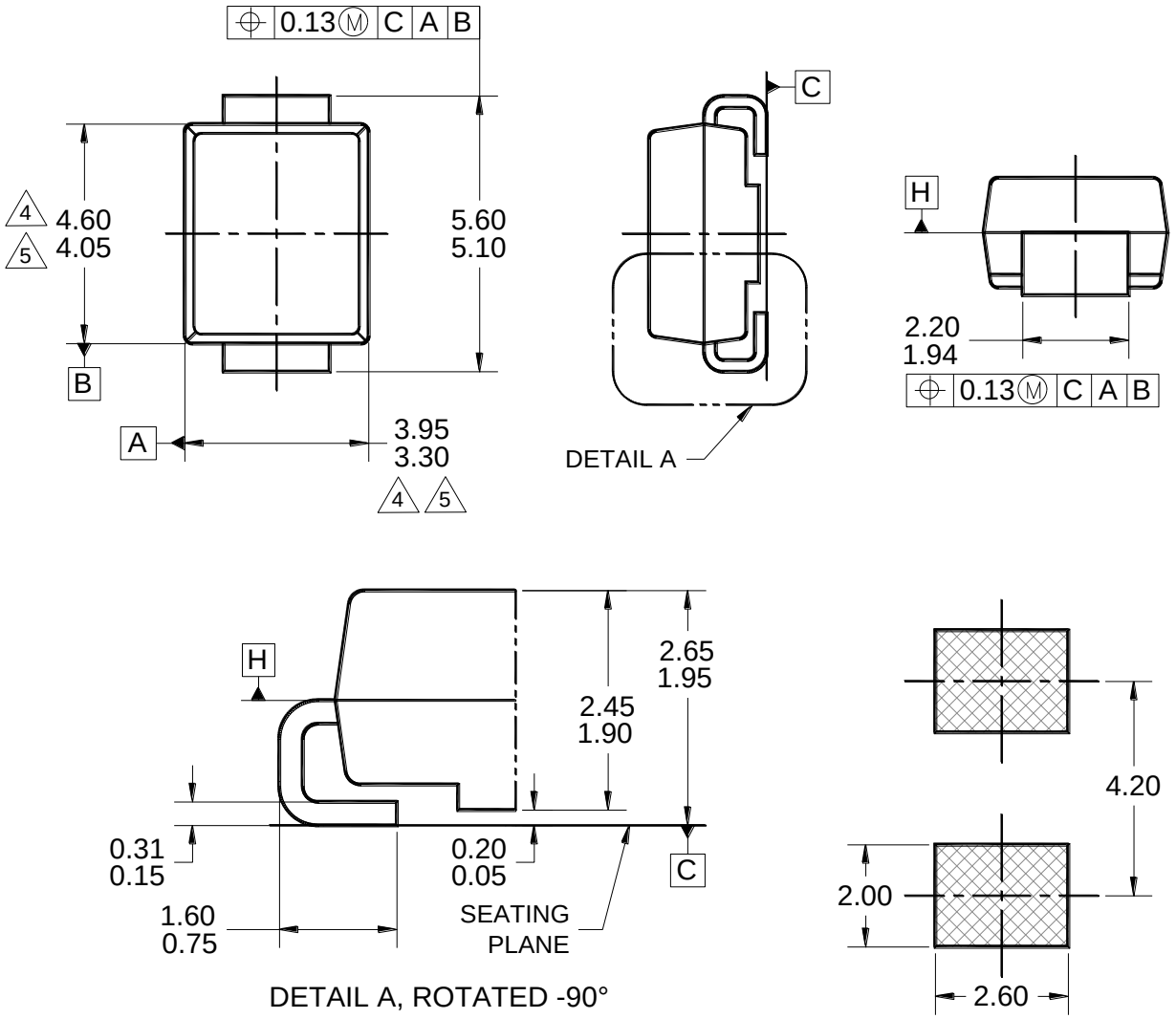
(T_A = 25°C unless otherwise noted)

Fig.12 Typical Transient Thermal Characteristics



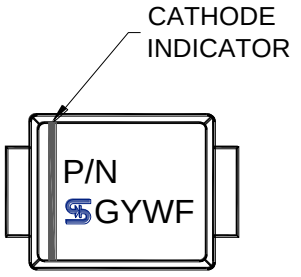
PACKAGE OUTLINE DIMENSIONS

DO-214AA (SMB)



DETAIL A, ROTATED -90°
(SCALE 2:1)

SUGGESTED PAD LAYOUT



MARKING DIAGRAM

P/N = MARKING CODE
G = GREEN COMPOUND
YW = DATE CODE
F = FACTORY CODE

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-214, VARIATION AA, ISSUE D.
4. MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. MOLDED PLASTIC BODY LATERAL DIMENSIONS TO BE DETERMINED AT DATUM PLANE H.
6. DWG NO. REF: HQ2SD07-DO214SMB-035 REV A.

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