

## 2A, 40V-200V Surface Mount Schottky Barrier Rectifier

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Switch Mode Power Supply
- Adapters
- On board DC/DC 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 1 whisker test
- Polarity: Indicated by cathode band
- Weight: 93mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	2	A
$V_{RRM}$	40-200	V
$I_{FSM}$	50	A
$T_{J\ MAX}$	125,150	°C
Package	DO-214AA (SMB)	



DO-214AA (SMB)



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	SYMBOL	SK24 B-T	SK26 B-T	SK210 B-T	SK215 B-T	SK220 B-T	UNIT
Marking code on the device		SK24B	SK26B	SK210B	SK215B	SK220B	
Repetitive peak reverse voltage	$V_{RRM}$	40	60	100	150	200	V
Reverse voltage, total rms value	$V_{R(RMS)}$	28	42	70	105	140	V
DC blocking voltage	$V_{DC}$	40	60	100	150	200	V
Forward current	$I_F$	2					A
Surge peak forward current single half sine-wave superimposed on rated load	8.3 ms at $T_A = 25^\circ\text{C}$	50					A
	1.0 ms at $T_A = 25^\circ\text{C}$	120					A
Junction temperature	$T_J$	-55 to +125		-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 per diode	$R_{\theta JL}$	34	°C/W
Junction-to-ambient thermal resistance per diode	$R_{\theta JA}$	86	°C/W
Junction-to-case thermal resistance per diode	$R_{\theta JC}$	34	°C/W

**Thermal Performance Note:** Units mounted on PCB (10mm x 10mm Cu pad test board)

<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>	SK24B-T	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	$V_F$	0.43	-	V
		$I_F = 2\text{A}, T_J = 25^\circ\text{C}$		0.48	0.55	V
		$I_F = 1\text{A}, T_J = 100^\circ\text{C}$		0.33	-	V
		$I_F = 2\text{A}, T_J = 100^\circ\text{C}$		0.43	0.51	V
	SK26B-T	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$		0.50	-	V
		$I_F = 2\text{A}, T_J = 25^\circ\text{C}$		0.59	0.70	V
		$I_F = 1\text{A}, T_J = 100^\circ\text{C}$		0.45	-	V
		$I_F = 2\text{A}, T_J = 100^\circ\text{C}$		0.56	0.67	V
	SK210B-T	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$		0.65	-	V
		$I_F = 2\text{A}, T_J = 25^\circ\text{C}$		0.75	0.85	V
		$I_F = 1\text{A}, T_J = 125^\circ\text{C}$		0.54	-	V
		$I_F = 2\text{A}, T_J = 125^\circ\text{C}$		0.61	0.74	V
	SK215B-T	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$		0.75	-	V
		$I_F = 2\text{A}, T_J = 25^\circ\text{C}$		0.81	0.85	V
		$I_F = 1\text{A}, T_J = 125^\circ\text{C}$		0.60	-	V
		$I_F = 2\text{A}, T_J = 125^\circ\text{C}$		0.67	0.75	V
	SK220B-T	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$		0.78	-	V
		$I_F = 2\text{A}, T_J = 25^\circ\text{C}$		0.83	0.95	V
		$I_F = 1\text{A}, T_J = 125^\circ\text{C}$		0.63	-	V
		$I_F = 2\text{A}, T_J = 125^\circ\text{C}$		0.70	0.84	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	SK24B-T SK26B-T	$T_J = 25^\circ\text{C}$	$I_R$	-	0.5	mA
		$T_J = 100^\circ\text{C}$		-	25	mA
	SK210B-T to SK220B-T	$T_J = 25^\circ\text{C}$		-	0.1	mA
		$T_J = 125^\circ\text{C}$		-	5	mA
Junction capacitance	SK24B-T	1 MHz, $V_R = 4.0\text{V}$	$C_J$	117	-	pF
	SK26B-T			95	-	pF
	SK210B-T			61	-	pF
	SK215B-T			48	-	pF
	SK220B-T			37	-	pF

**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>	<b>PACKAGE</b>	<b>PACKING</b>
SK2XB-T M3G <sup>(1)</sup>	SMB	850 / 7" reel
SK2XB-T M2G <sup>(1)</sup>	SMB	3,000 / 13" reel

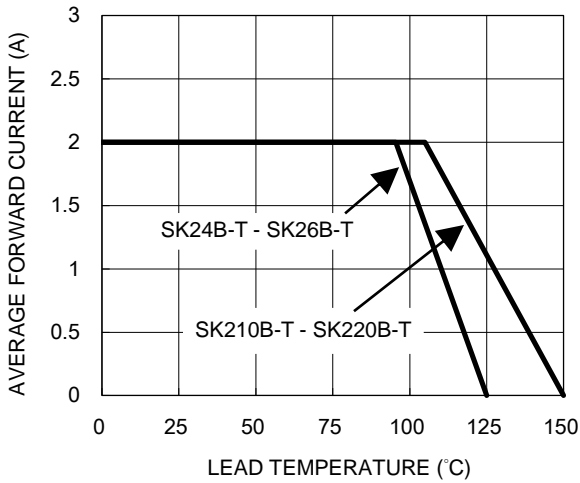
**Notes:**

(1) "X" defines voltage from 40V(SK24B-T) to 200V(SK220B-T)

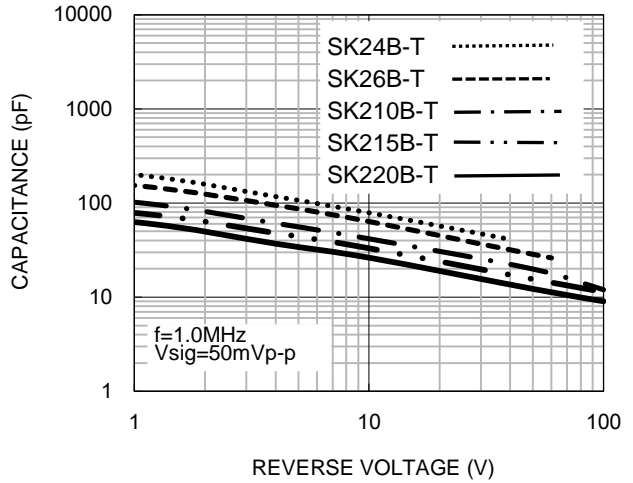
**CHARACTERISTICS CURVES**

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

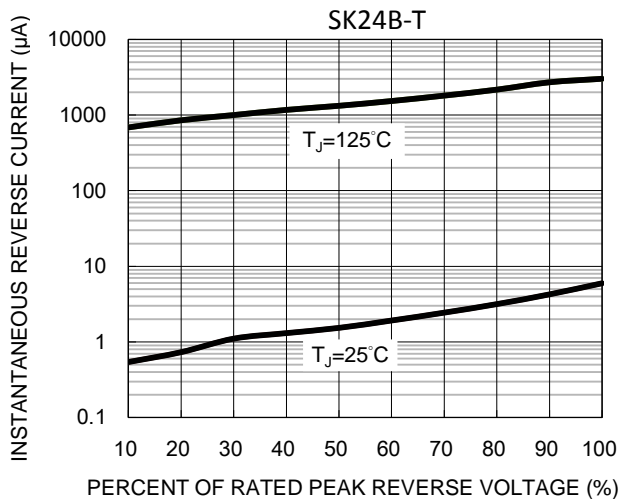
**Fig.1 Forward Current Derating Curve**



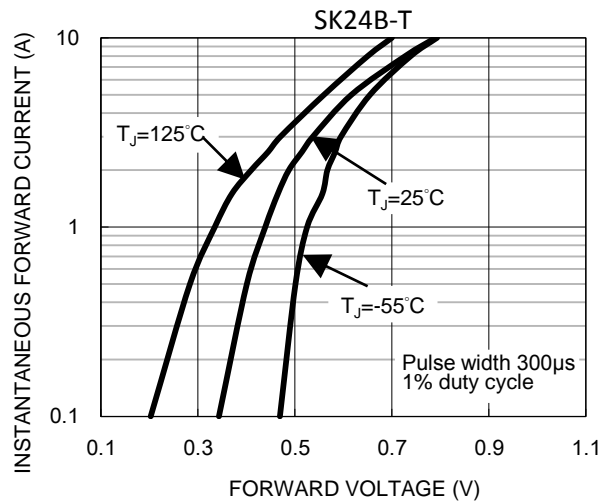
**Fig.2 Typical Junction Capacitance**



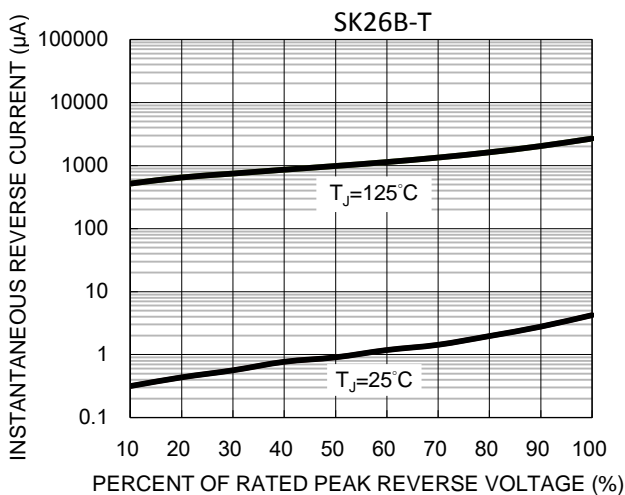
**Fig.3 Typical Reverse Characteristics**



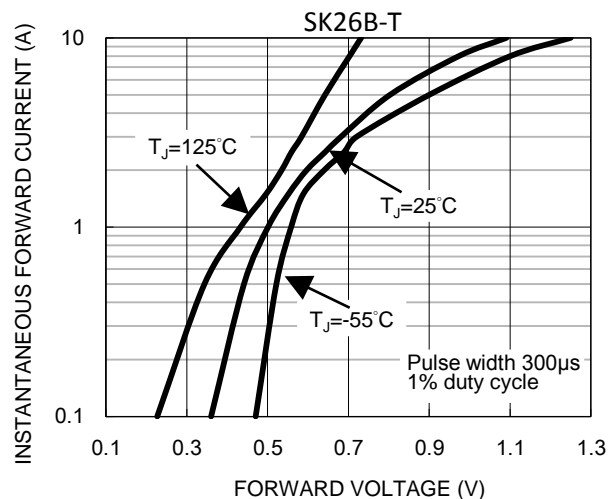
**Fig.4 Typical Forward Characteristics**



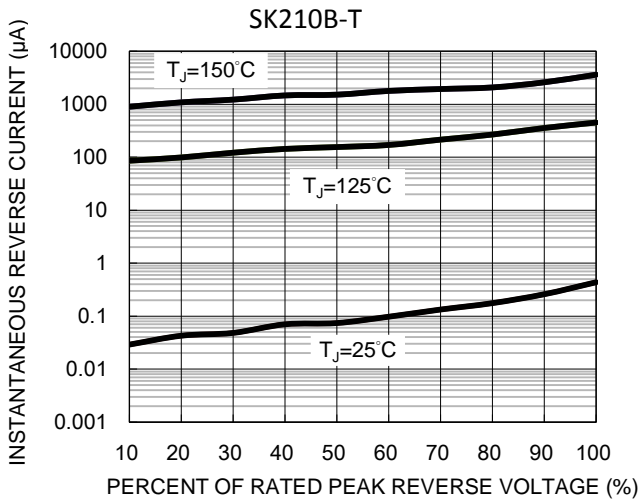
**Fig.5 Typical Reverse Characteristics**



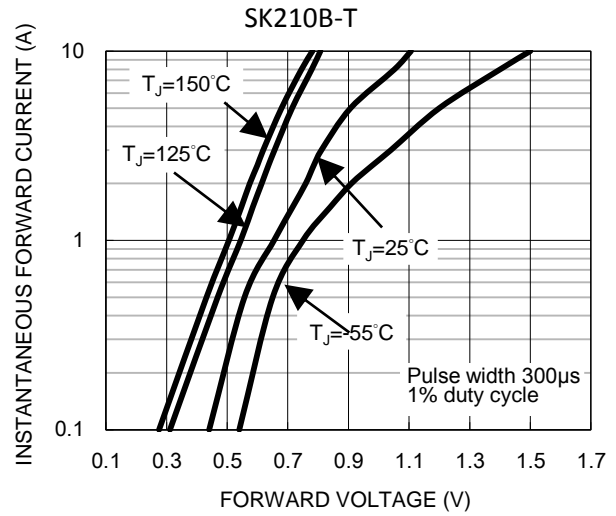
**Fig.6 Typical Forward Characteristics**



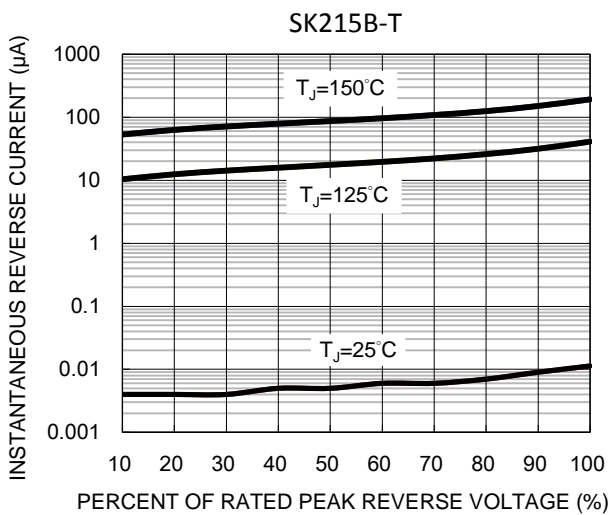
**Fig.7 Typical Reverse Characteristics**



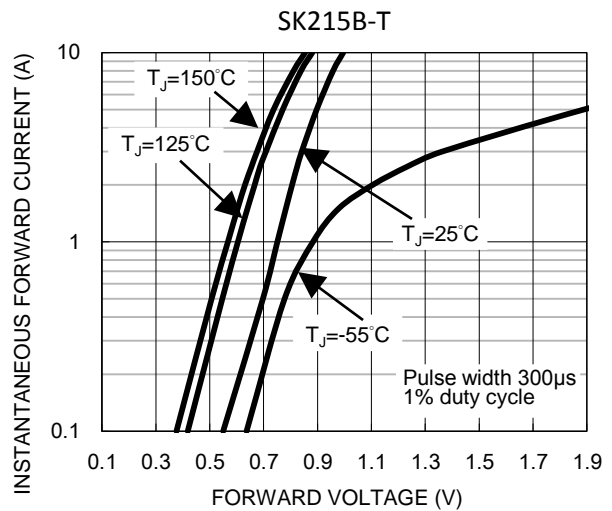
**Fig.8 Typical Forward Characteristics**



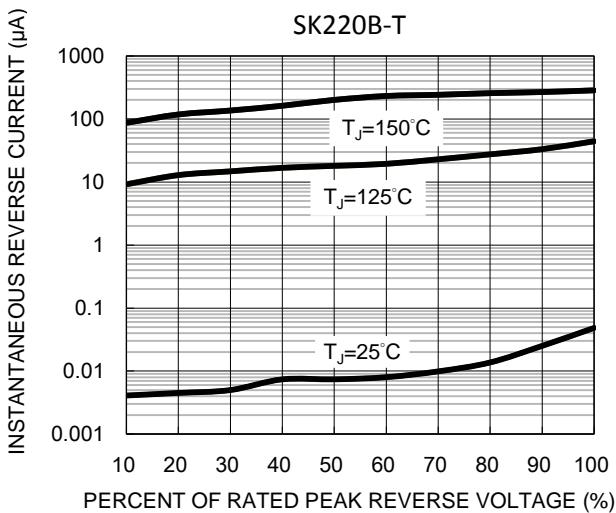
**Fig.9 Typical Reverse Characteristics**



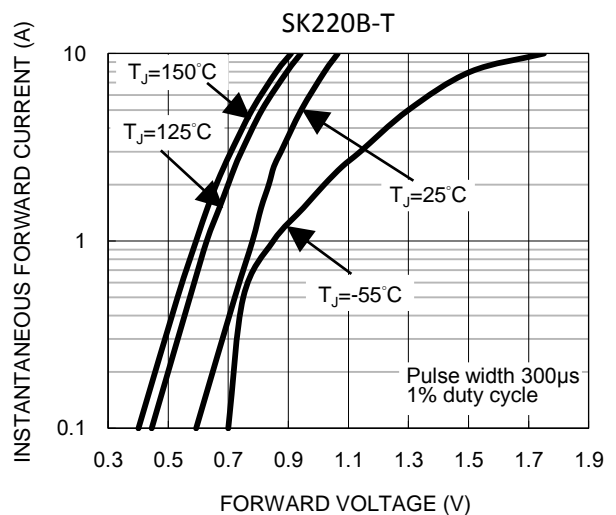
**Fig.10 Typical Forward Characteristics**



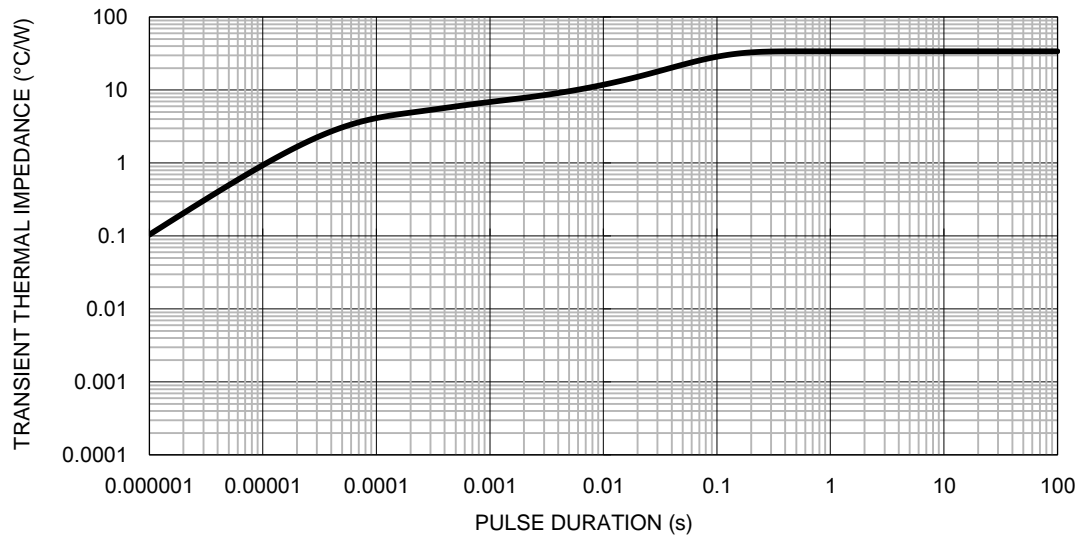
**Fig.11 Typical Reverse Characteristics**



**Fig.12 Typical Forward Characteristics**

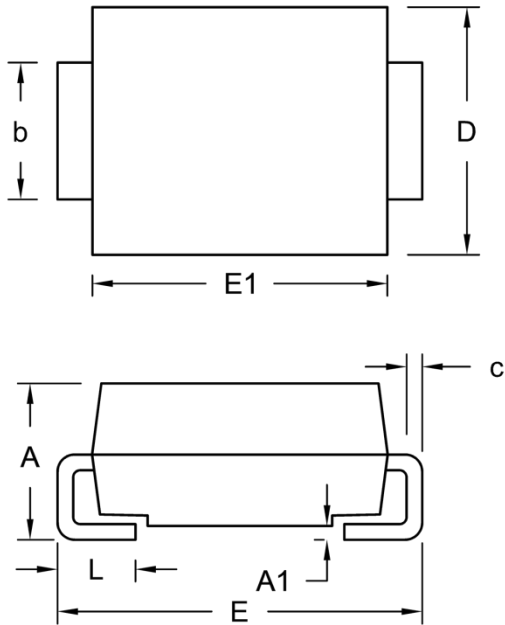


**Fig.13 Typical Transient Thermal Impedance**



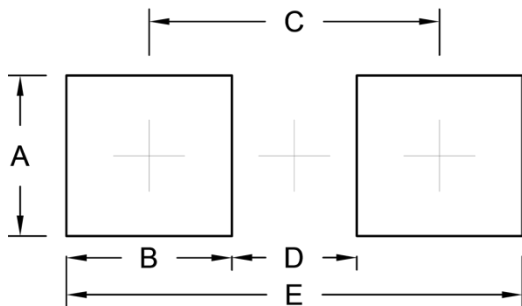
**PACKAGE OUTLINE DIMENSIONS**

DO-214AA (SMB)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	2.13	2.44	0.084	0.096
A1	-	0.203	-	0.008
b	1.80	2.20	0.071	0.087
c	0.152	0.305	0.006	0.012
D	3.30	3.94	0.130	0.155
E	5.08	5.59	0.200	0.220
E1	4.06	4.57	0.160	0.180
L	0.76	1.52	0.030	0.060

**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	2.36	0.093
B	2.44	0.096
C	4.28	0.169
D	1.84	0.072
E	6.72	0.265

**MARKING DIAGRAM**



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

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