

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

### FEATURES

- Low power loss, high efficiency
- 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

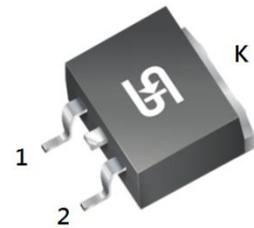
### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- DC to DC converters

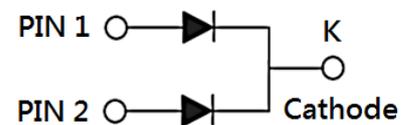
### MECHANICAL DATA

- Case: TO-263AB (D<sup>2</sup>PAK)
- 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: As marked
- Weight: 1.37g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	20	A
$V_{RRM}$	20 - 150	V
$I_{FSM}$	200	A
$T_{JMAX}$	125, 150	°C
Package	TO-263AB (D <sup>2</sup> PAK)	
Configuration	Dual dies	



TO-263AB (D<sup>2</sup>PAK)



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	SRS 2020	SRS 2030	SRS 2040	SRS 2050	SRS 2060	SRS 2090	SRS 20100	SRS 20150	UNIT
Marking code on the device		SRS 2020	SRS 2030	SRS 2040	SRS 2050	SRS 2060	SRS 2090	SRS 20100	SRS 20150	
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	$I_F$	20								A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	200								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-case thermal resistance	$R_{\theta JC}$	1.5	°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 per diode <sup>(1)</sup>	SRS2020 SRS2030 SRS2040	$I_F = 10\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	0.55	V
	SRS2050 SRS2060			-	0.70	V
	SRS2090 SRS20100			-	0.92	V
	SRS20150			-	1.02	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	SRS2020 SRS2030 SRS2040 SRS2050 SRS2060	$T_J = 25^\circ\text{C}$	$I_R$	-	500	$\mu\text{A}$
	SRS2090 SRS20100 SRS20150			-	100	$\mu\text{A}$
	SRS2020 SRS2030 SRS2040	$T_J = 100^\circ\text{C}$		-	15	mA
	SRS2050 SRS2060			-	10	mA
	SRS2090 SRS20100 SRS20150			-	-	mA
	SRS2020 SRS2030 SRS2040 SRS2050 SRS2060			$T_J = 125^\circ\text{C}$	-	-
	SRS2090 SRS20100 SRS20150	-			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<sup>(1)</sup></b>	<b>PACKAGE</b>	<b>PACKING</b>
SRS20x	TO-263AB (D <sup>2</sup> PAK)	800 / Tape & Reel

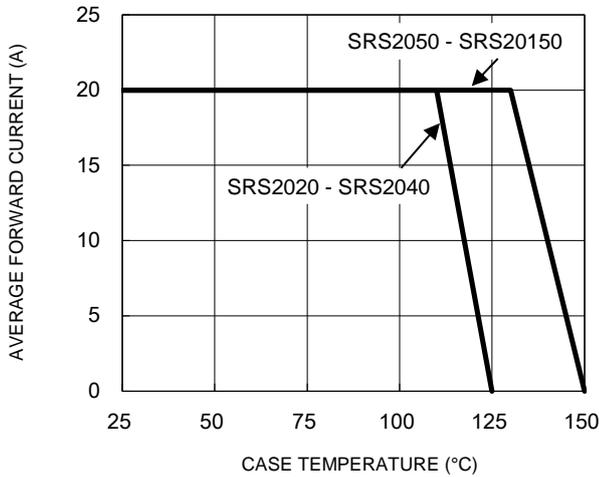
**Notes:**

1. "x" defines voltage from 20V(SRS2020) to 150V(SRS20150)

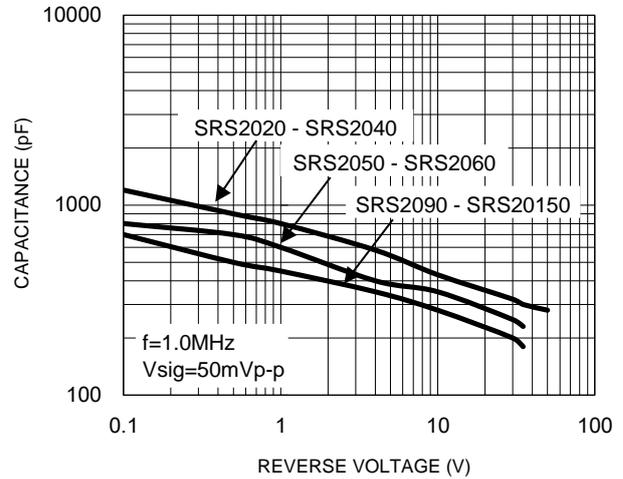
**CHARACTERISTICS CURVES**

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

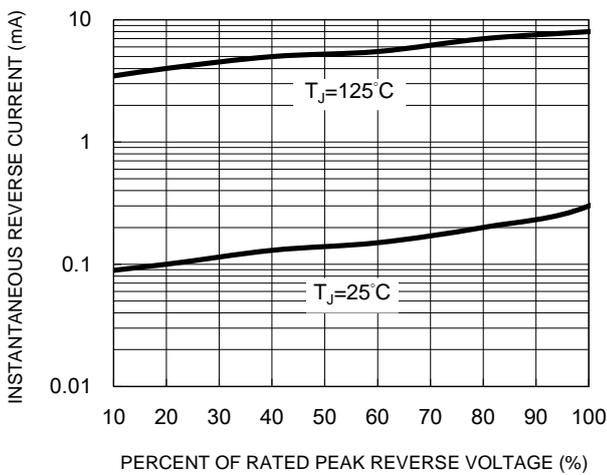
**Fig.1 Forward Current Derating Curve**



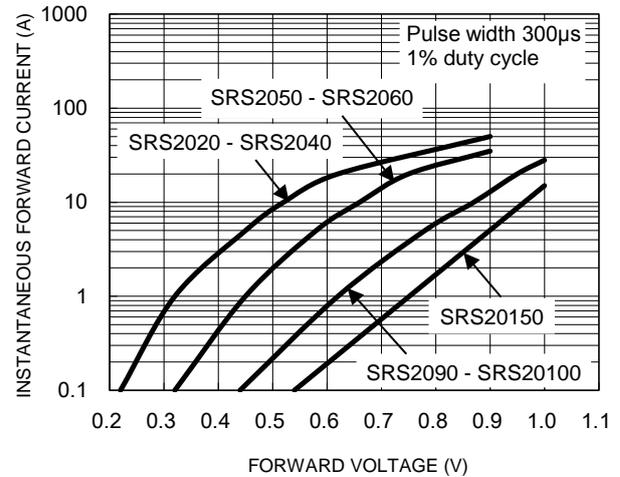
**Fig.2 Typical Junction Capacitance**



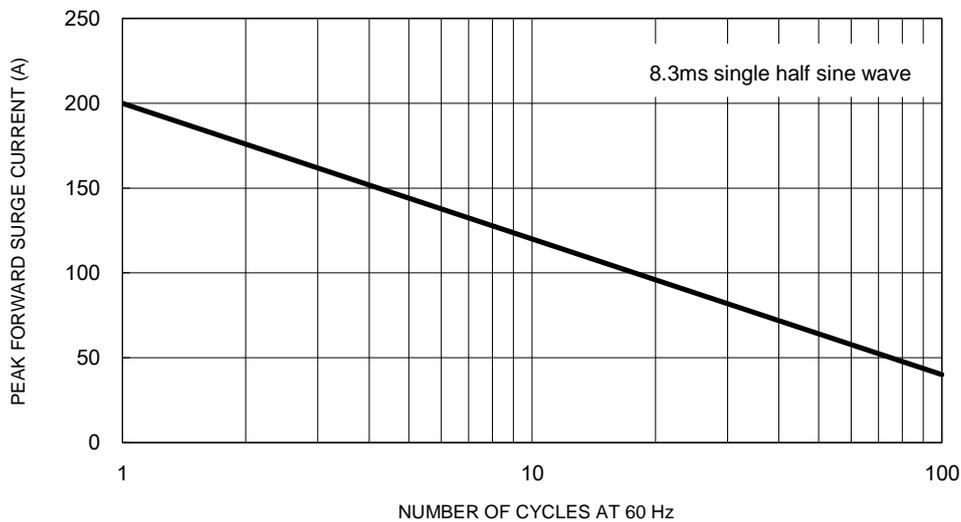
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



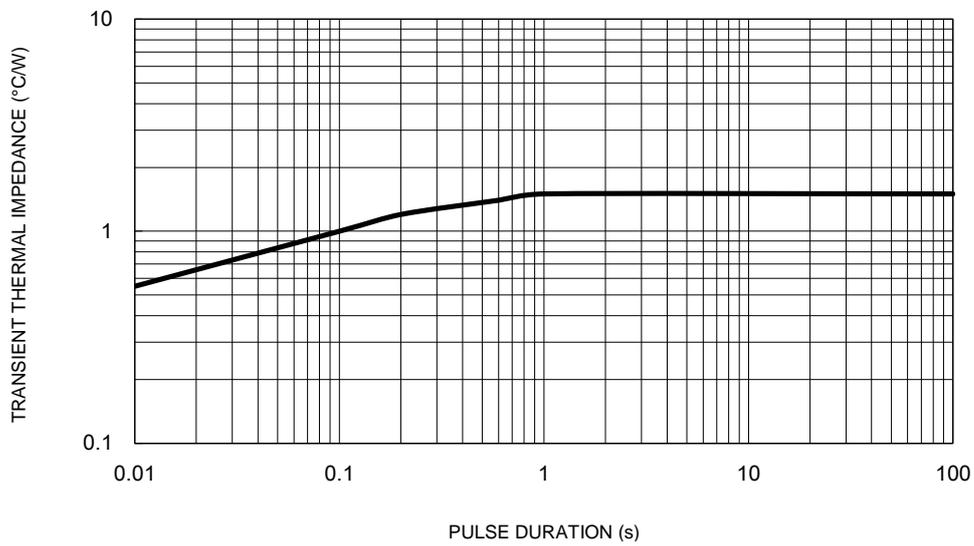
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



**CHARACTERISTICS CURVES**

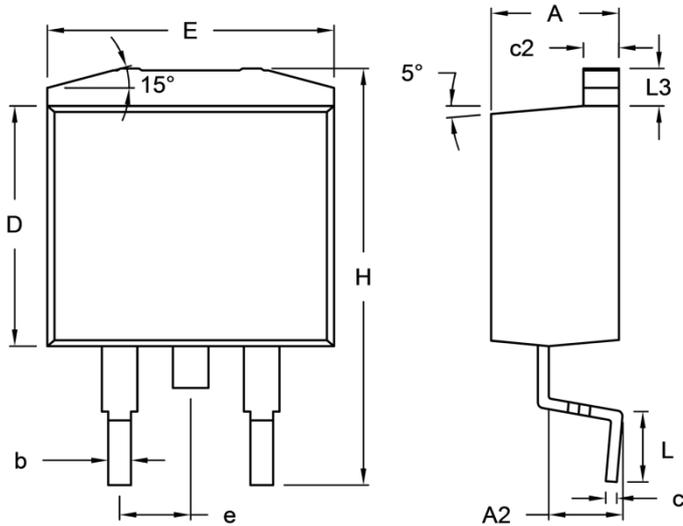
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.6 Typical Transient Thermal Impedance**



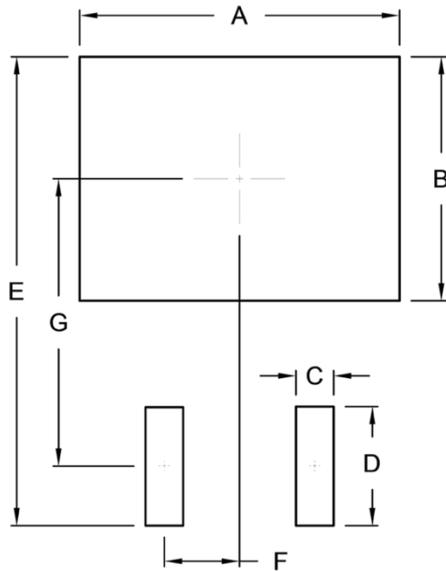
**PACKAGE OUTLINE DIMENSIONS**

TO-263AB (D<sup>2</sup>PAK)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.44	4.70	0.175	0.185
A2	2.03	2.79	0.080	0.110
b	0.68	0.94	0.027	0.037
c	0.36	0.53	0.014	0.021
c2	1.14	1.40	0.045	0.055
D	8.25	9.25	0.325	0.364
E	-	10.50	-	0.413
e	2.41	2.67	0.095	0.105
H	14.60	15.88	0.575	0.625
L	2.29	2.79	0.090	0.110
L3	1.14	1.40	0.045	0.055

**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	10.80	0.425
B	8.30	0.327
C	1.27	0.050
D	4.05	0.159
E	15.95	0.628
F	2.54	0.100
G	9.775	0.385

**MARKING DIAGRAM**



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

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