

## 8A, 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

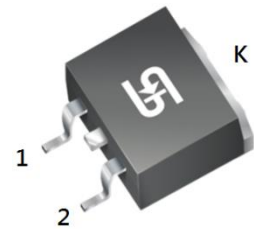
### APPLICATIONS

- 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
$I_F$	8	A
$V_{RRM}$	20 - 150	V
$I_{FSM}$	150	A
$T_{JMAX}$	125, 150	°C
Package	TO-263AB (D <sup>2</sup> PAK)	
Configuration	Single die	


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


ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	SRAS 820	SRAS 830	SRAS 840	SRAS 850	SRAS 860	SRAS 890	SRAS 8100	SRAS 8150	UNIT
Marking code on the device		SRAS 820	SRAS 830	SRAS 840	SRAS 850	SRAS 860	SRAS 890	SRAS 8100	SRAS 8150	
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	$I_F$	8								A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	150								A
Critical rate of rise of off-state voltage	dv/dt	10,000								V/ $\mu\text{s}$
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	$R_{\theta JC}$	3	°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 <sup>(1)</sup>	SRAS820 SRAS830 SRAS840	$I_F = 8\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	0.55	V
	SRAS850 SRAS860			-	0.70	V
	SRAS890 SRAS8100 SRAS8150			-	0.95	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	SRAS820 SRAS830 SRAS840 SRAS850 SRAS860 SRAS890 SRAS8100 SRAS8150	$T_J = 25^\circ\text{C}$	$I_R$	-	100	$\mu\text{A}$
	SRAS820 SRAS830 SRAS840 SRAS850 SRAS860	$T_J = 100^\circ\text{C}$		-	5	mA
	SRAS890 SRAS8100 SRAS8150			-	-	mA
	SRAS820 SRAS830 SRAS840 SRAS850 SRAS860	$T_J = 125^\circ\text{C}$		-	-	mA
	SRAS890 SRAS8100 SRAS8150			-	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>
SRAS8x	TO-263AB (D <sup>2</sup> PAK)	800 / Tape & Reel

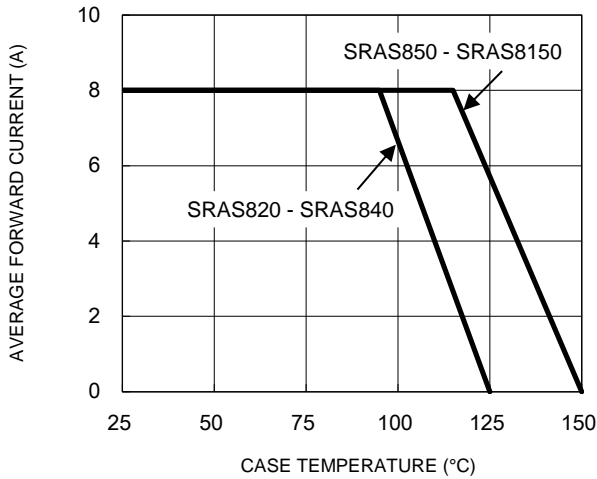
**Notes:**

1. "x" defines voltage from 20V(SRAS820) to 150V(SRAS8150)

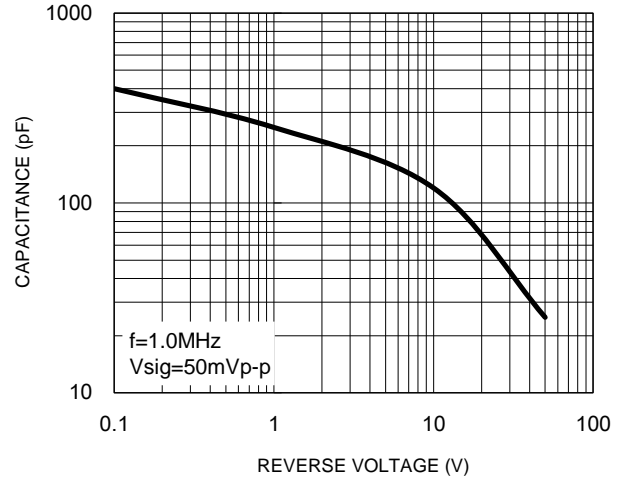
**CHARACTERISTICS CURVES**

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

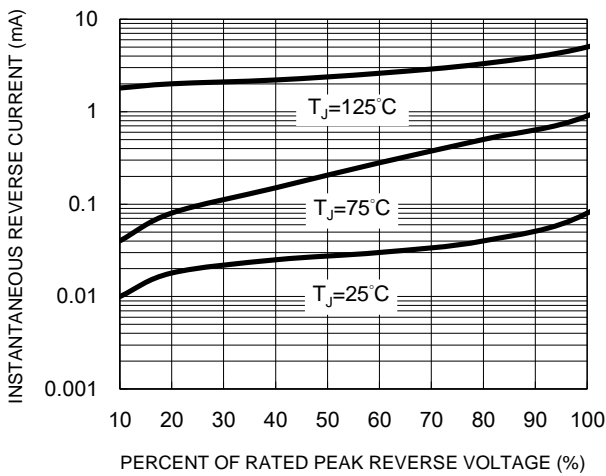
**Fig.1 Forward Current Derating Curve**



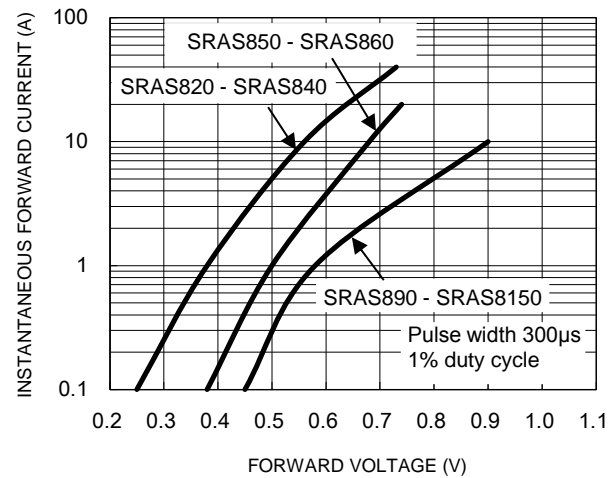
**Fig.2 Typical Junction Capacitance**



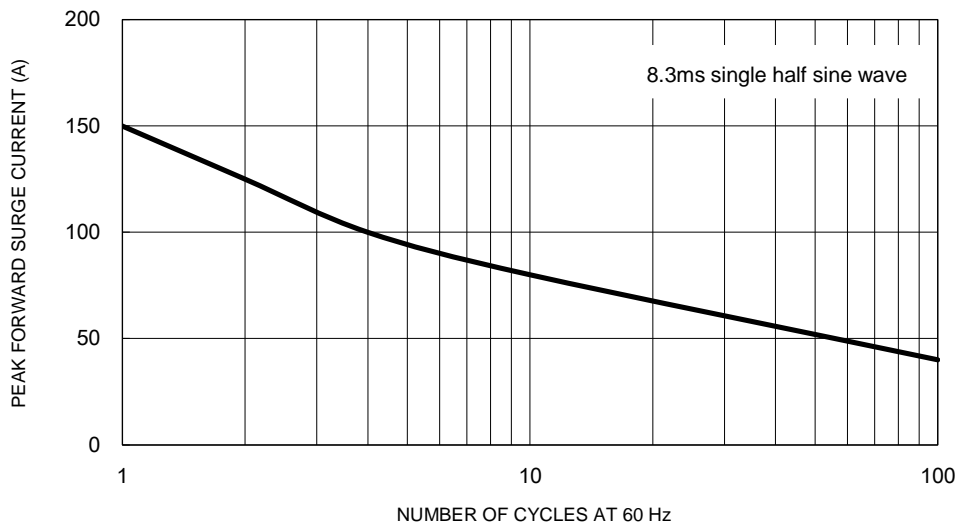
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



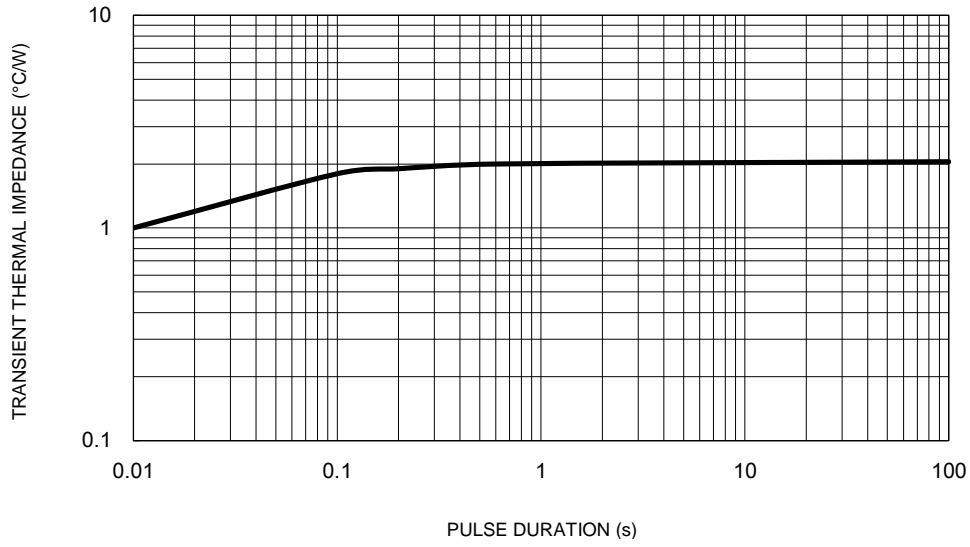
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



**CHARACTERISTICS CURVES**

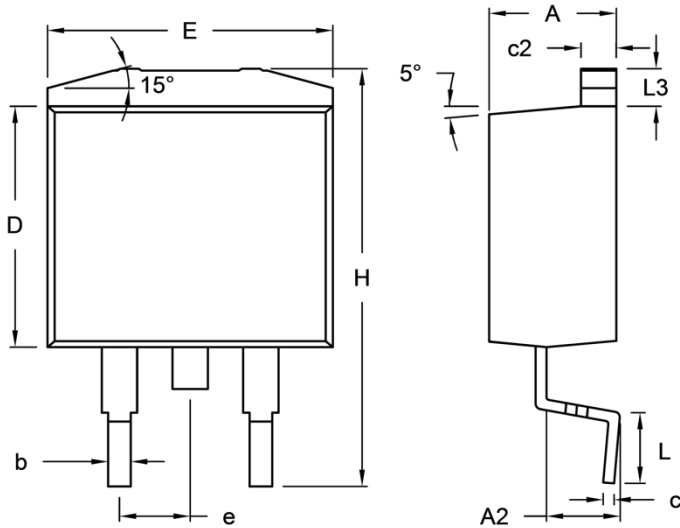
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.6 Typical Transient Thermal Impedance**



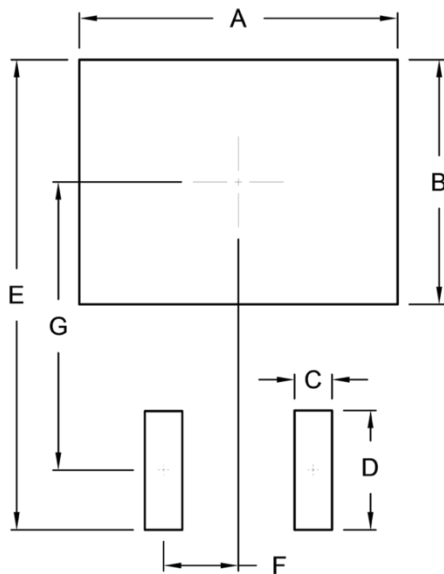
**PACKAGE OUTLINE DIMENSIONS**

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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