

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

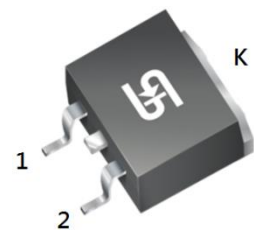
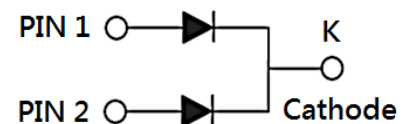
APPLICATIONS

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

MECHANICAL DATA

- Case: TO-263AB (D²PAK)
- 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 ² PAK)	
Configuration	Dual dies	


TO-263AB (D²PAK)


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

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-case thermal resistance	$R_{\theta JC}$	1.5	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT	
Forward voltage per diode ⁽¹⁾	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 ⁽²⁾	SRS2020 SRS2030 SRS2040 SRS2050 SRS2060	$T_J = 25^\circ\text{C}$	I_R	-	500	μA	
	SRS2090 SRS20100 SRS20150	$T_J = 100^\circ\text{C}$		-	100	μA	
	SRS2020 SRS2030 SRS2040			$T_J = 125^\circ\text{C}$	-	15	mA
	SRS2050 SRS2060				-	10	mA
	SRS2090 SRS20100 SRS20150	-			-	mA	
	SRS2020 SRS2030 SRS2040 SRS2050 SRS2060	-			-	mA	
	SRS2090 SRS20100 SRS20150	-			5	mA	

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION		
ORDERING CODE⁽¹⁾	PACKAGE	PACKING
SRS20x	TO-263AB (D ² 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

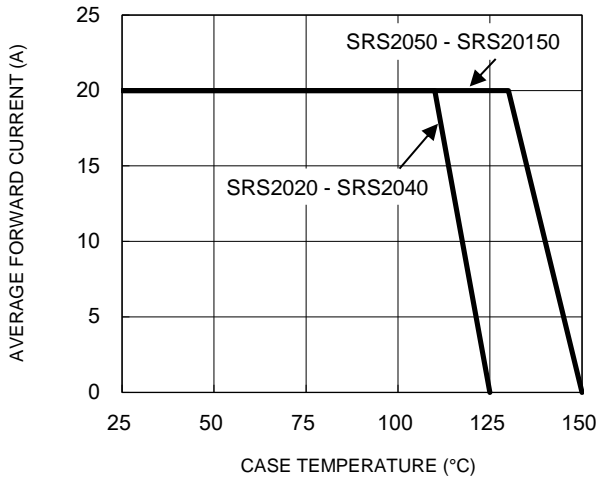


Fig.2 Typical Junction Capacitance

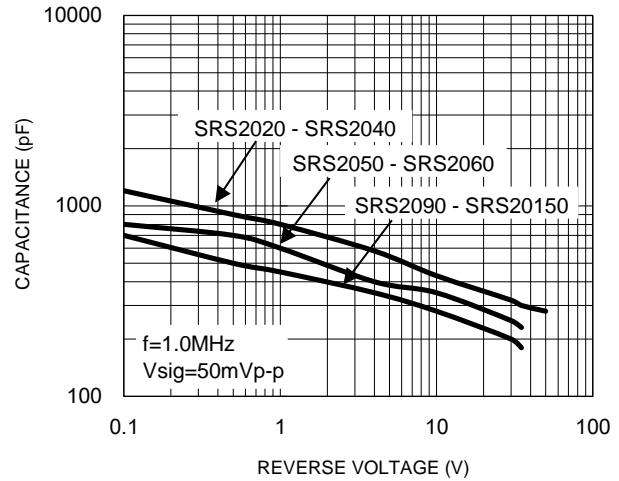


Fig.3 Typical Reverse Characteristics

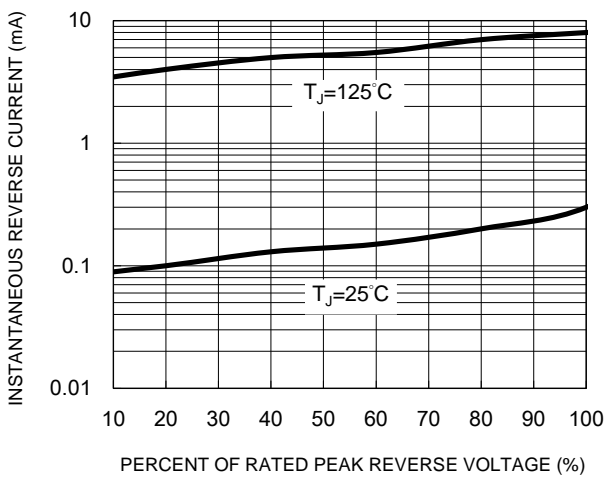


Fig.4 Typical Forward Characteristics

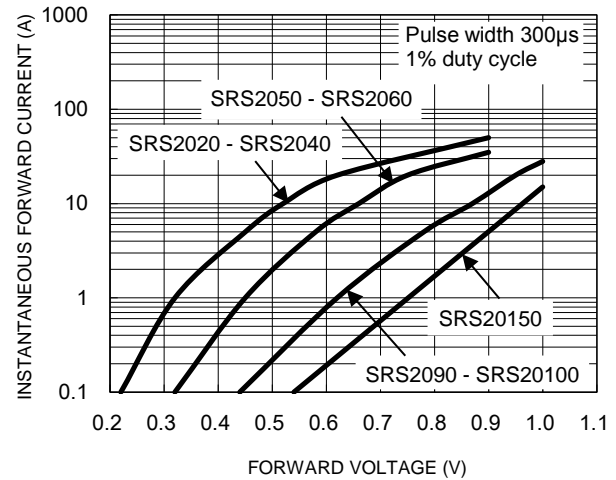
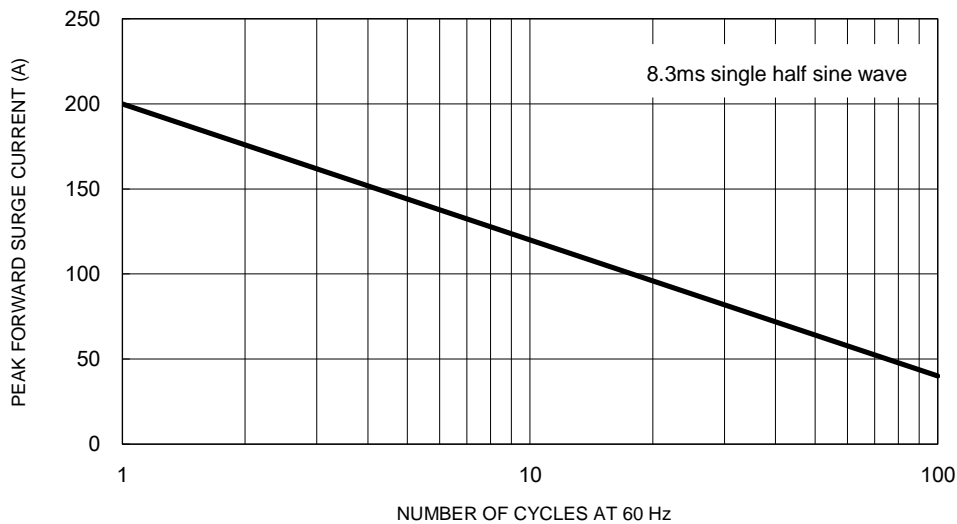


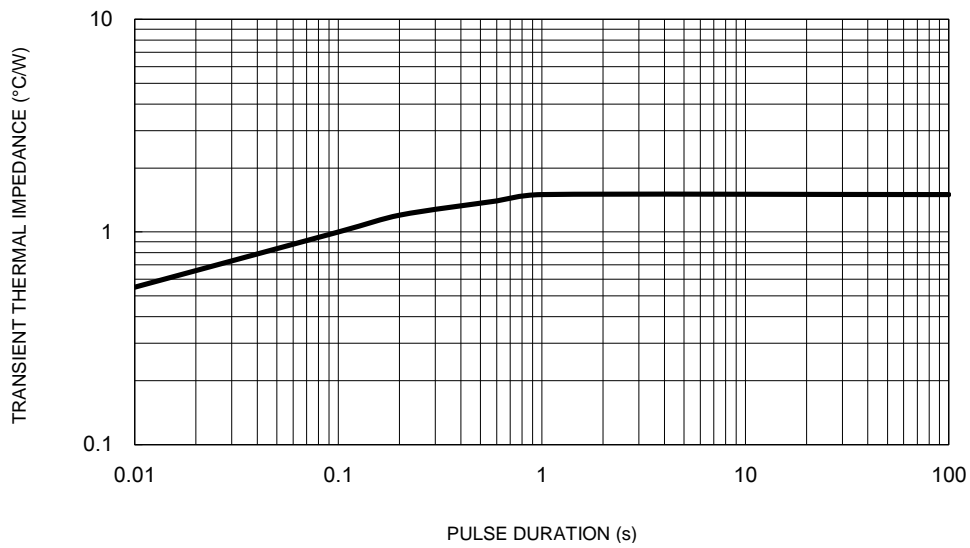
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

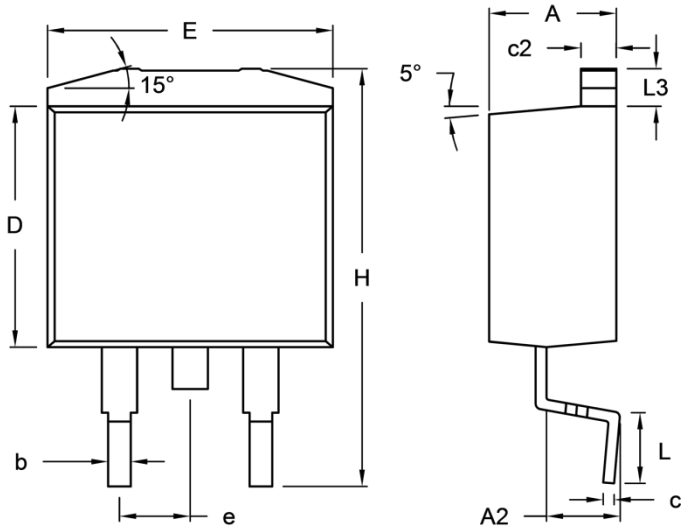
($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.6 Typical Transient Thermal Impedance



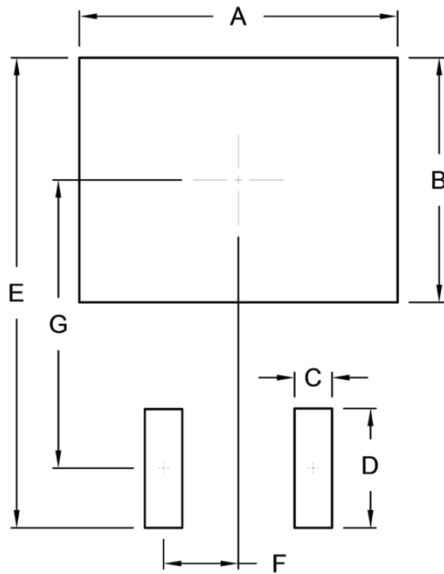
PACKAGE OUTLINE DIMENSIONS

TO-263AB (D²PAK)



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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