

20A, 20V - 150V Schottky Barrier Rectifier

FEATURES

- AEC-Q101 qualified available
- Low power loss, high efficiency
- Guard ring for overvoltage protection
- High surge current capability
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

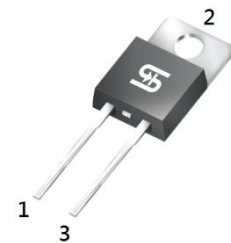
APPLICATIONS

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

MECHANICAL DATA

- Case: TO-220AC
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.90g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	20	A
V_{RRM}	20 - 150	V
I_{FSM}	300	A
T_{JMAX}	125, 150	°C
Package	TO-220AC	
Configuration	Single die	


TO-220AC


ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)											
PARAMETER	SYMBOL	SRA 2020	SRA 2030	SRA 2040	SRA 2050	SRA 2060	SRA 2090	SRA 20100	SRA 20150	UNIT	
Marking code on the device		SRA 2020	SRA 2030	SRA 2040	SRA 2050	SRA 2060	SRA 2090	SRA 20100	SRA 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}	300								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 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 ⁽¹⁾	SRA2020 SRA2030 SRA2040	$I_F = 20\text{A}, T_J = 25^\circ\text{C}$	V_F	-	0.55	V
	SRA2050 SRA2060			-	0.70	V
	SRA2090 SRA20100			-	0.92	V
	SRA20150			-	1.02	V
Reverse current @ rated V_R ⁽²⁾	SRA2020 SRA2030 SRA2040 SRA2050 SRA2060	$T_J = 25^\circ\text{C}$	I_R	-	500	μA
	SRA2090 SRA20100 SRA20150	$T_J = 100^\circ\text{C}$		-	100	μA
	SRA2020 SRA2030 SRA2040			-	15	mA
	SRA2050 SRA2060			-	10	mA
	SRA2090 SRA20100 SRA20150	$T_J = 125^\circ\text{C}$		-	-	mA
	SRA2020 SRA2030 SRA2040 SRA2050 SRA2060			-	-	mA
	SRA2090 SRA20100 SRA20150			-	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⁾⁽²⁾	PACKAGE	PACKING
SRA20x	TO-220AC	50 / Tube
SRA20xH	TO-220AC	50 / Tube

Notes:

1. "x" defines voltage from 20V(SRA2020) to 150V(SRA20150)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

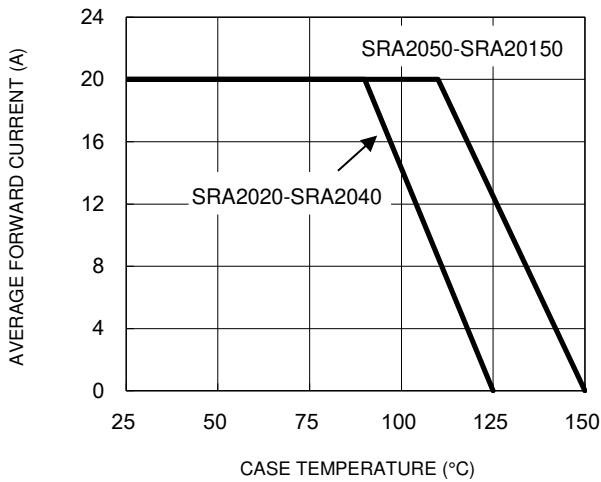


Fig.2 Typical Junction Capacitance

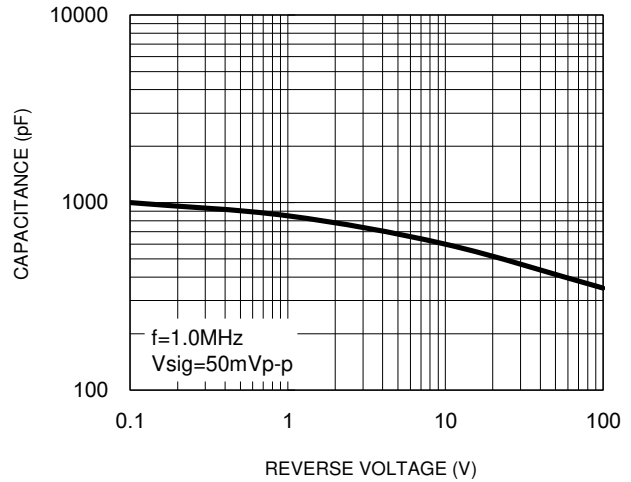


Fig.3 Typical Reverse Characteristics

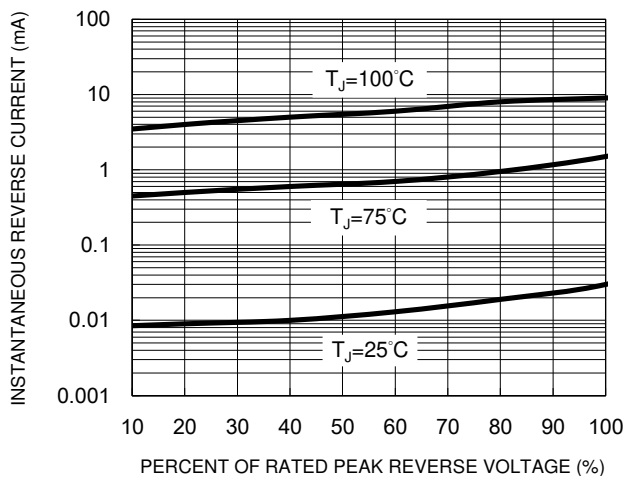


Fig.4 Typical Forward Characteristics

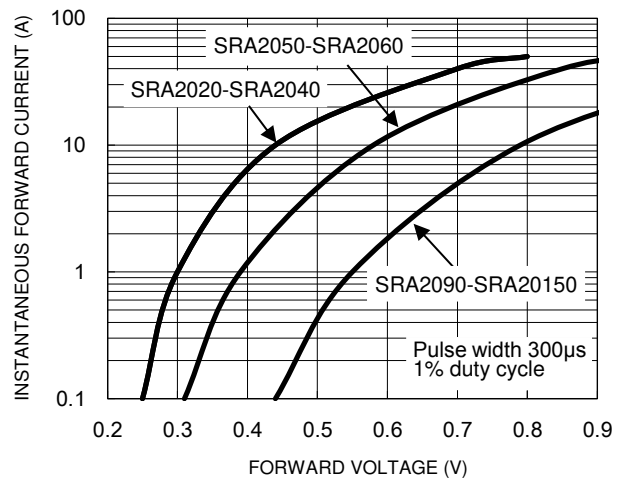
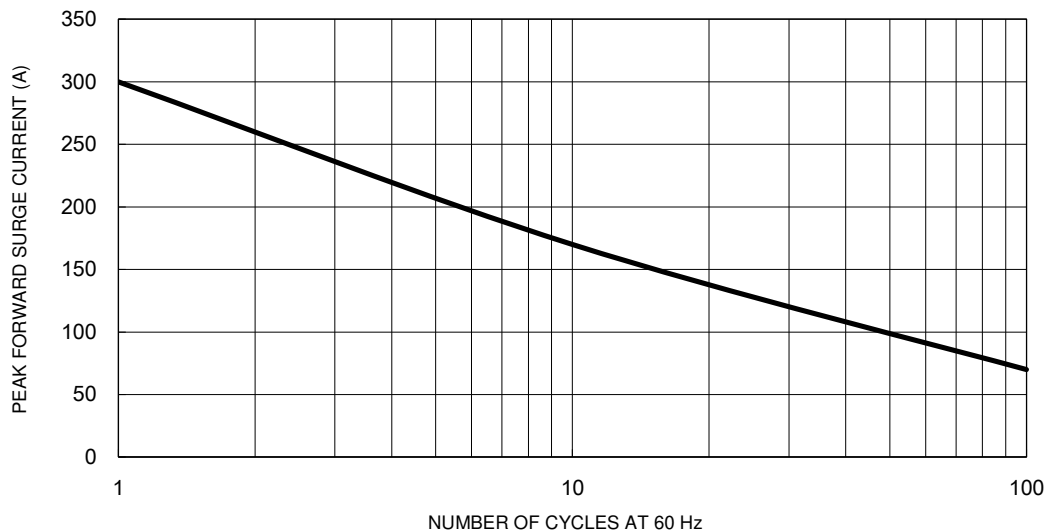


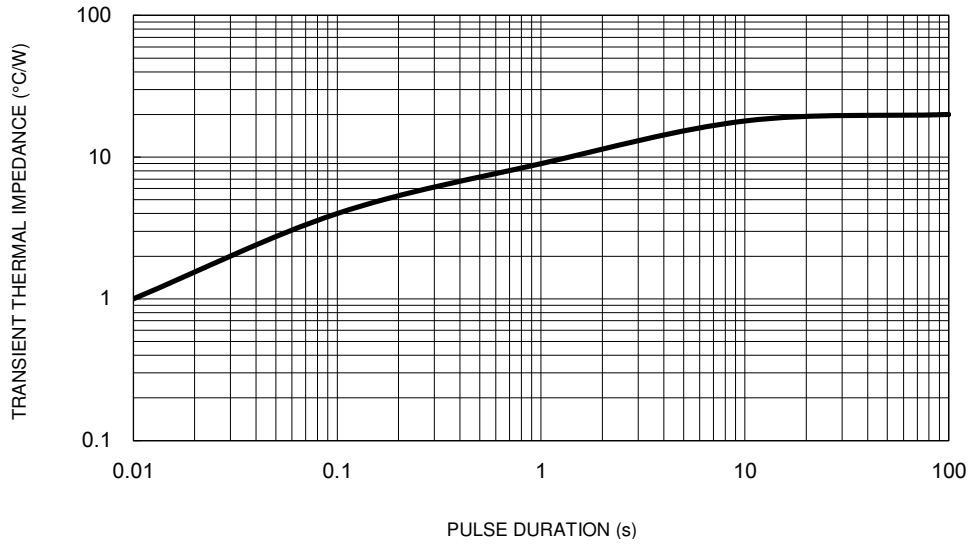
Fig.5 Maximum Non-Repetitive Forward Surge Current



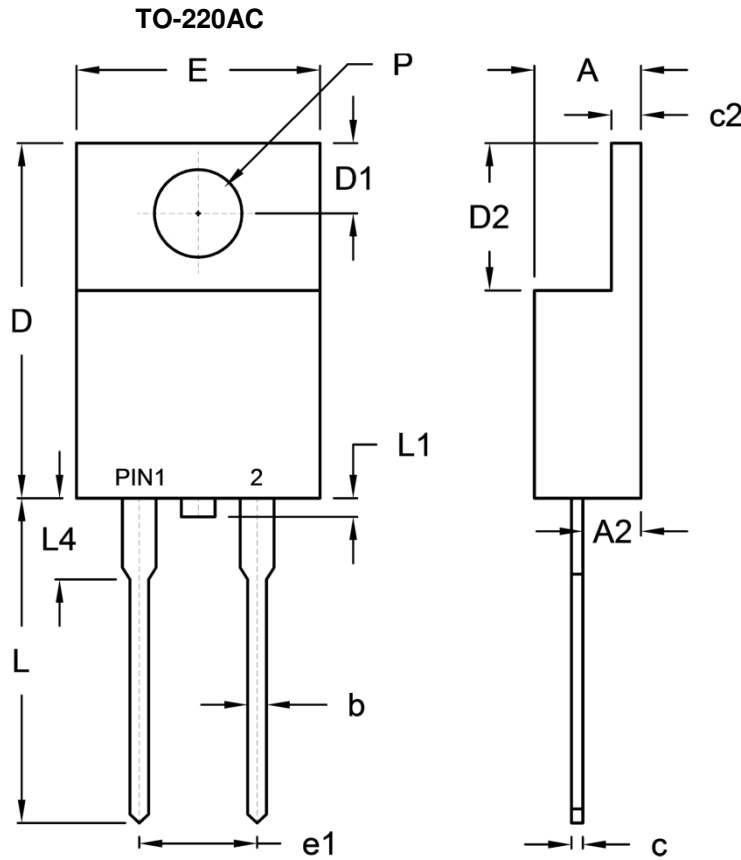
CHARACTERISTICS CURVES

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

Fig.6 Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.42	4.76	0.174	0.187
A2	2.20	2.80	0.087	0.110
b	0.68	0.94	0.027	0.037
c	0.35	0.64	0.014	0.025
c2	1.14	1.40	0.045	0.055
D	14.60	16.00	0.575	0.630
D1	2.62	3.44	0.103	0.135
D2	5.84	6.86	0.230	0.270
E	-	10.50	-	0.413
e1	4.95	5.20	0.195	0.205
L	13.19	14.79	0.519	0.582
L1	0.00	1.60	0.000	0.063
L4	2.80	4.20	0.110	0.165
P	3.54	4.00	0.139	0.157

MARKING DIAGRAM



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

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