

## 10A, 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

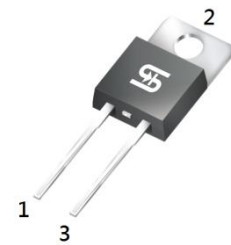
### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- DC to 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: 1.88g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	10	A
$V_{RRM}$	20 - 150	V
$I_{FSM}$	170	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 1020	SRA 1030	SRA 1040	SRA 1050	SRA 1060	SRA 1090	SRA 10100	SRA 10150	UNIT
Marking code on the device		SRA 1020	SRA 1030	SRA 1040	SRA 1050	SRA 1060	SRA 1090	SRA 10100	SRA 10150	
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	$I_F$	10								A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	170								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

**THERMAL PERFORMANCE**

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-case resistance	$R_{\theta JC}$	2	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT	
Forward voltage <sup>(1)</sup>	SRA1020 SRA1030 SRA1040	$I_F = 10\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	0.55	V
	SRA1050 SRA1060			-	0.70	V
	SRA1090 SRA10100			-	0.85	V
	SRA10150			-	0.95	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	SRA1020 SRA1030 SRA1040 SRA1050 SRA1060	$T_J = 25^\circ\text{C}$	$I_R$	-	500	$\mu\text{A}$
	SRA1090 SRA10100 SRA10150	$T_J = 100^\circ\text{C}$		-	100	$\mu\text{A}$
	SRA1020 SRA1030 SRA1040			-	15	mA
	SRA1050 SRA1060	$T_J = 125^\circ\text{C}$		-	10	mA
	SRA1090 SRA10100 SRA10150			-	-	mA
	SRA1020 SRA1030 SRA1040 SRA1050 SRA1060	$T_J = 125^\circ\text{C}$		-	-	mA
	SRA1090 SRA10100 SRA10150			-	5	mA

**Notes:**

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

**ORDERING INFORMATION**

ORDERING CODE <sup>(1)(2)</sup>	PACKAGE	PACKING
SRA10x	TO-220AC	50 / Tube
SRA10xH	TO-220AC	50 / Tube

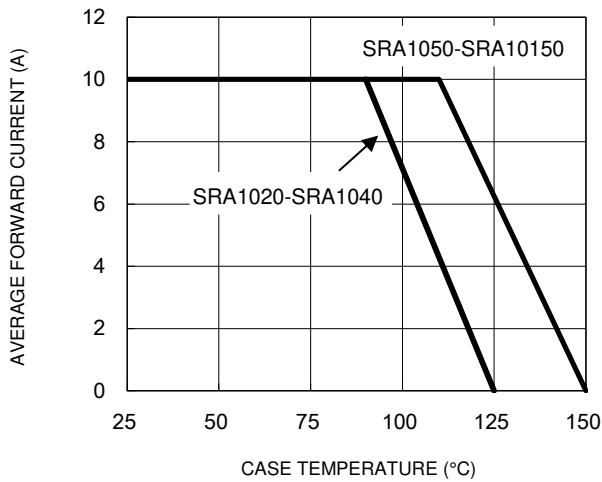
**Notes:**

1. "x" defines voltage from 20V(SRA1020) to 150V(SRA10150)
2. "H" means AEC-Q101 qualified

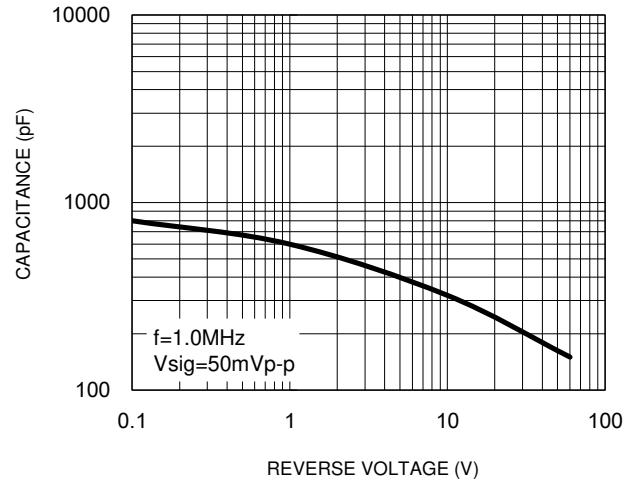
**CHARACTERISTICS CURVES**

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

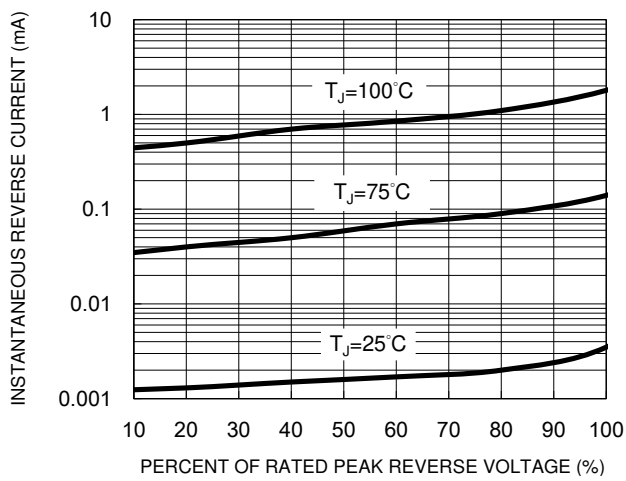
**Fig.1 Forward Current Derating Curve**



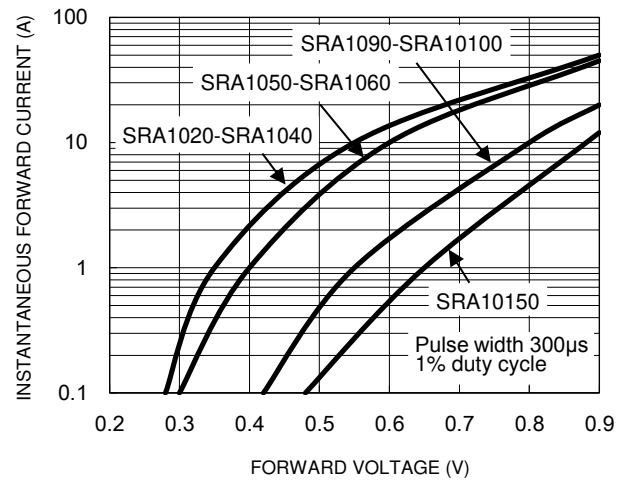
**Fig.2 Typical Junction Capacitance**



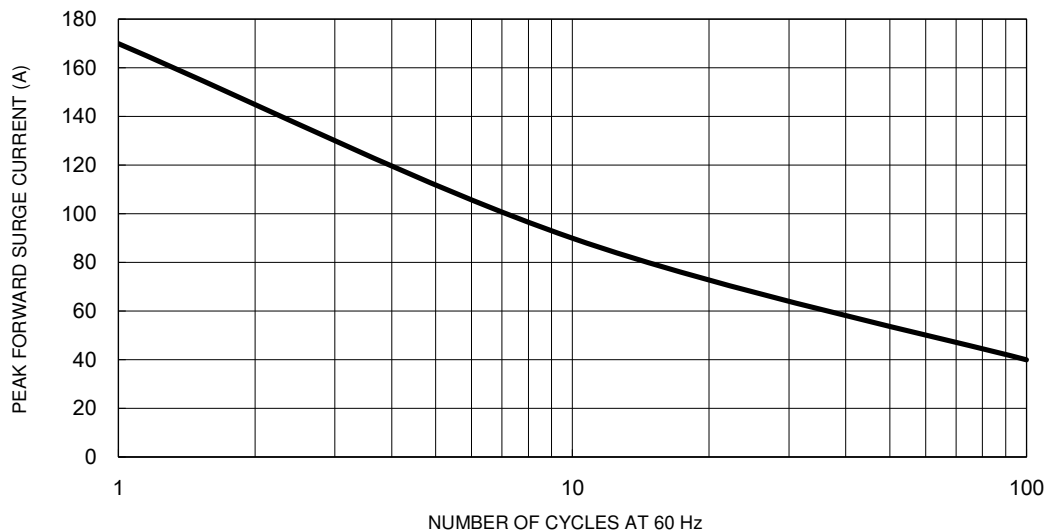
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



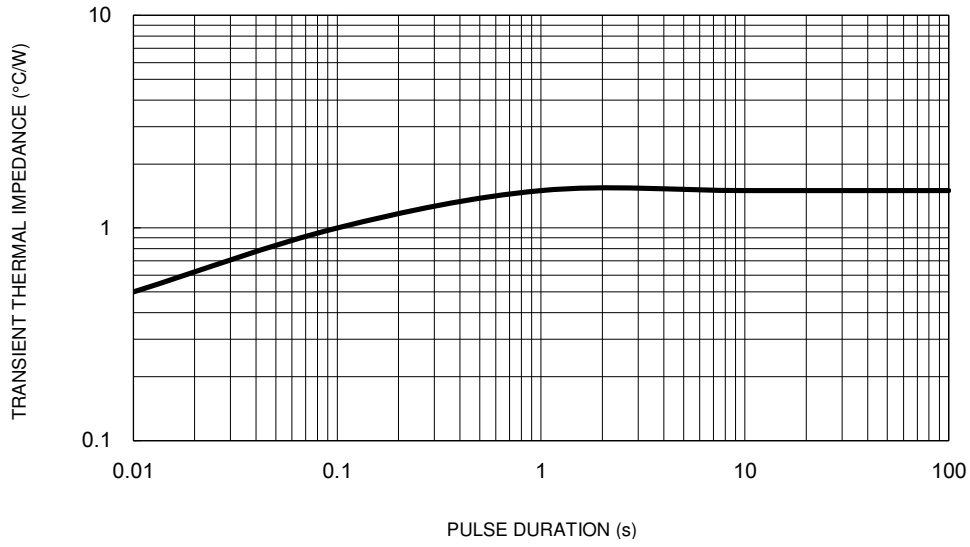
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



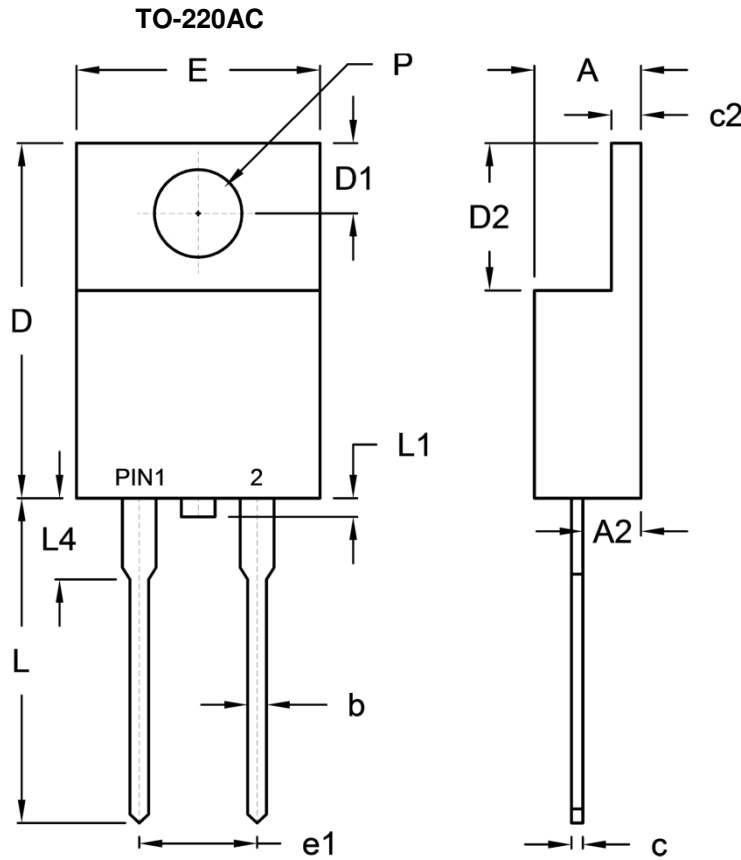
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  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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