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

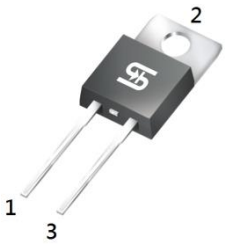
- Switching mode power supply (SMPS)
- Adapters
- DC to DC converters

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
$T_{J\,MAX}$	125, 150	°C
Package	TO-220AC	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE



TO-220AC

ABSOLUTE MAXIMUM RATINGS (T_A = 25°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/µs
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°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]	SRA1020 SRA1030 SRA1040	I_F = 10A, T_J = 25°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[2]	SRA1020 SRA1030 SRA1040 SRA1050 SRA1060	T_J = 25°C	I_R	-	500	μA
	SRA1090 SRA10100 SRA10150			-	100	μA
	SRA1020 SRA1030 SRA1040	T_J = 100°C		-	15	mA
	SRA1050 SRA1060			-	10	mA
	SRA1090 SRA10100 SRA10150			-	-	mA
	SRA1020 SRA1030 SRA1040 SRA1050 SRA1060	T_J = 125°C		-	-	mA
	SRA1090 SRA10100 SRA10150			-	5	mA

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE[1][2]	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°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

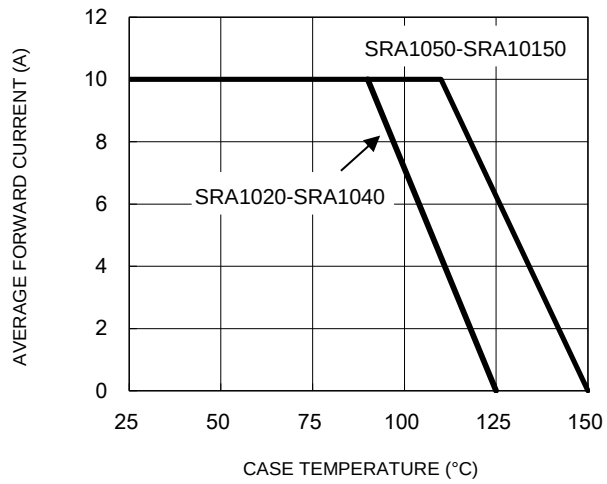


Fig.2 Typical Junction Capacitance

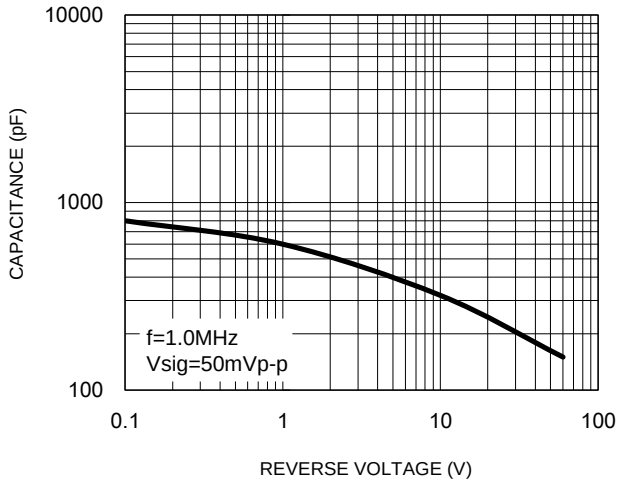


Fig.3 Typical Reverse Characteristics

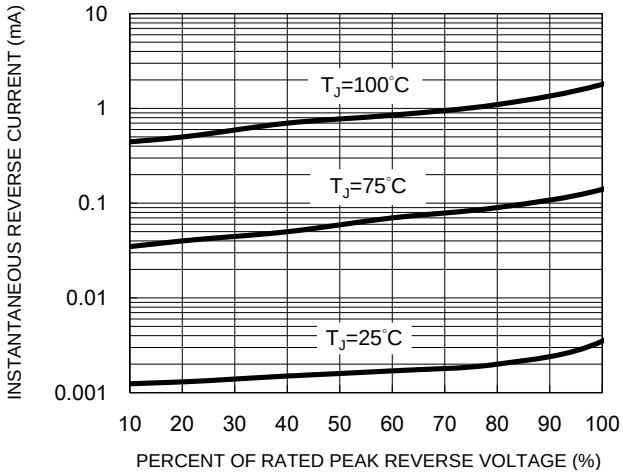


Fig.4 Typical Forward Characteristics

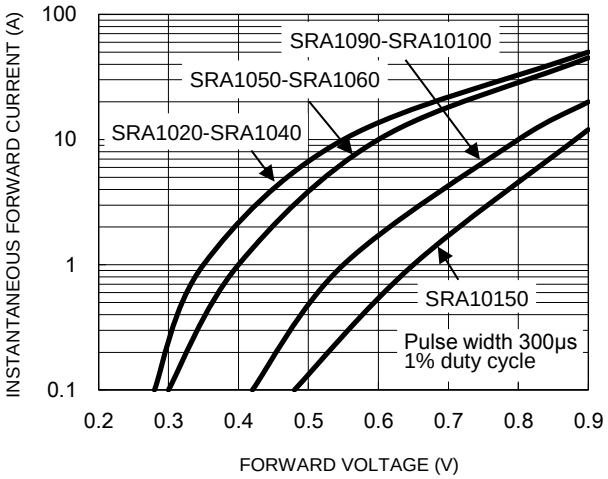
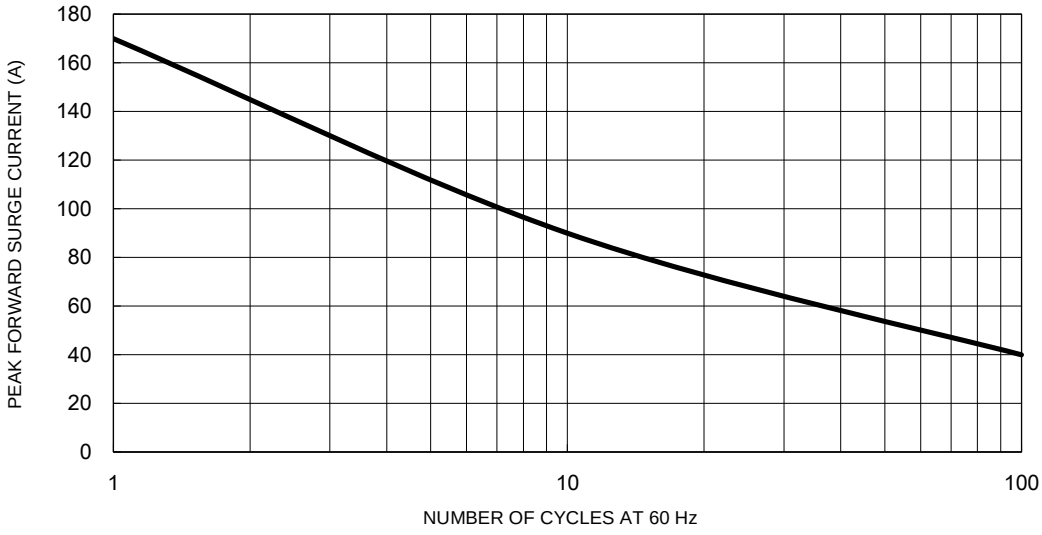


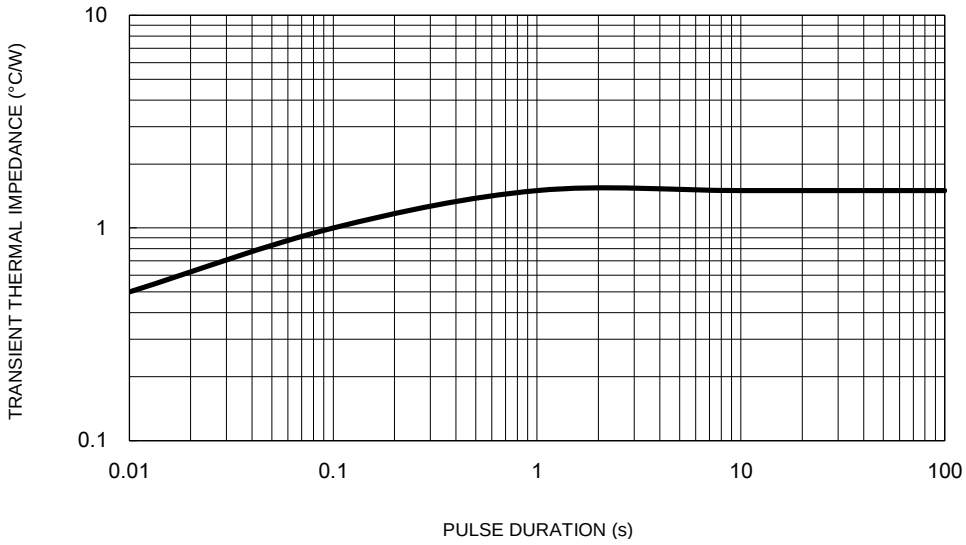
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

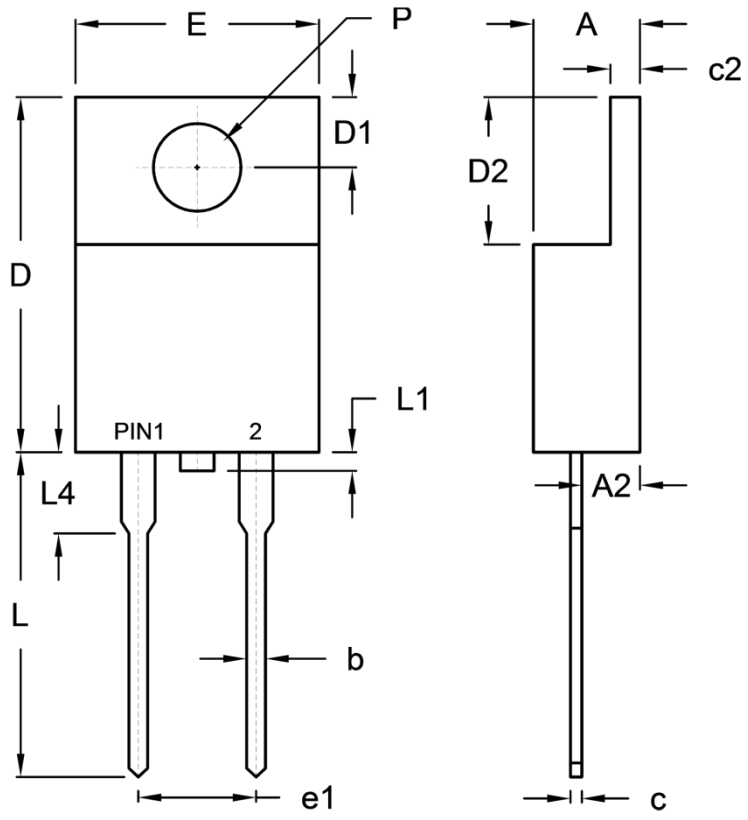
(T_A = 25°C unless otherwise noted)

Fig.6 Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS

TO-220AC



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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