

## 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
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

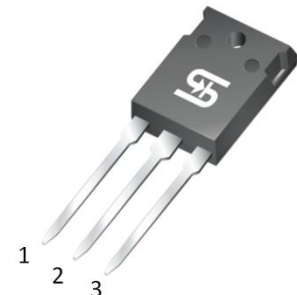
### APPLICATIONS

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

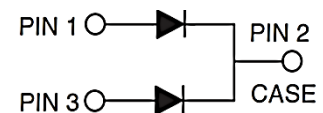
### MECHANICAL DATA

- Case: TO-247AD (TO-3P)
- 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
- Mounting torque: 1.13 N·m maximum
- Polarity: As marked
- Weight: 5.60g (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-247AD (TO-3P)	
Configuration	Dual dies	



TO-247AD (TO-3P)



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	SR 2020 PT	SR 2030 PT	SR 2040 PT	SR 2050 PT	SR 2060 PT	SR 2090 PT	SR 20100 PT	SR 20150 PT	UNIT
Marking code on the device		SR 2020 PT	SR 2030 PT	SR 2040 PT	SR 2050 PT	SR 2060 PT	SR 2090 PT	SR 20100 PT	SR 20150 PT	
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

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-case thermal resistance	$R_{\theta JC}$	1.5	°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 per diode <sup>(1)</sup>	SR2020PT SR2030PT SR2040PT	$I_F = 10\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	0.55	V
	SR2050PT SR2060PT			-	0.70	V
	SR2090PT SR20100PT			-	0.92	V
	SR20150PT			-	1.02	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	SR2020PT SR2030PT SR2040PT SR2050PT SR2060PT	$T_J = 25^\circ\text{C}$	$I_R$	-	500	$\mu\text{A}$
	SR2090PT SR20100PT SR20150PT			-	100	$\mu\text{A}$
	SR2020PT SR2030PT SR2040PT	$T_J = 100^\circ\text{C}$		-	15	mA
	SR2050PT SR2060PT			-	10	mA
	SR2090PT SR20100PT SR20150PT			-	-	mA
	SR2020PT SR2030PT SR2040PT SR2050PT SR2060PT			$T_J = 125^\circ\text{C}$	-	-
	SR2090PT SR20100PT SR20150PT	-			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</b> <sup>(1)(2)</sup>	<b>PACKAGE</b>	<b>PACKING</b>
SR20xPT	TO-247AD (TO-3P)	30 / Tube
SR20xPTH	TO-247AD (TO-3P)	30 / Tube

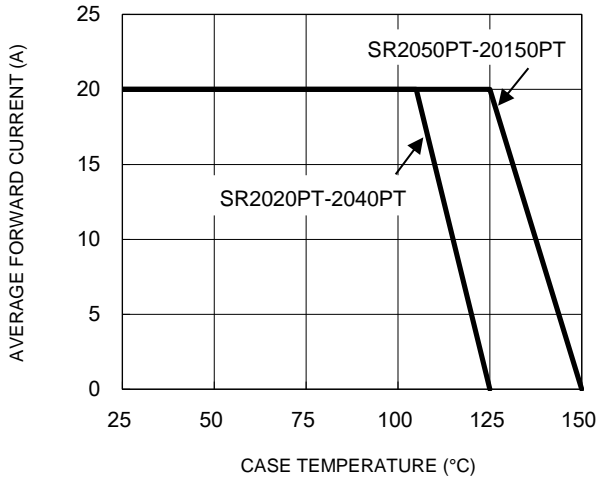
**Notes:**

1. "x" defines voltage from 20V(SR2020PT) to 150V(SR20150PT)
2. "H" means ACE-Q101 qualified

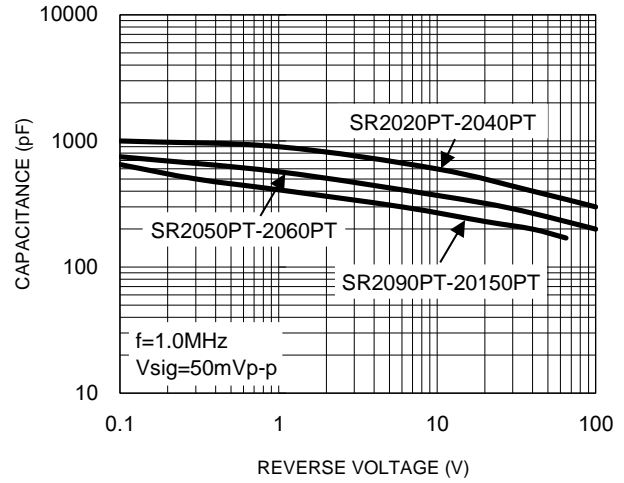
**CHARACTERISTICS CURVES**

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

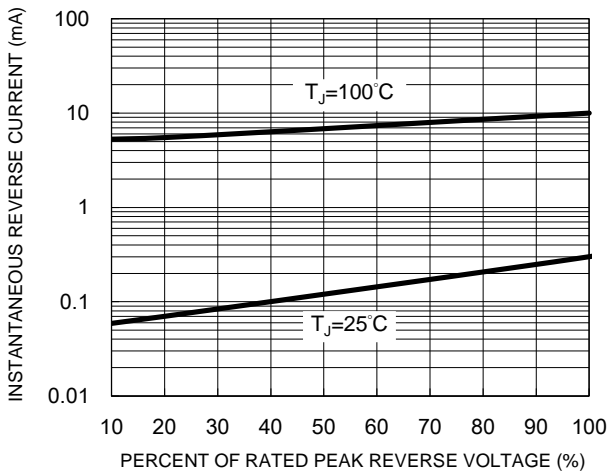
**Fig.1 Forward Current Derating Curve**



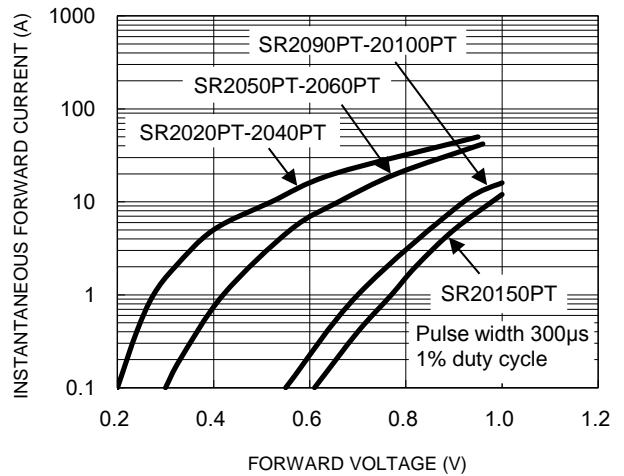
**Fig.2 Typical Junction Capacitance**



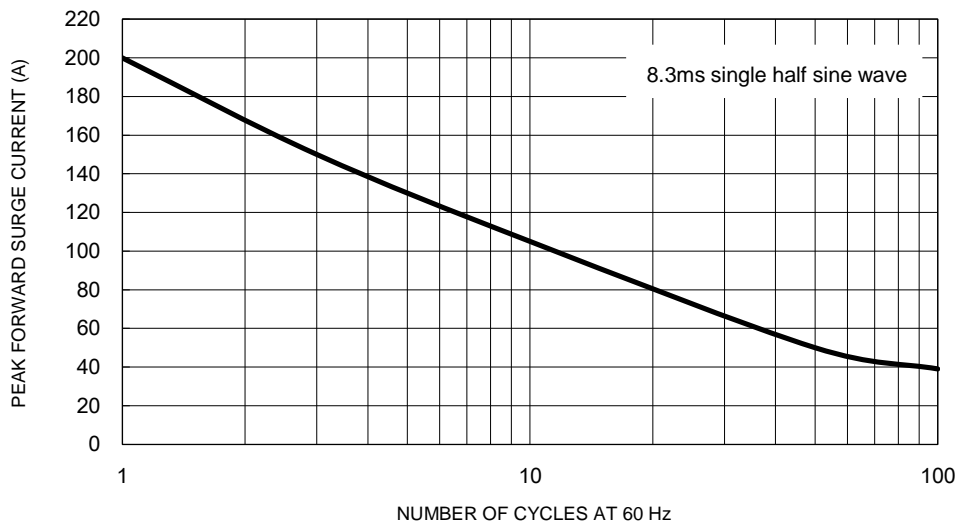
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



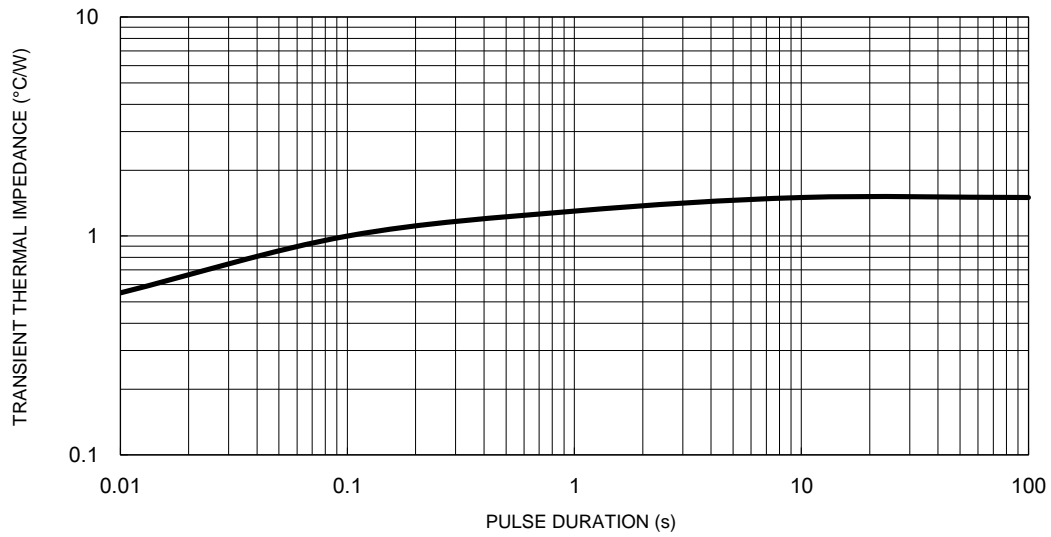
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



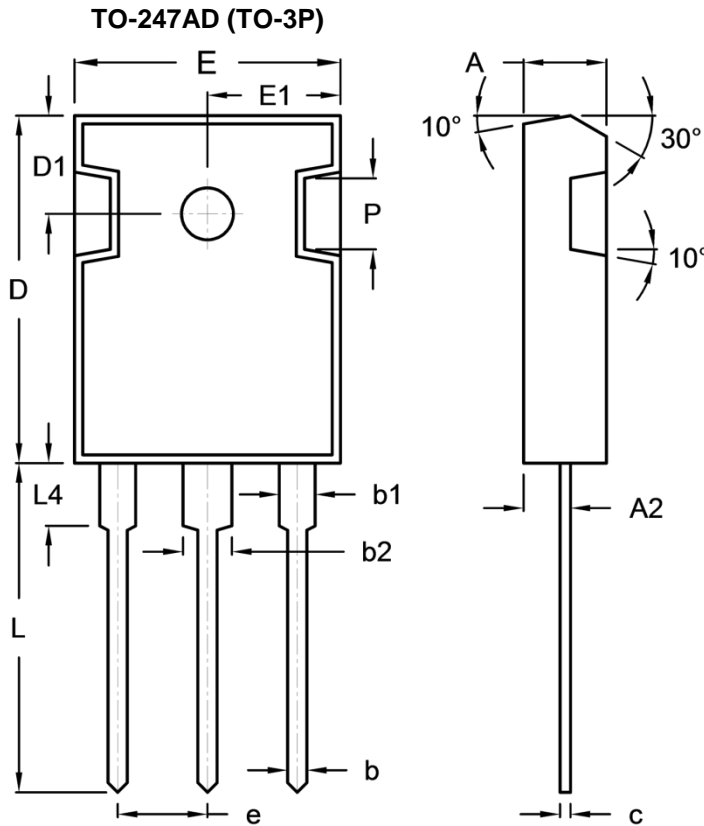
**CHARACTERISTICS CURVES**

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

**Fig.6 Typical Transient Thermal Impedance**



**PACKAGE OUTLINE DIMENSIONS**



DIM	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	4.90	5.16	0.193	0.203
A2	2.70	3.00	0.106	0.118
b	1.12	1.22	0.044	0.048
b1	1.93	2.18	0.076	0.086
b2	2.97	3.22	0.117	0.127
c	0.51	0.76	0.020	0.030
D	20.80	21.30	0.819	0.839
D1	5.70	6.20	0.224	0.244
E	15.90	16.40	0.626	0.646
E1	7.90	8.20	0.311	0.323
e	5.20	5.70	0.205	0.224
H	2.90	3.40	0.114	0.134
L	19.70	20.20	0.776	0.795
L4	3.50	4.10	0.138	0.161
P	-	4.30	-	0.169

**MARKING DIAGRAM**



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