

## 16A, 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

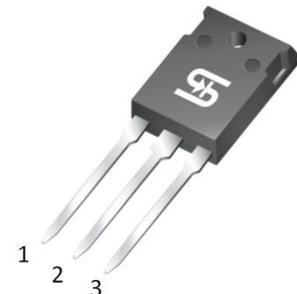
### APPLICATIONS

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

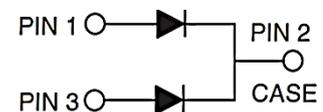
### MECHANICAL DATA

- 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
$I_F$	16	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 1620 PT	SR 1630 PT	SR 1640 PT	SR 1650 PT	SR 1660 PT	SR 1690 PT	SR 16100 PT	SR 16150 PT	UNIT
Marking code on the device		SR 1620 PT	SR 1630 PT	SR 1640 PT	SR 1650 PT	SR 1660 PT	SR 1690 PT	SR 16100 PT	SR 16150 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	$I_F$	16								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	$R_{\theta JC}$	3	°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>	SR1620PT SR1630PT SR1640PT	$I_F = 8\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	0.55	V
	SR1650PT SR1660PT			-	0.70	V
	SR1690PT SR16100PT			-	0.90	V
	SR16150PT			-	1.00	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	SR1620PT SR1630PT SR1640PT SR1650PT SR1660PT	$T_J = 25^\circ\text{C}$	$I_R$	-	500	$\mu\text{A}$
	SR1690PT SR16100PT SR16150PT			-	100	$\mu\text{A}$
	SR1620PT SR1630PT SR1640PT	$T_J = 100^\circ\text{C}$		-	15	mA
	SR1650PT SR1660PT			-	10	mA
	SR1690PT SR16100PT SR16150PT			-	-	mA
	SR1620PT SR1630PT SR1640PT SR1650PT SR1660PT	$T_J = 125^\circ\text{C}$		-	-	mA
	SR1690PT SR16100PT SR16150PT			-	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>
SR16xPT	TO-247AD (TO-3P)	30 / Tube
SR16xPTH	TO-247AD (TO-3P)	30 / Tube

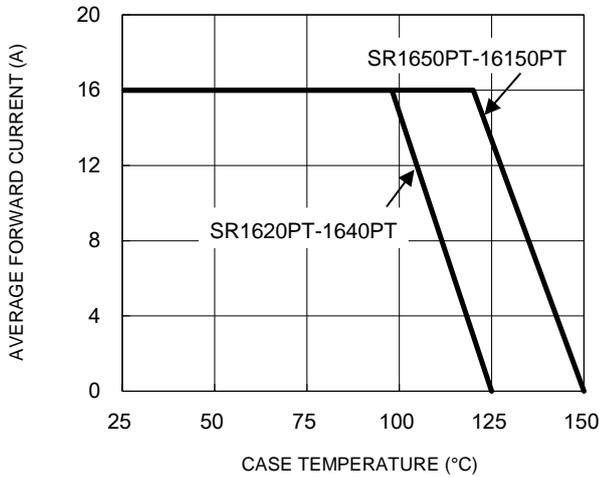
**Notes:**

1. "x" defines voltage from 20V(SR1620PT) to 150V(SR16150PT)
2. "H" means AEC-Q101 qualified

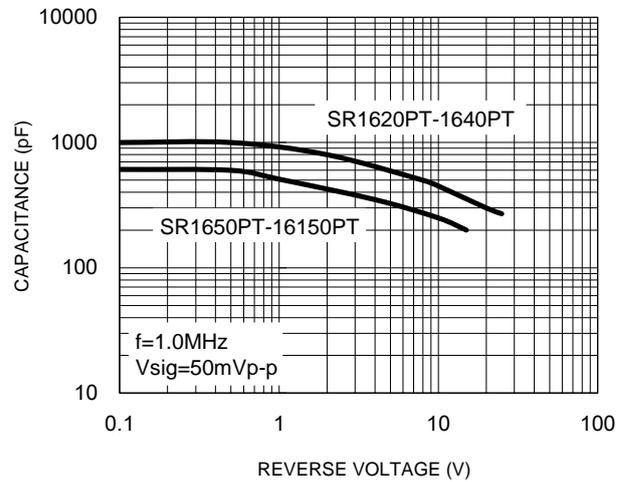
**CHARACTERISTICS CURVES**

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

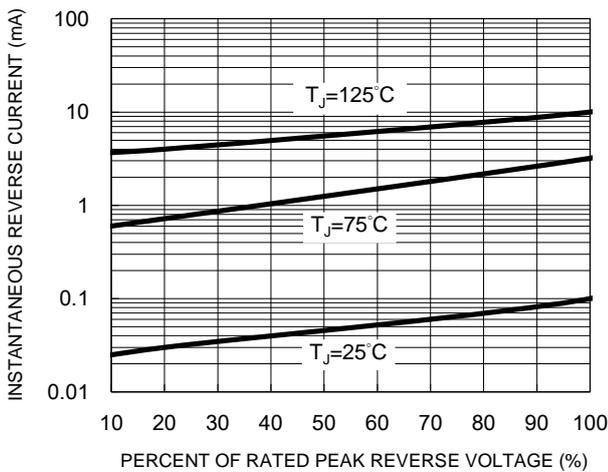
**Fig.1 Forward Current Derating Curve**



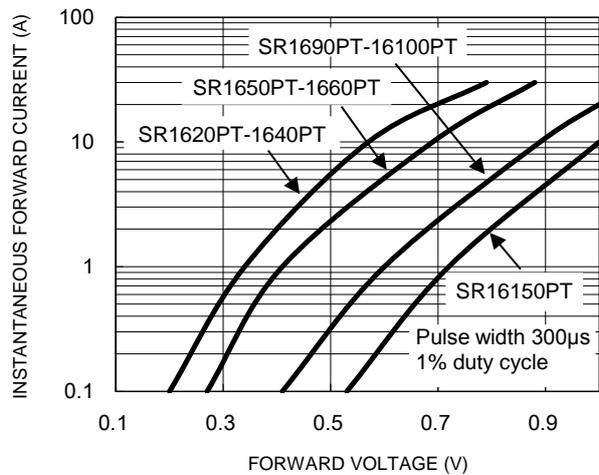
**Fig.2 Typical Junction Capacitance**



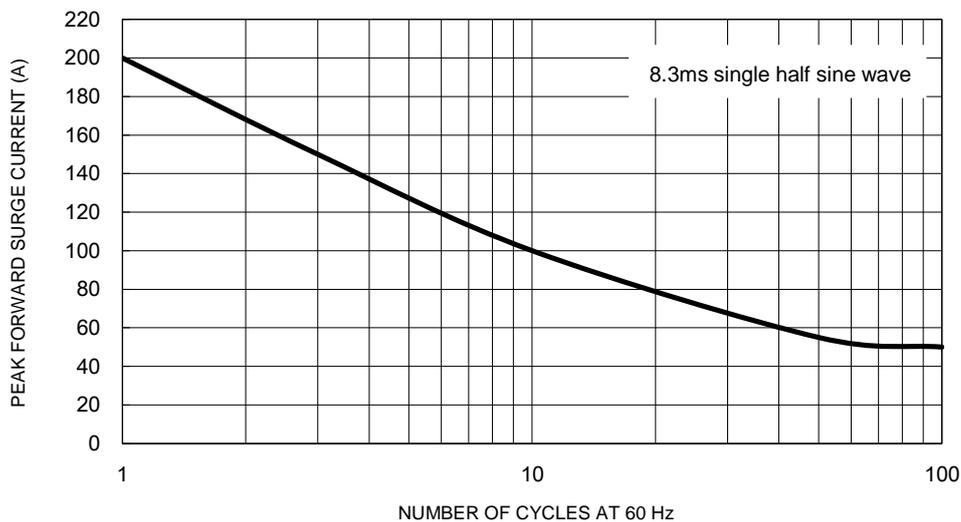
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



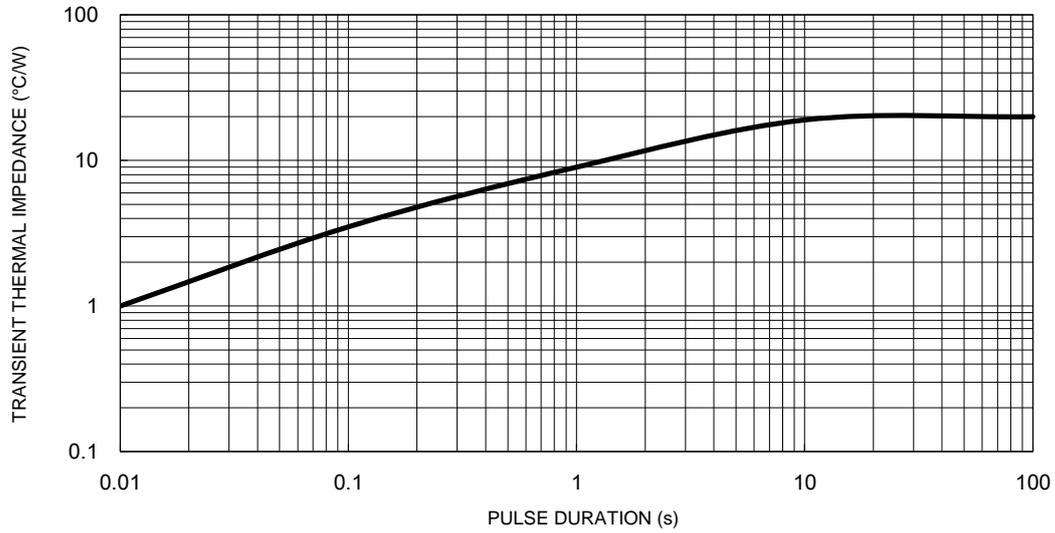
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



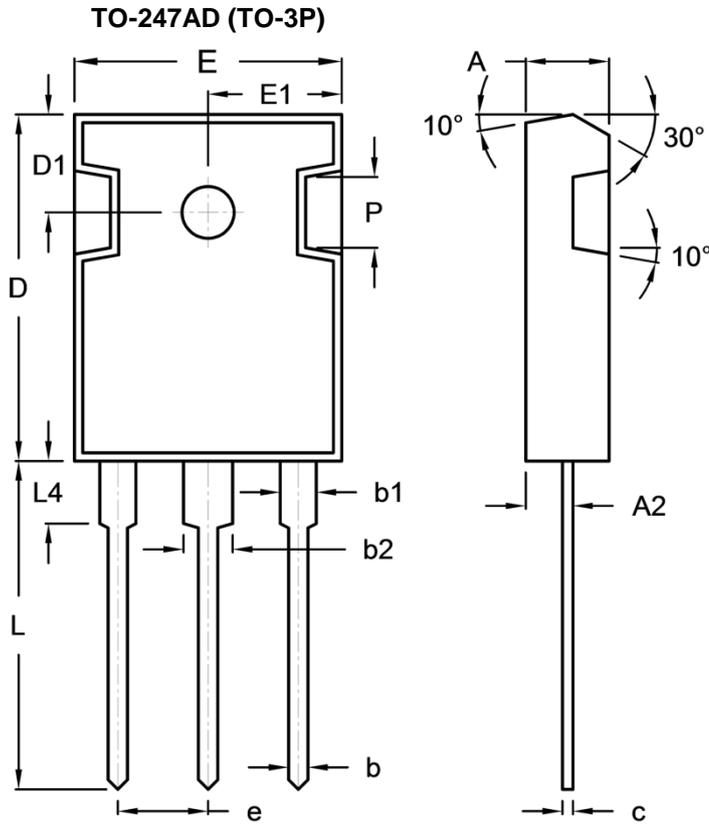
**CHARACTERISTICS CURVES**

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

**Fig.6 Typical Transient Thermal Impedance**



**PACKAGE OUTLINE DIMENSIONS**



DIM	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	4.90	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

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