40A, 20V - 100V 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

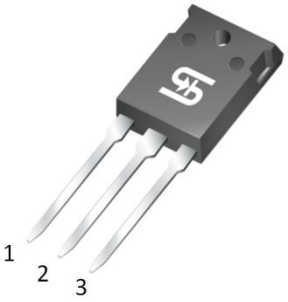
- Switching mode power supply (SMPS)
- Adapters
- Monitor
- DC to DC converters
- TV

MECHANICAL DATA

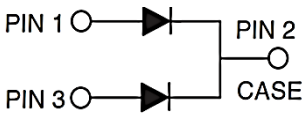
- Case: TO-247AD (TO-3P)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Mounting torque: 1.13 N·m maximum
- Polarity: As marked
- Weight: 6.10g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	40	A
V_{RRM}	20 - 100	V
I_{FSM}	400	A
$T_{J\ MAX}$	125, 150	°C
Package	TO-247AD (TO-3P)	
Configuration	Dual dies	

Pb-Free RoHS COMPLIANT HALOGEN FREE



TO-247AD (TO-3P)



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

PARAMETER	SYMBOL	SR 4020 PT	SR 4030 PT	SR 4040 PT	SR 4050 PT	SR 4060 PT	SR 4090 PT	SR 40100 PT	UNIT
Marking code on the device		SR 4020 PT	SR 4030 PT	SR 4040 PT	SR 4050 PT	SR 4060 PT	SR 4090 PT	SR 40100 PT	
Repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	90	100	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	35	42	63	70	V
Forward current	I_F	40							A
Surge peak forward current 8.3ms single half sine wave superimposed on rated load	I_{FSM}	400							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 thermal resistance	$R_{\Theta JC}$	1.2	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode[1]	SR4020PT SR4030PT SR4040PT	I_F = 20A, T_J = 25°C	V_F	-	0.55	V
	SR4050PT SR4060PT			-	0.70	V
	SR4090PT SR40100PT			-	0.90	V
Reverse current @ rated V_R per diode[2]	SR4020PT SR4030PT SR4040PT SR4050PT SR4060PT	T_J = 25°C	I_R	-	1000	μA
	SR4090PT SR40100PT			-	500	μA
	SR4020PT SR4030PT SR4040PT	T_J = 100°C		-	30	mA
	SR4050PT SR4060PT			-	20	mA
	SR4090PT SR40100PT			-	-	mA
	SR4020PT SR4030PT SR4040PT SR4050PT SR4060PT	T_J = 125°C		-	-	mA
	SR4090PT SR40100PT			-	10	mA

Notes:

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

ORDERING INFORMATION

ORDERING CODE[1][2]	PACKAGE	PACKING
SR40xPT	TO-247AD (TO-3P)	30 / Tube
SR40xPTH	TO-247AD (TO-3P)	30 / Tube

Notes:

1. "x" defines voltage from 20V(SR4020PT) to 100V(SR40100PT)
2. "H" means ACE-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

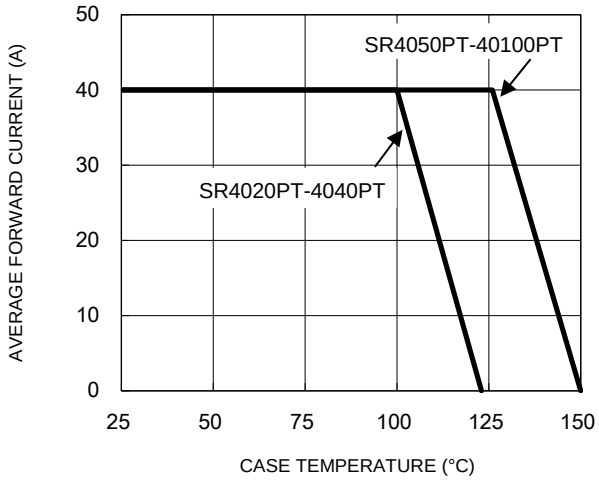


Fig.2 Typical Junction Capacitance

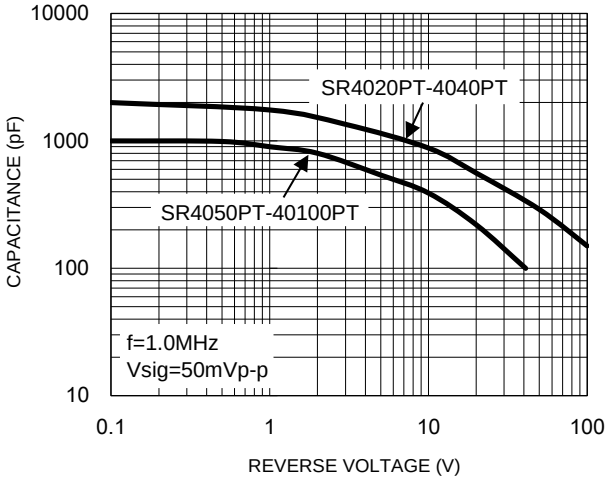


Fig.3 Typical Reverse Characteristics

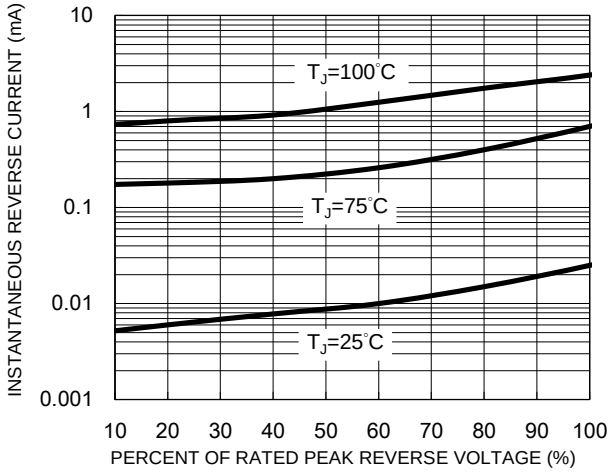


Fig.4 Typical Forward Characteristics

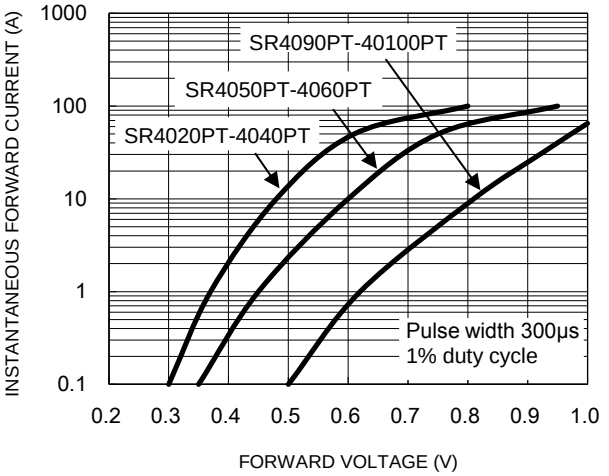
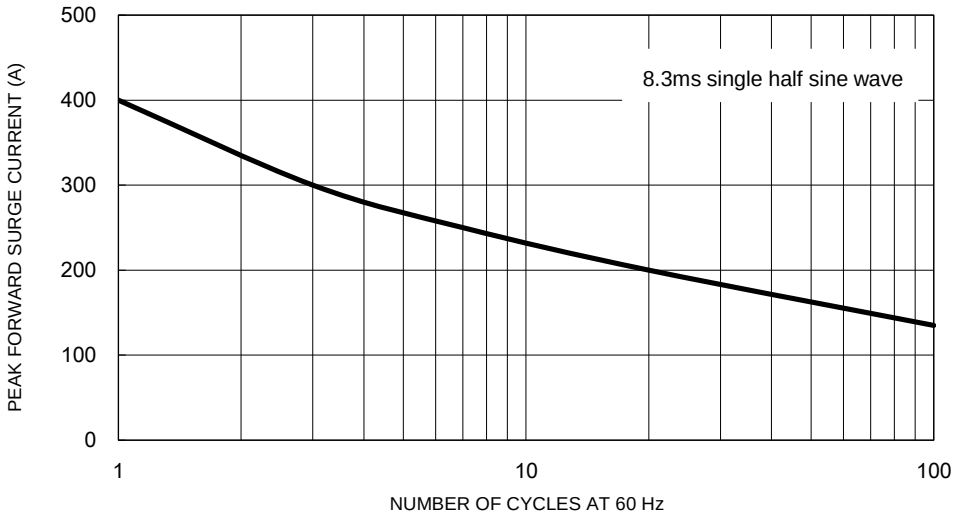


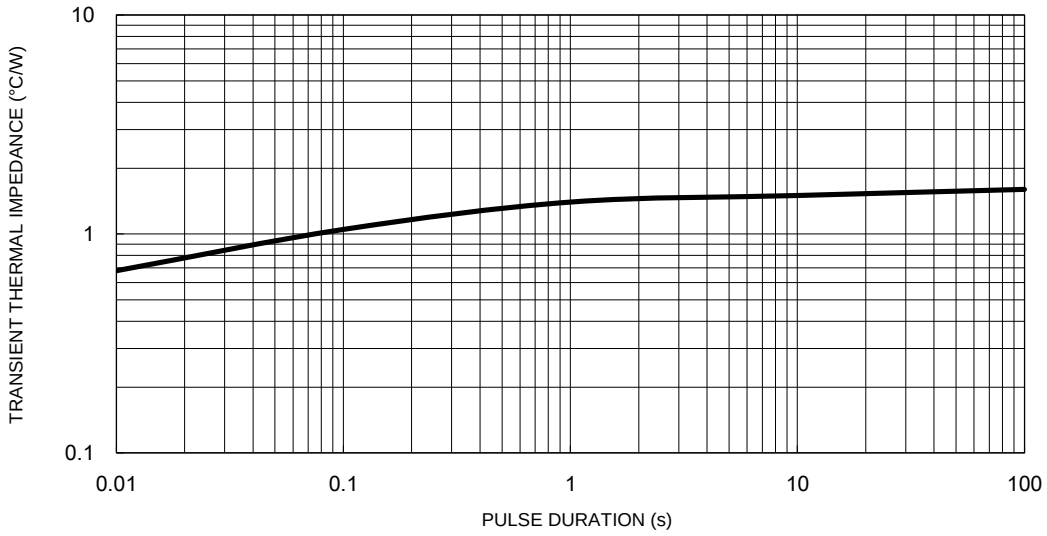
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

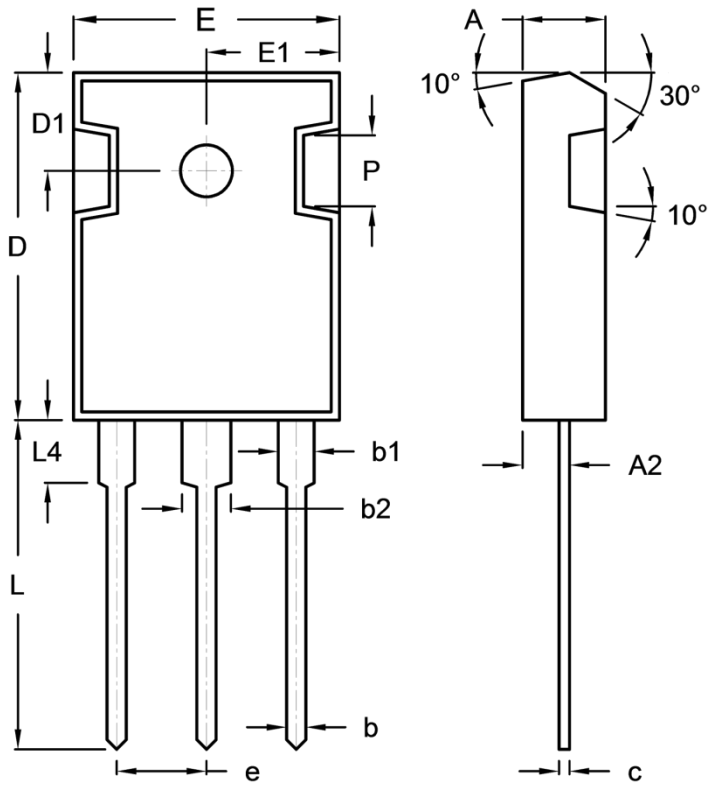
(T_A = 25°C unless otherwise noted)

Fig.6 Typical Transient Thermal Impedance



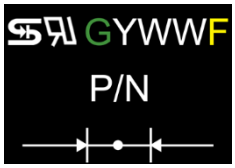
PACKAGE OUTLINE DIMENSIONS

TO-247AD (TO-3P)



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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