

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
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

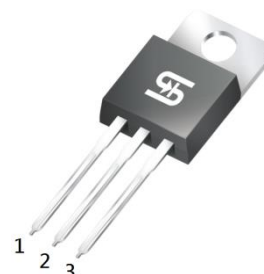
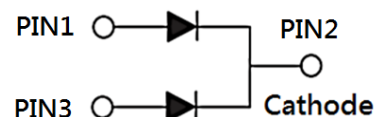
APPLICATIONS

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

MECHANICAL DATA

- Case: TO-220AB
- 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: 1.80g (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-220AB	
Configuration	Dual dies	


TO-220AB


ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	SR 2020	SR 2030	SR 2040	SR 2050	SR 2060	SR 2090	SR 20100	SR 20150	UNIT
Marking code on the device		SR 2020	SR 2030	SR 2040	SR 2050	SR 2060	SR 2090	SR 20100	SR 20150	
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
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 thermal resistance	$R_{\theta JC}$	1	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	SR2020 SR2030 SR2040	$I_F = 10\text{A}, T_J = 25^\circ\text{C}$	V_F	-	0.55	V
	SR2050 SR2060			-	0.70	V
	SR2090 SR20100			-	0.90	V
	SR20150			-	1.00	V
Reverse current @ rated V_R per diode ⁽²⁾	SR2020 SR2030 SR2040 SR2050 SR2060	$T_J = 25^\circ\text{C}$	I_R	-	500	μA
	SR2090 SR20100 SR20150			-	100	μA
	SR2020 SR2030 SR2040	$T_J = 100^\circ\text{C}$		-	15	mA
	SR2050 SR2060			-	10	mA
	SR2090 SR20100 SR20150			-	-	mA
	SR2020 SR2030 SR2040 SR2050 SR2060			$T_J = 125^\circ\text{C}$	-	-
	SR2090 SR20100 SR20150	-			5	mA

Notes:

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

ORDERING INFORMATION		
ORDERING CODE ⁽¹⁾⁽²⁾	PACKAGE	PACKING
SR20x	TO-220AB	50 / Tube
SR20xH	TO-220AB	50 / Tube

Notes:

1. "x" defines voltage from 20V(SR2020) to 150V(SR20150)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

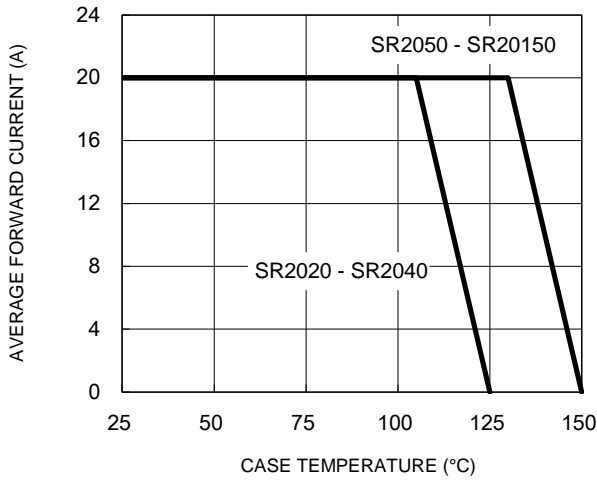


Fig.2 Typical Junction Capacitance

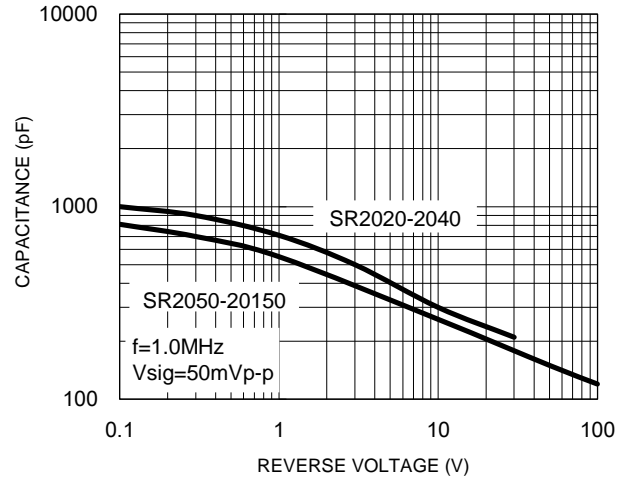


Fig.3 Typical Reverse Characteristics

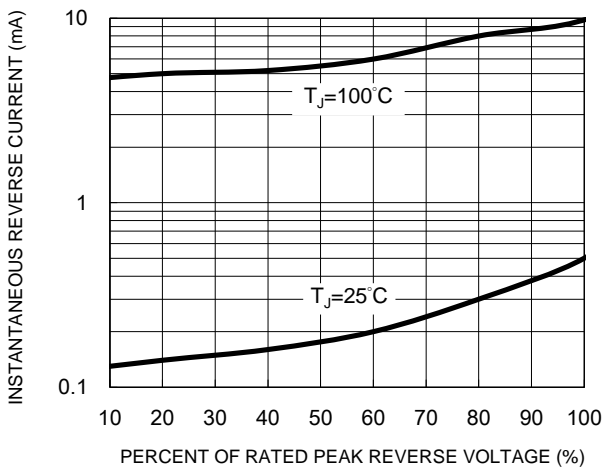


Fig.4 Typical Forward Characteristics

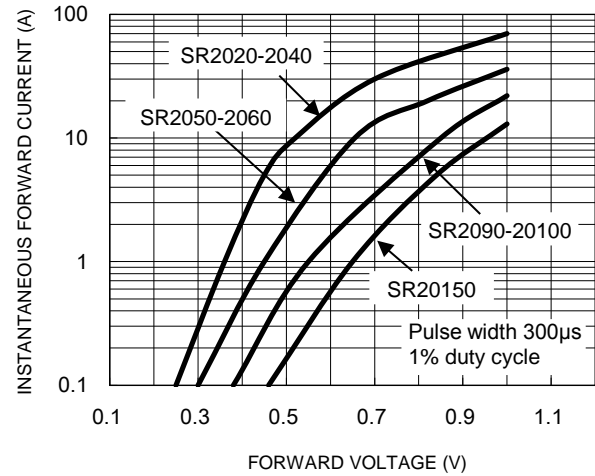
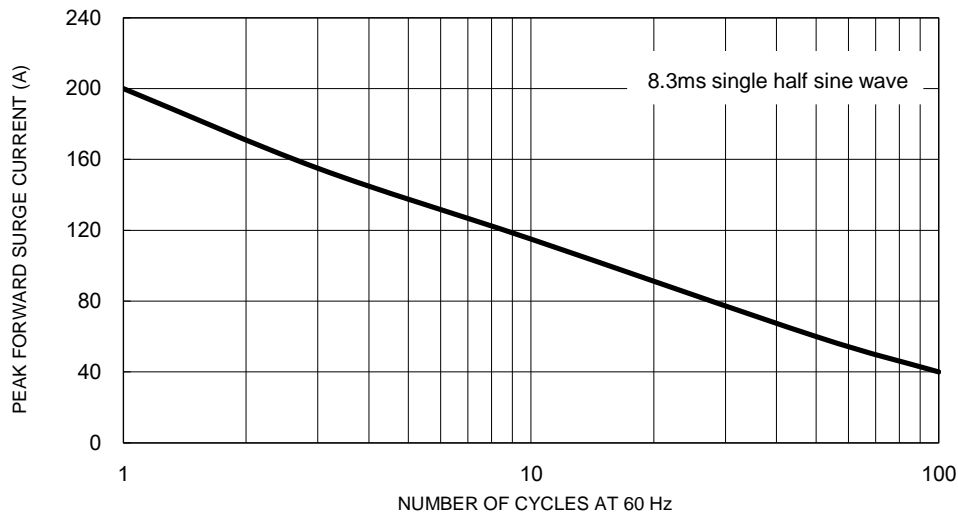


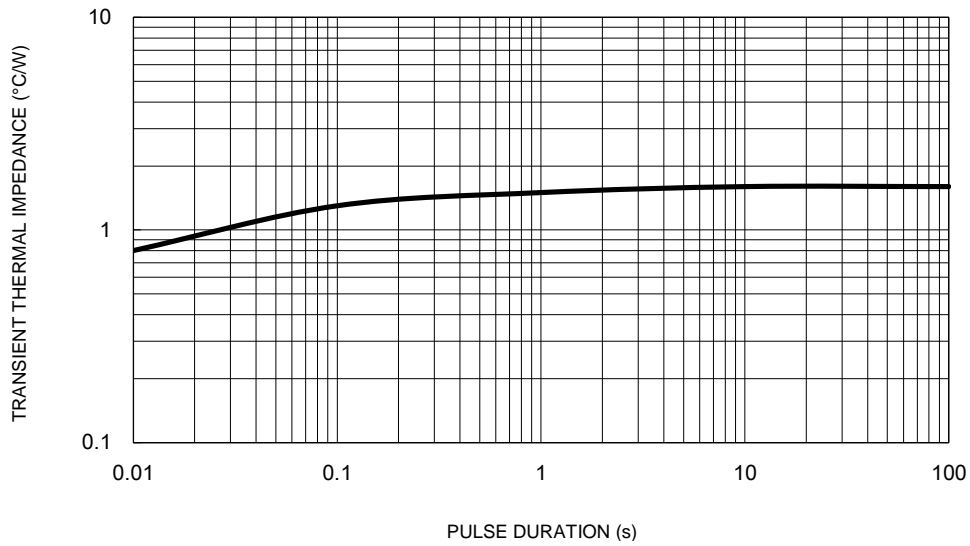
Fig.5 Maximum Non-Repetitive Forward Surge Current



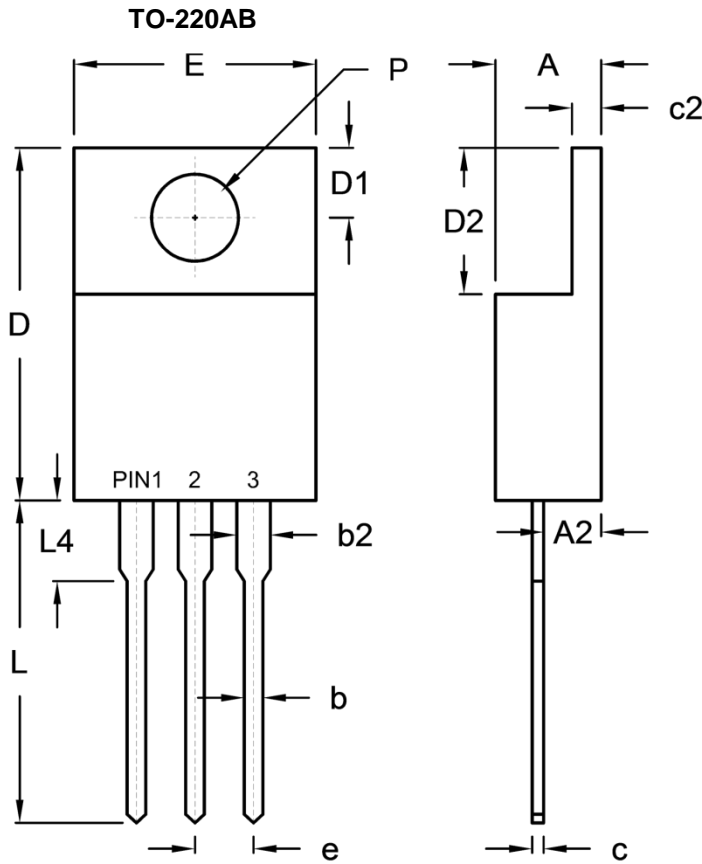
CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ 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
b2	1.14	1.77	0.045	0.070
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
e	2.41	2.67	0.095	0.105
L	13.19	14.79	0.519	0.582
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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