

3A, 20V - 200V Schottky Barrier Rectifier

FEATURES

- AEC-Q101 qualified available
- Low forward voltage drop
- 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 converter

MECHANICAL DATA

- Case: DO-201AD
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 1.10g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	3	A
V_{RRM}	20 - 200	V
I_{FSM}	80	A
T_{JMAX}	125, 150	°C
Package	DO-201AD	
Configuration	Single die	



DO-201AD



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)											
PARAMETER	SYMBOL	SR 302	SR 303	SR 304	SR 305	SR 306	SR 309	SR 310	SR 315	SR 320	UNIT
Marking code on the device		SR 302	SR 303	SR 304	SR 305	SR 306	SR 309	SR 310	SR 315	SR 320	
Repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	90	100	150	200	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	35	42	63	70	105	140	V
Forward current	I_F	3									A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	80									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-ambient thermal resistance	$R_{\theta JA}$	50	$^{\circ}\text{C}/\text{W}$
Junction-to-case thermal resistance	$R_{\theta JC}$	15	$^{\circ}\text{C}/\text{W}$

ELECTRICAL SPECIFICATIONS ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	SR302 SR303 SR304	$I_F = 3\text{A}, T_J = 25^{\circ}\text{C}$	V_F	-	0.55	V
	SR305 SR306			-	0.70	V
	SR309 SR310			-	0.85	V
	SR315 SR320			-	0.95	V
Reverse current @ rated V_R ⁽²⁾	SR302 SR303 SR304 SR305 SR306	$T_J = 25^{\circ}\text{C}$	I_R	-	500	μA
	SR309 SR310 SR315 SR320			-	100	μA
	SR302 SR303 SR304	$T_J = 100^{\circ}\text{C}$		-	10	mA
	SR305 SR306			-	5	mA
	SR309 SR310 SR315 SR320			-	-	mA
	SR302 SR303 SR304	$T_J = 125^{\circ}\text{C}$		-	-	mA
	SR305 SR306			-	-	mA
	SR309 SR310 SR315 SR320			-	2	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
SR3x	DO-201AD	1,250 / Tape & Reel
SR3x A0G	DO-201AD	500 / Ammo box
SR3xH	DO-201AD	1,250 / Tape & Reel
SR3xHA0G	DO-201AD	500 / Ammo box

Notes:

1. "x" defines voltage from 20V (SR302) to 200V (SR320)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

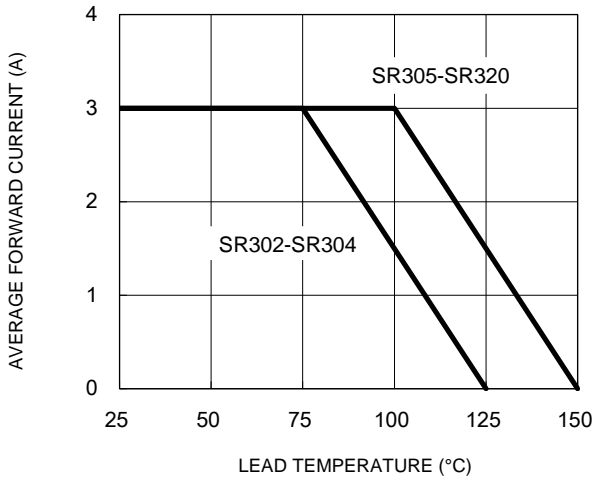


Fig.2 Typical Junction Capacitance

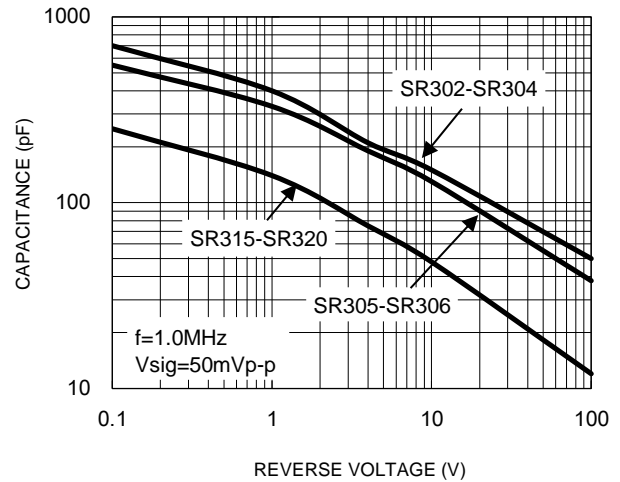


Fig.3 Typical Reverse Characteristics

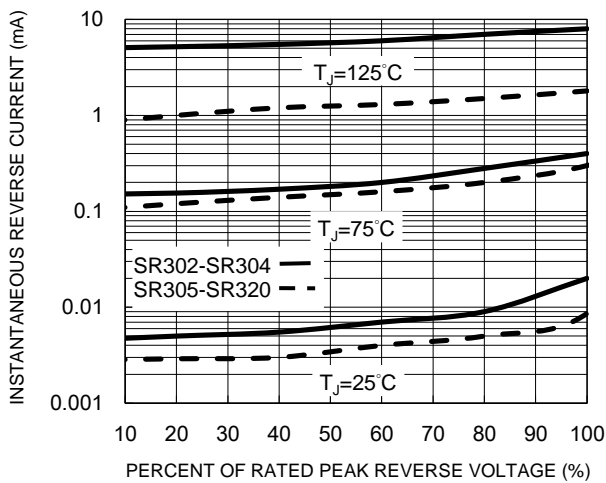


Fig.4 Typical Forward Characteristics

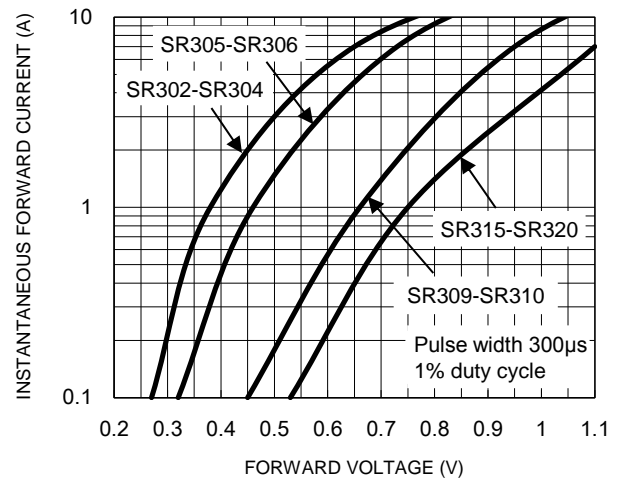
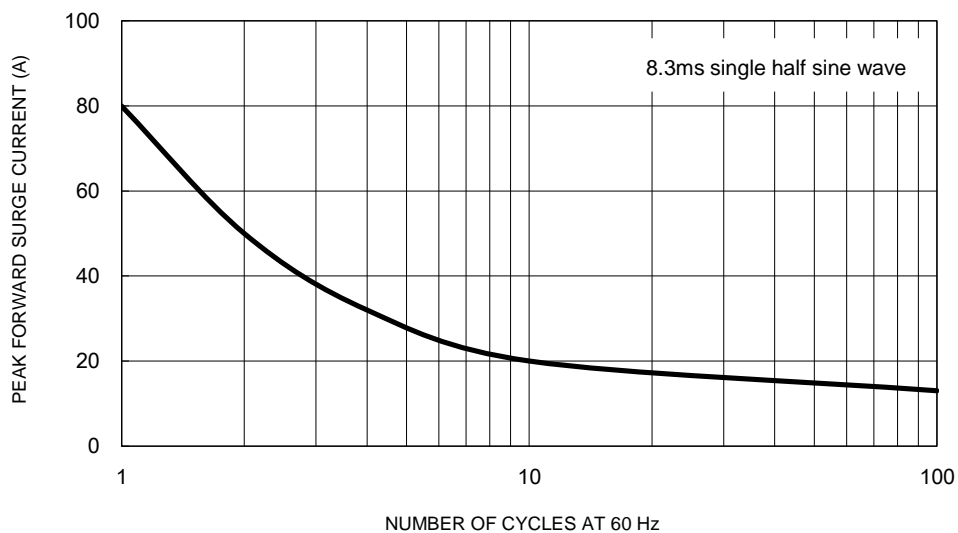


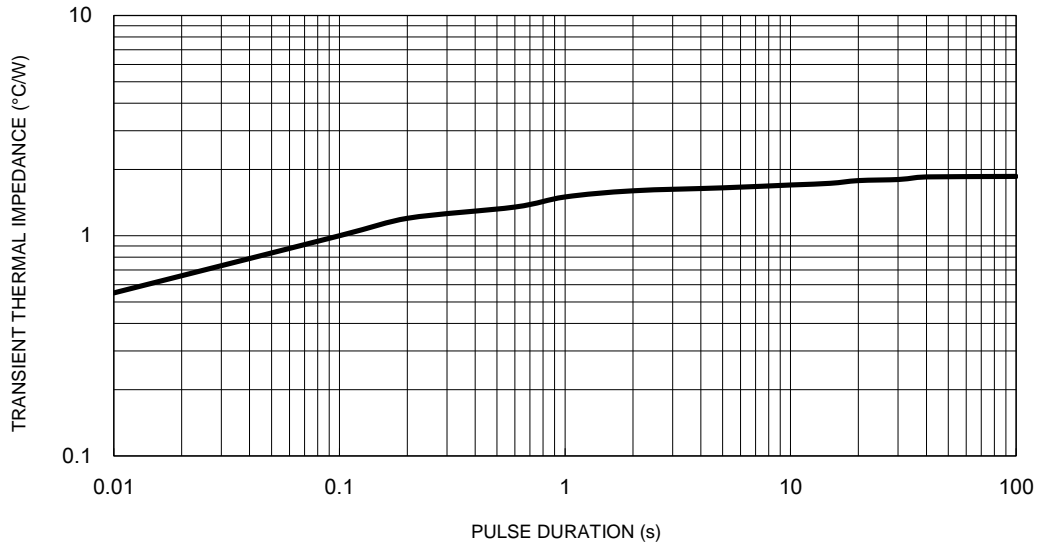
Fig.5 Maximum Non-Repetitive Forward Surge Current



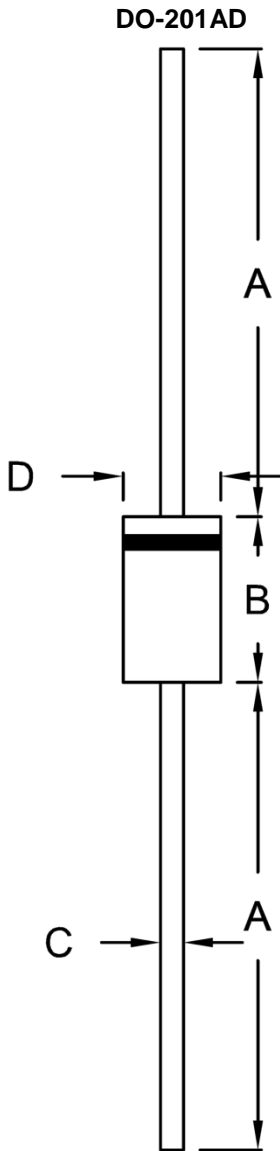
CHARACTERISTICS CURVES

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

Fig.6 Typical Transient Thermal Characteristics



PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	8.50	9.50	0.335	0.374
C	1.20	1.30	0.047	0.051
D	5.00	5.60	0.197	0.220

MARKING DIAGRAM



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

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