

5A, 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	5	A
V_{RRM}	20 - 200	V
I_{FSM}	120	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 502	SR 503	SR 504	SR 505	SR 506	SR 509	SR 510	SR 515	SR 520	UNIT
Marking code on the device		SR 502	SR 503	SR 504	SR 505	SR 506	SR 509	SR 510	SR 515	SR 520	
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	5									A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	120									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	$R_{\theta JA}$	35	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	6	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT	
Forward voltage ⁽¹⁾	SR502 SR503 SR504	$I_F = 5\text{A}, T_J = 25^\circ\text{C}$	V_F	-	0.55	V	
	SR505 SR506			-	0.70	V	
	SR509 SR510			-	0.85	V	
	SR515 SR520			-	1.05	V	
Reverse current @ rated V_R ⁽²⁾	SR502 SR503 SR504 SR505 SR506	$T_J = 25^\circ\text{C}$	I_R	-	500	μA	
	SR509 SR510 SR515 SR520			-	100	μA	
	SR502 SR503 SR504	$T_J = 100^\circ\text{C}$		-	15	mA	
	SR505 SR506			-	10	mA	
	SR509 SR510 SR515 SR520			-	-	mA	
	SR502 SR503 SR504	$T_J = 125^\circ\text{C}$		-	-	mA	
	SR505 SR506			-	-	mA	
	SR509 SR510			-	5	mA	
	SR515 SR520			-	1	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
SR5x	DO-201AD	1,250 / Tape & Reel
SR5x A0G	DO-201AD	500 / Ammo box
SR5xH	DO-201AD	1,250 / Tape & Reel
SR5xHA0G	DO-201AD	500 / Ammo box

Notes:

1. "x" defines voltage from 20V (SR502) to 200V (SR520)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

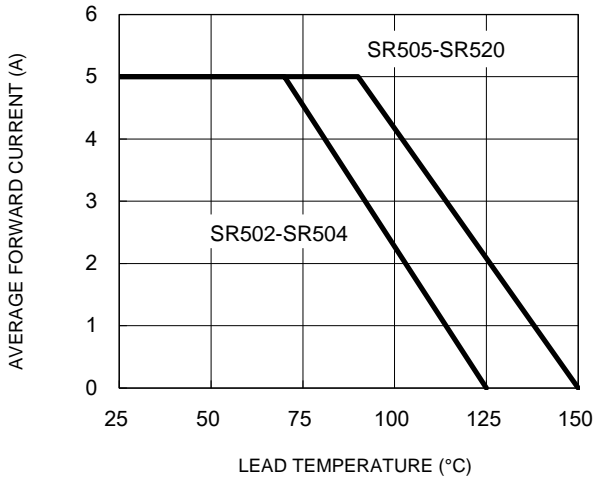


Fig.2 Typical Junction Capacitance

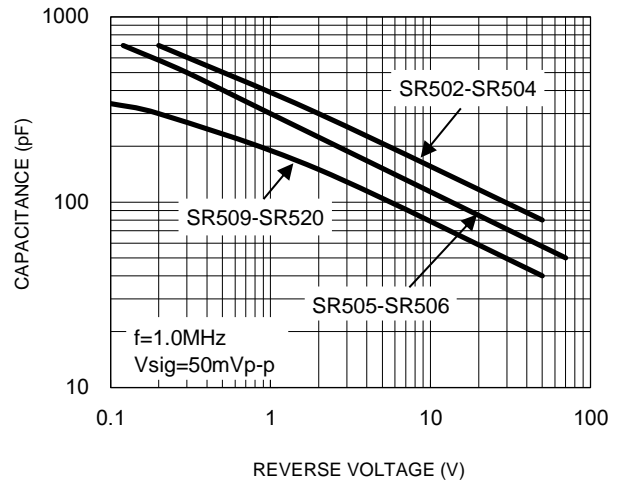


Fig.3 Typical Reverse Characteristics

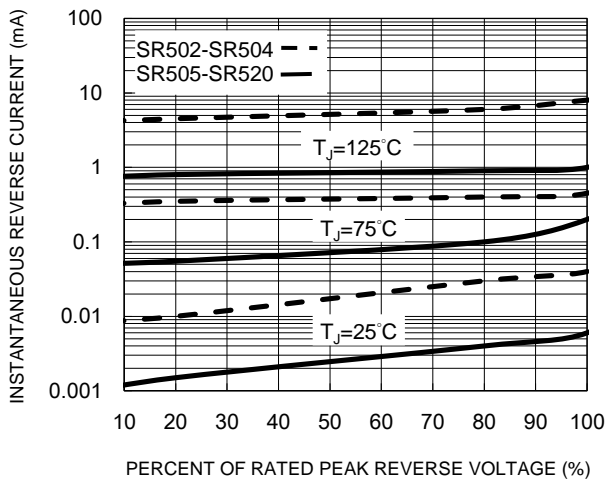


Fig.4 Typical Forward Characteristics

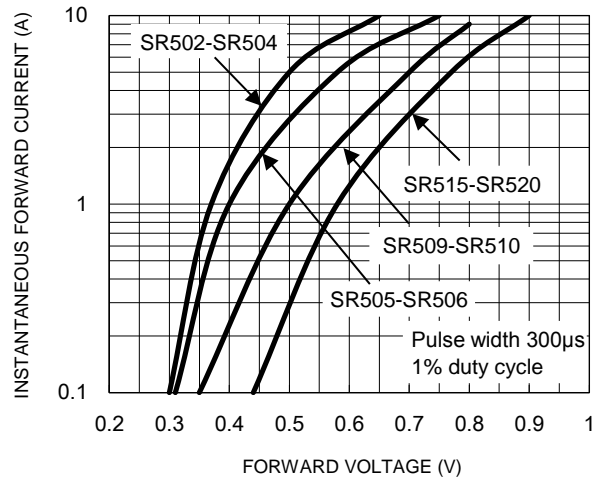
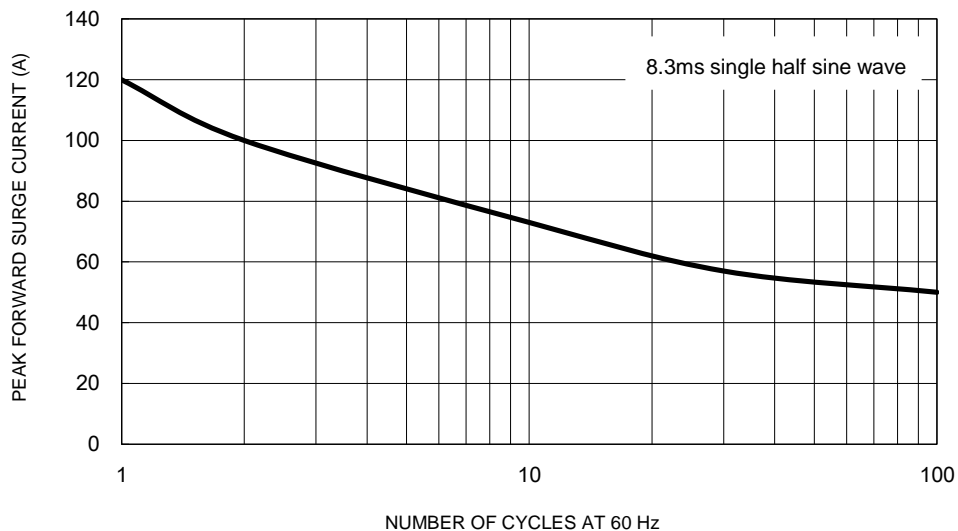


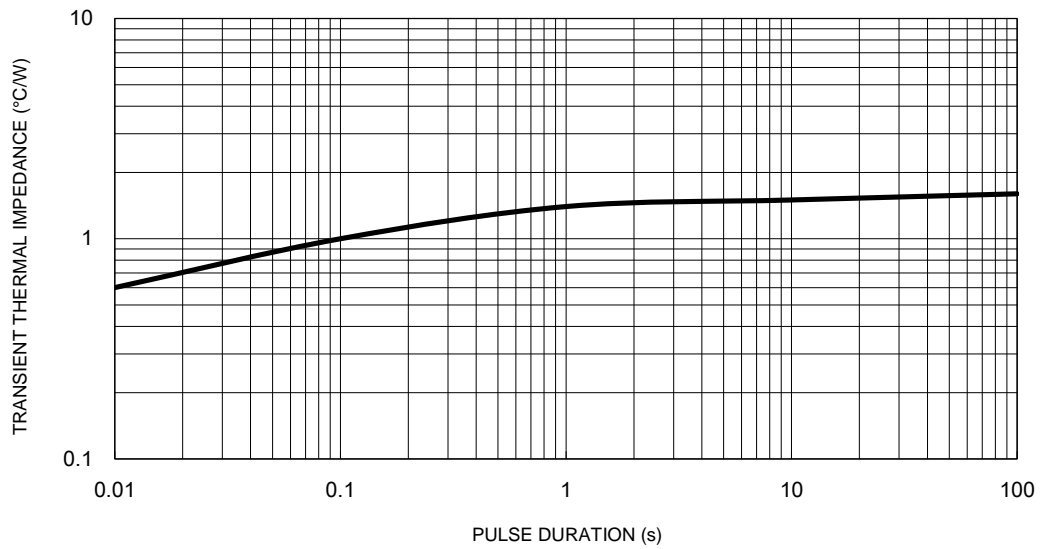
Fig.5 Maximum Non-Repetitive Forward Surge Current



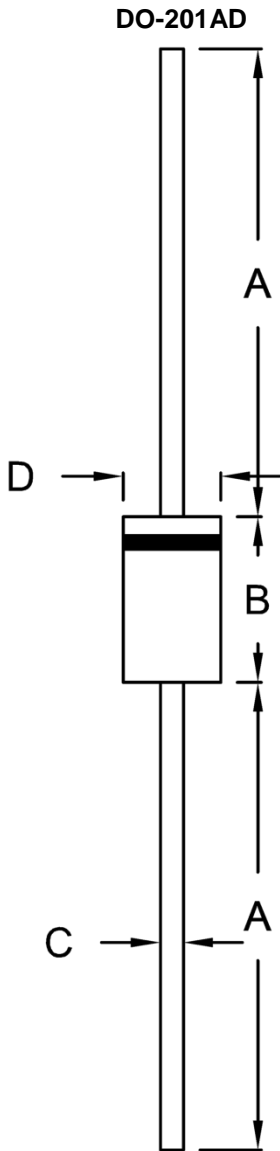
CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ 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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