

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
$T_{J\ MAX}$	125, 150	°C
Package	DO-201AD	
Configuration	Single die	



DO-201AD



ABSOLUTE MAXIMUM RATINGS (T _A = 25°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 = 5A, T _J = 25°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°C	I _R	-	500	μA
	SR509 SR510 SR515 SR520			-	100	μA
	SR502 SR503 SR504	T _J = 100°C		-	15	mA
	SR505 SR506			-	10	mA
	SR509 SR510 SR515 SR520			-	-	mA
	SR502 SR503 SR504	T _J = 125°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

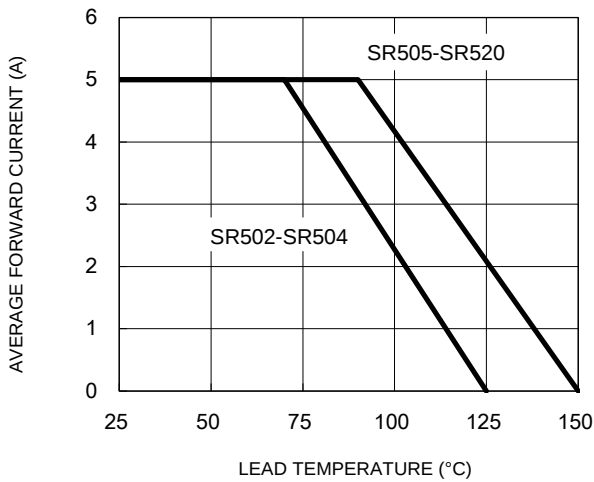


Fig.2 Typical Junction Capacitance

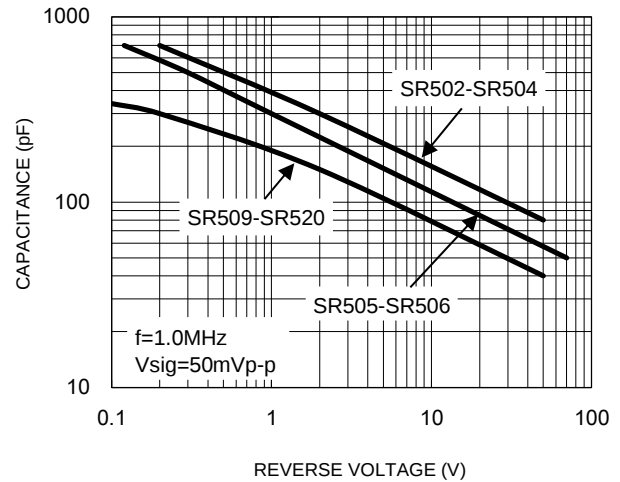


Fig.3 Typical Reverse Characteristics

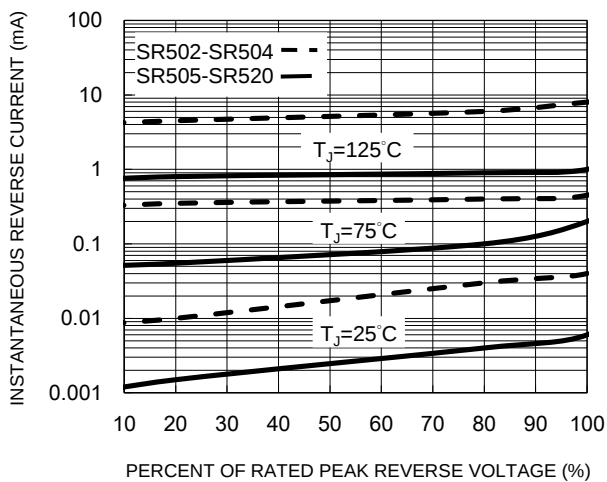


Fig.4 Typical Forward Characteristics

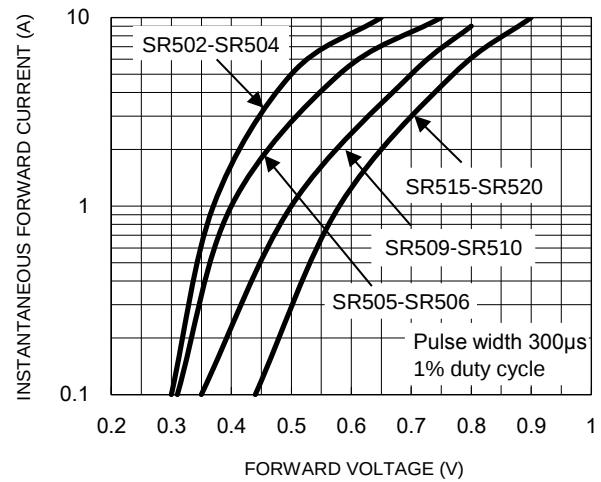
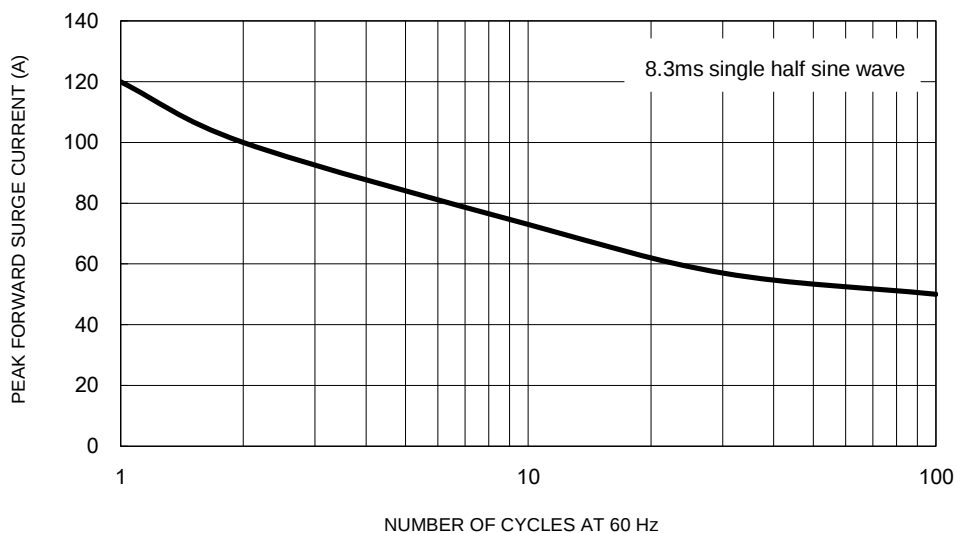


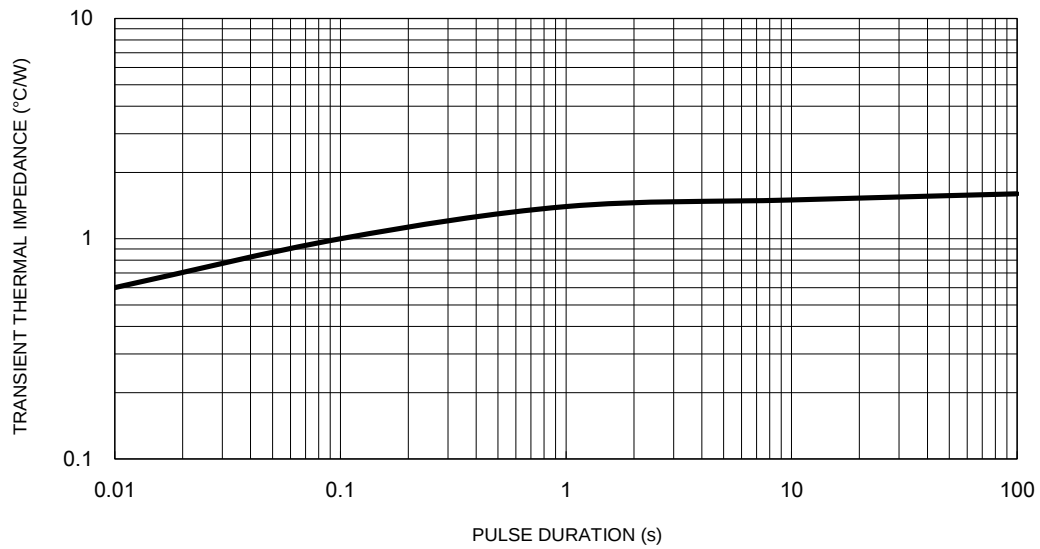
Fig.5 Maximum Non-Repetitive Forward Surge Current



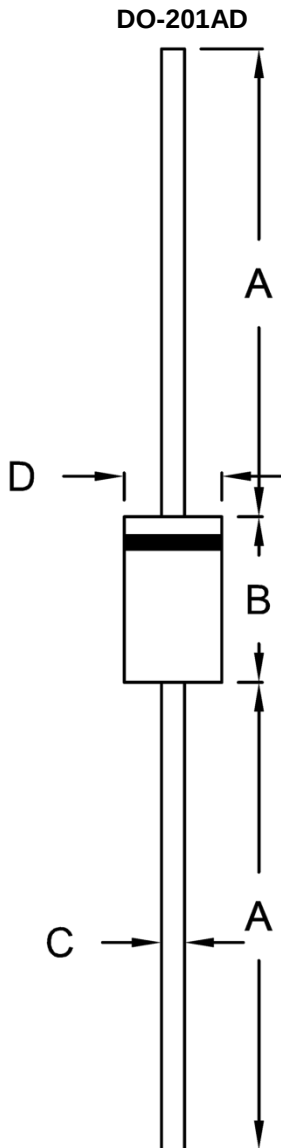
CHARACTERISTICS CURVES

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

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Purchasers are solely responsible for the choice, selection, and use of TSC products and TSC assumes no liability for application assistance or the design of Purchasers' products.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.