

12A, 20V - 40V 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	12	A
V_{RRM}	20 - 40	V
I_{FSM}	320	A
$T_{J\ MAX}$	150	°C
Package	DO-201AD	
Configuration	Single die	



DO-201AD



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	SR1202	SR1203	SR1204	UNIT
Marking code on the device		SR1202	SR1203	SR1204	
Repetitive peak reverse voltage	V_{RRM}	20	30	40	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	V
Forward current	I_F	12			A
Surge peak forward current, single half sine wave superimposed on rated load	$t = 8.3\text{ms}$	I_{FSM} 320			A
	$t = 10\text{ms}$	280			A
Peak repetitive forward current, $f > 15\text{Hz}$	I_{FRM}	55			A
Junction temperature in DC forward mode	T_J	-55 to +150 ≤ 200			°C
Storage temperature	T_{STG}	-55 to +150			°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	3	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	24	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 5\text{A}, T_J = 25^\circ\text{C}$	V_F	-	0.45	V
	$I_F = 12\text{A}, T_J = 25^\circ\text{C}$		-	0.55	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	500	μA
	$T_J = 100^\circ\text{C}$		-	20	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
SR12x	DO-201AD	1,250 / Tape & Reel
SR12x A0G	DO-201AD	500 / Ammo box
SR12xH	DO-201AD	1,250 / Tape & Reel
SR12xHA0G	DO-201AD	500 / Ammo box

Notes:

1. "x" defines voltage from 20V (SR1202) to 40V (SR1204)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

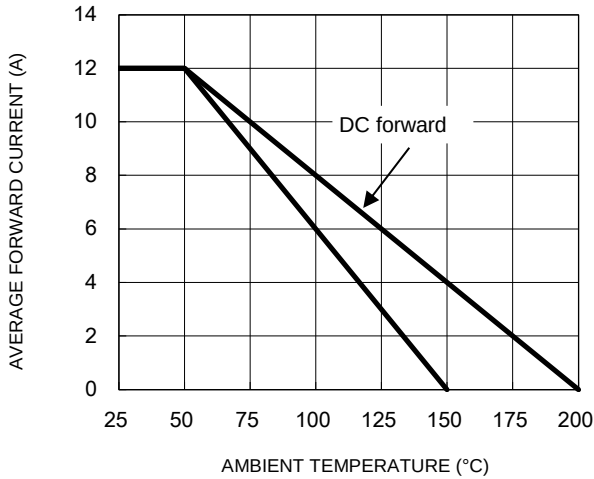


Fig.2 Typical Junction Capacitance

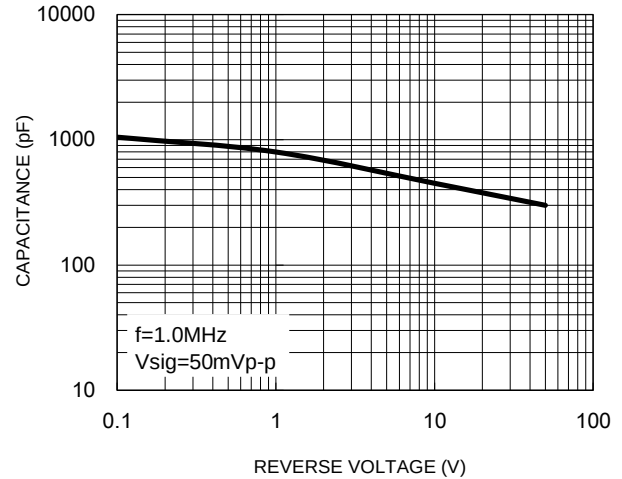


Fig.3 Typical Reverse Characteristics

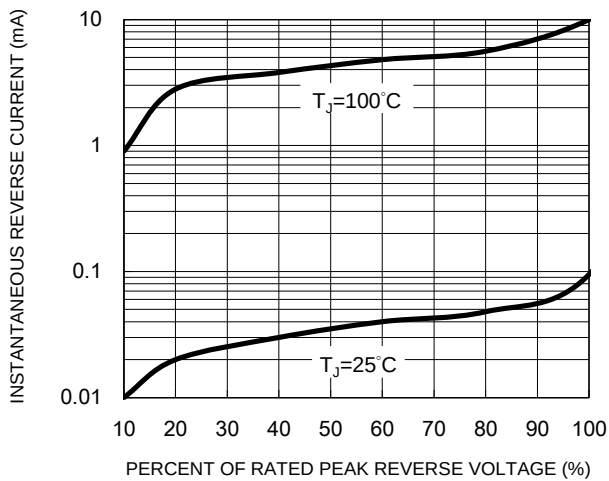


Fig.4 Typical Forward Characteristics

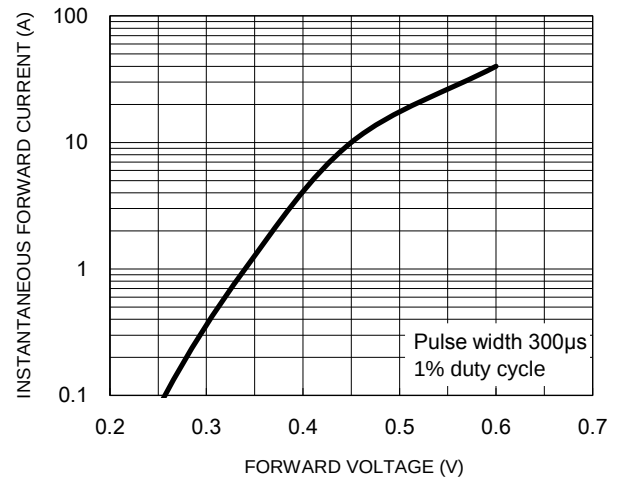
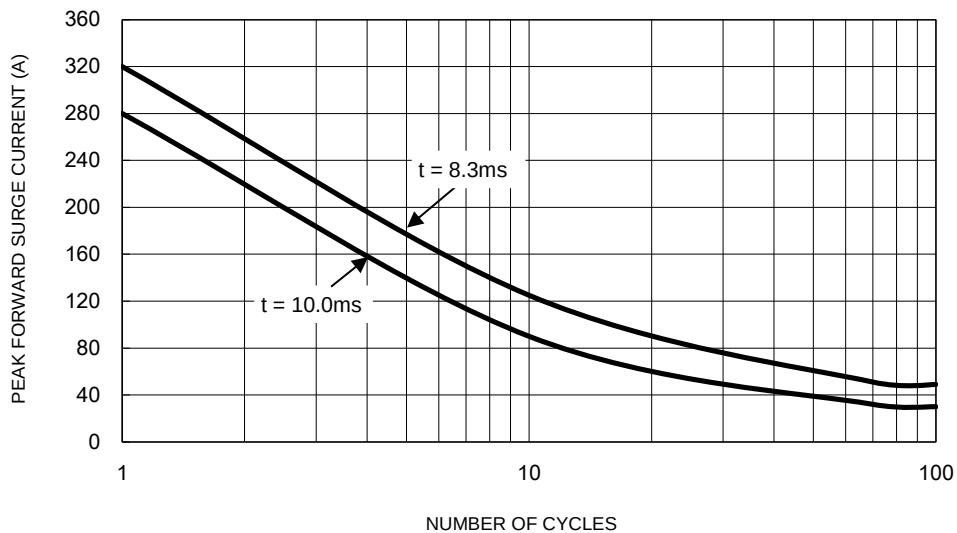


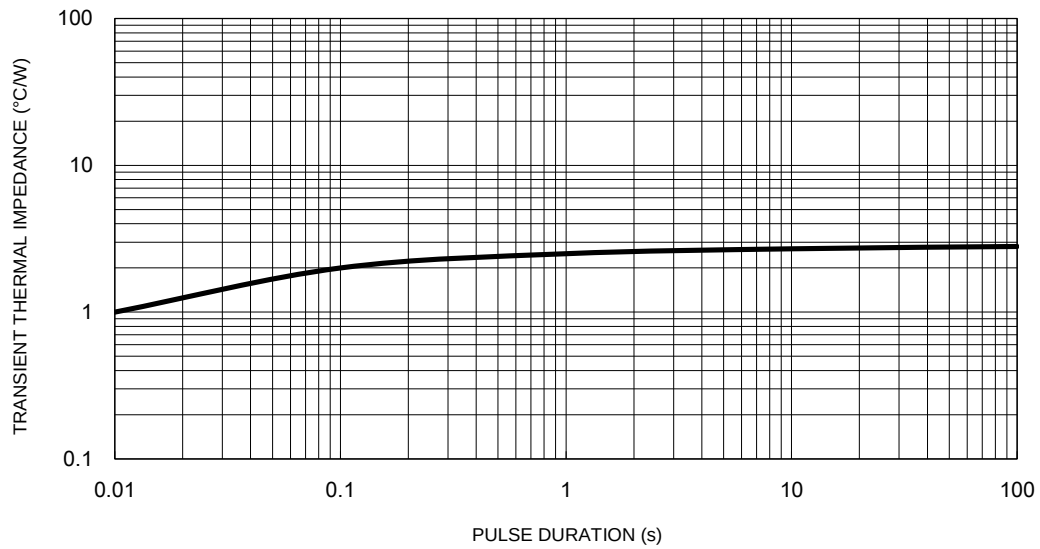
Fig.5 Maximum Non-Repetitive Forward Surge Current



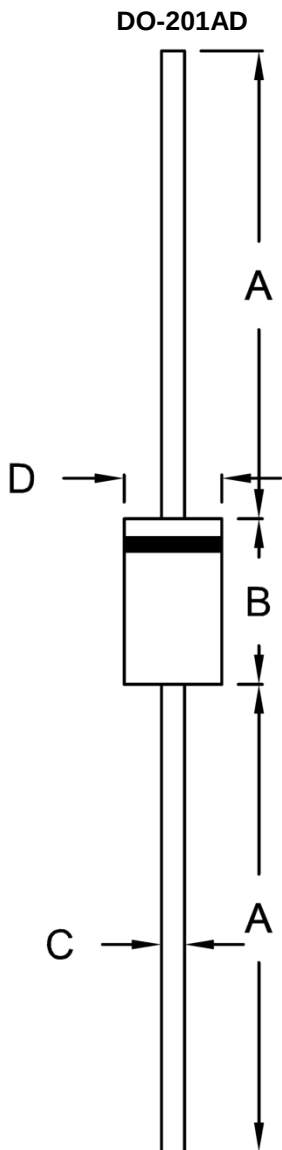
CHARACTERISTICS CURVES

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