

## 0.5A, 20V - 100V 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-204AL (DO-41)
- 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: 0.330g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	0.5	A
$V_{RRM}$	20 - 100	V
$I_{FSM}$	30	A
$T_{JMAX}$	125, 150	°C
Package	DO-204AL (DO-41)	
Configuration	Single die	



**DO-204AL (DO-41)**



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	SR 002	SR 003	SR 004	SR 005	SR 006	SR 009	SR 010	UNIT
Marking code on the device		SR 002	SR 003	SR 004	SR 005	SR 006	SR 009	SR 010	
Repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	90	100	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	35	42	63	70	V
Forward current	$I_F$	0.5							A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	30							A
Junction temperature	$T_J$	-55 to +125			-55 to +150				°C
Storage temperature	$T_{STG}$	-55 to +150							°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-ambient thermal resistance	$R_{\theta JA}$	50	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)						
<b>PARAMETER</b>		<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage <sup>(1)</sup>	SR002 SR003 SR004	$I_F = 0.5\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	0.55	V
	SR005 SR006			-	0.70	V
	SR009 SR010			-	0.85	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	SR002 SR003 SR004 SR006	$T_J = 25^\circ\text{C}$	$I_R$	-	500	$\mu\text{A}$
	SR009 SR010			-	100	$\mu\text{A}$
	SR002 SR003 SR004	$T_J = 100^\circ\text{C}$		-	10	mA
	SR005 SR006			-	5	mA
	SR009 SR010			-	-	mA
	SR002 SR003 SR004	$T_J = 125^\circ\text{C}$		-	-	mA
	SR005 SR006			-	-	mA
	SR009 SR010			-	2	mA
	Junction capacitance	SR002 SR003 SR004		1MHz, $V_R = 4.0\text{V}$	$C_J$	110
SR005 SR006		80	-			pF
SR009 SR010		65	-			pF

**Notes:**

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

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b> <sup>(1)(2)</sup>	<b>PACKAGE</b>	<b>PACKING</b>
SR0x	DO-204AL (DO-41)	5,000 / Tape & Reel
SR0x A0G	DO-204AL (DO-41)	3,000 / Ammo box
SR0xH	DO-204AL (DO-41)	5,000 / Tape & Reel
SR0xHA0G	DO-204AL (DO-41)	3,000 / Ammo box

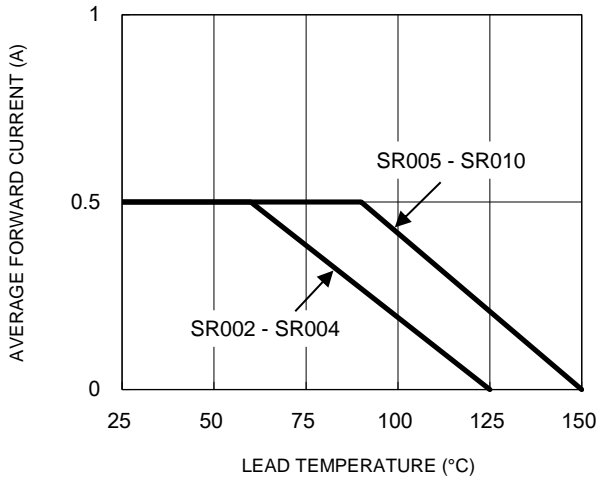
**Notes:**

1. "x" defines voltage from 20V (SR002) to 100V (SR010)
2. "H" means AEC-Q101 qualified

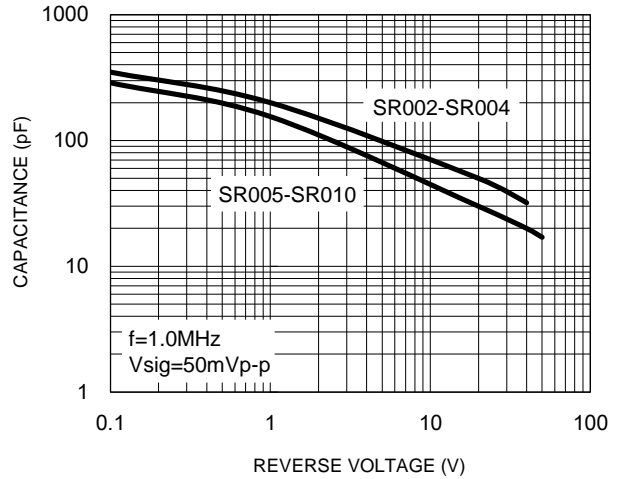
**CHARACTERISTICS CURVES**

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

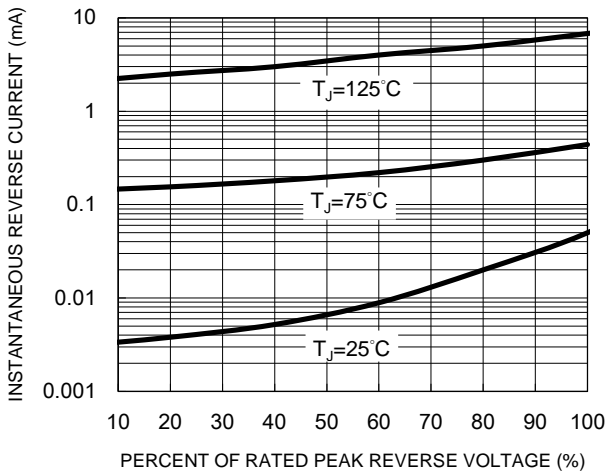
**Fig.1 Forward Current Derating Curve**



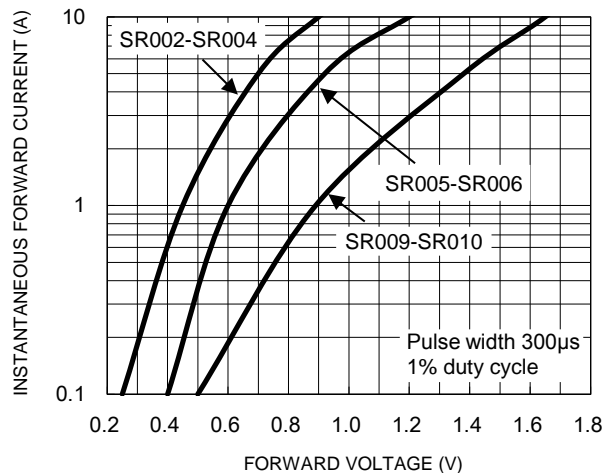
**Fig.2 Typical Junction Capacitance**



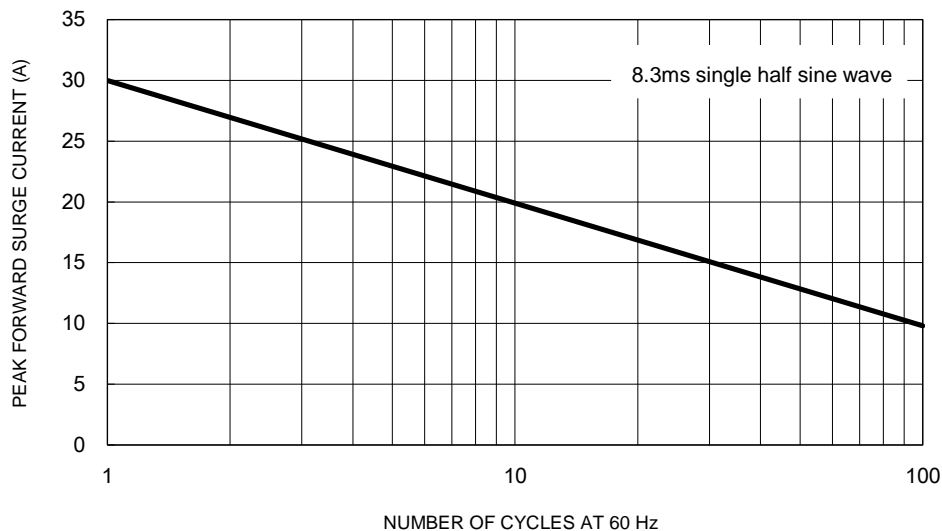
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



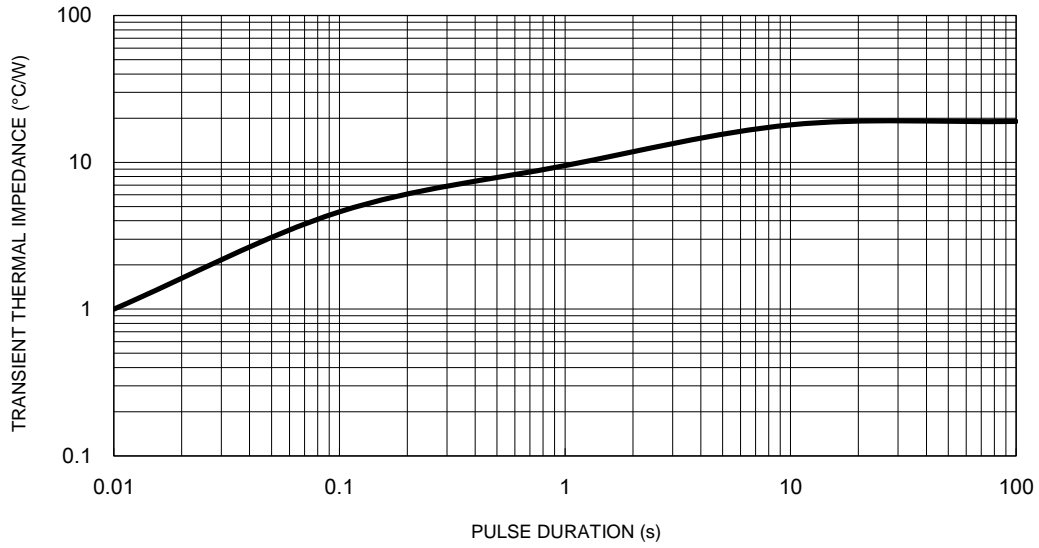
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



**CHARACTERISTICS CURVES**

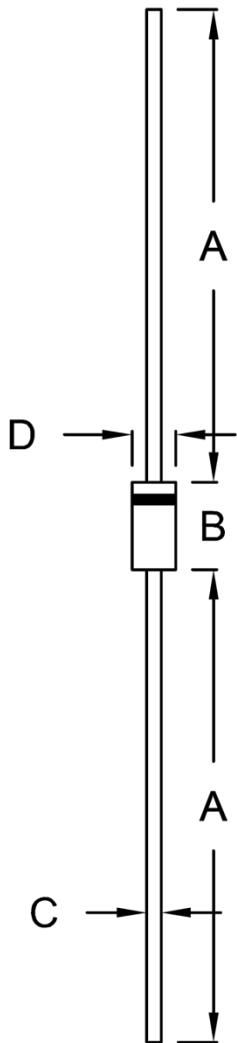
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.6 Typical Transient Thermal Characteristics**



**PACKAGE OUTLINE DIMENSIONS**

DO-204AL (DO-41)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	4.20	5.20	0.165	0.205
C	0.71	0.86	0.028	0.034
D	2.00	2.70	0.079	0.106

**MARKING DIAGRAM**



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

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