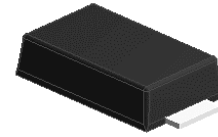


## 5A,40V Schottky Barrier Rectifier

### Features

- Low leakage current
- Schottky barrier diode
- Low forward voltage drop
- Moisture sensitivity: level 1, per J-STD-020
- Halogen-free according to IEC 61249-2-21 definition
- High temperature soldering guaranteed: 260°C/10 seconds
- AEC-Q101 qualified



eSGB (DO-221AC)

### Applications

For use in low voltage, high frequency inverters, free-wheeling and polarity protection application.

Maximum Ratings & Electrical Characteristics (T <sub>A</sub> =25°C unless otherwise noted)			
Parameter	Symbol	ALS54	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	40	V
Maximum RMS voltage	V <sub>RMS</sub>	28	V
Maximum DC blocking voltage	V <sub>DC</sub>	40	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	5	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load per diode	I <sub>FSM</sub>	150	A
Operating junction temperature range	T <sub>J</sub>	-55 to +125	°C
Storage temperature range	T <sub>STG</sub>	-55 to +150	°C

Thermal-Mechanical Specifications (T <sub>A</sub> =25°C unless otherwise noted)			
Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	85	°C / W
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	15	°C / W
Thermal Resistance, Junction to Lead	R <sub>θJL</sub>	18	°C / W

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

Parameter	Symbol	Test Conditions	ALS54	Unit
Forward Drop Voltage	$V_F$	$I_F=5\text{A}$ $T_A=25^{\circ}\text{C}$	0.55	V
		$I_F=5\text{A}$ $T_A=125^{\circ}\text{C}$	0.45	
Reverse leakage current @ $V_R$	$I_R$	$T_J=25^{\circ}\text{C}$	300	$\mu\text{A}$
		$T_J=100^{\circ}\text{C}$	20	mA
Typical junction capacitance	$C_J$	4.0 V 1 MHz	310	pF

Note:

1. Mounted on copper pad area of 0.2x0.2" (5.0 x 5.0mm) to each terminal.

## Ratings and Characteristics Curves

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

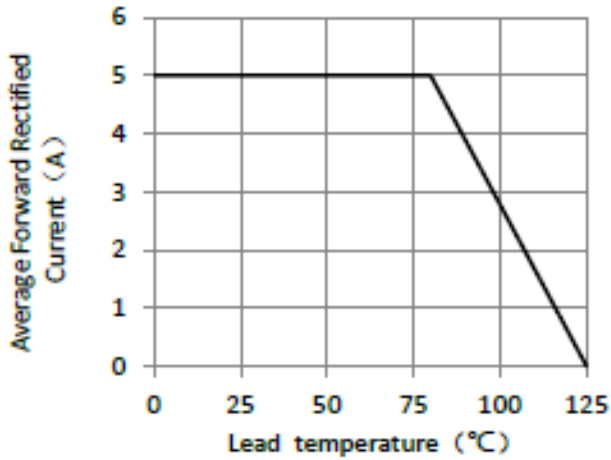


Figure 1. Forward Current Derating Curve

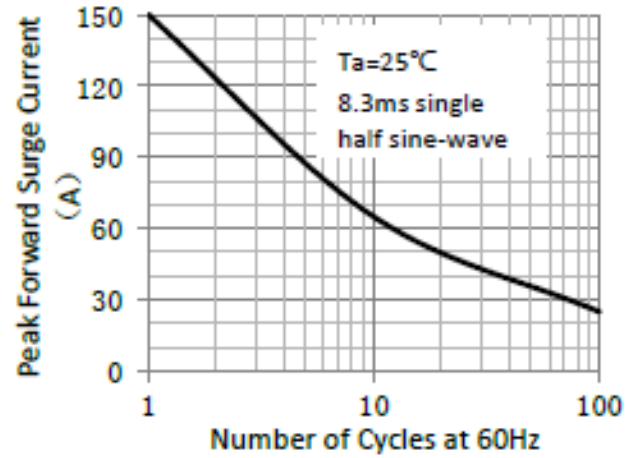


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

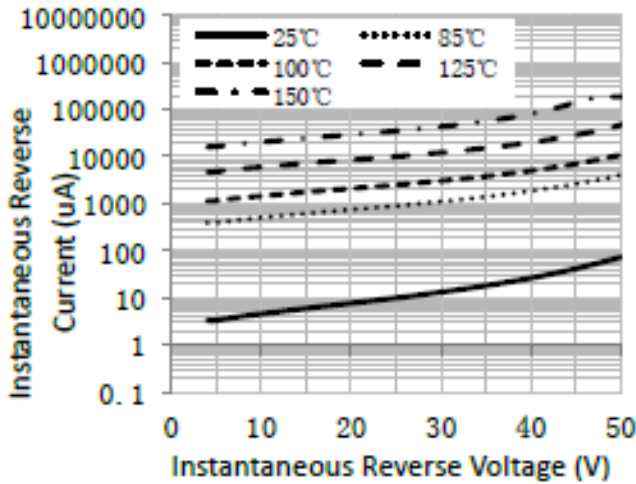


Figure 3. Typical Reverse Characteristics

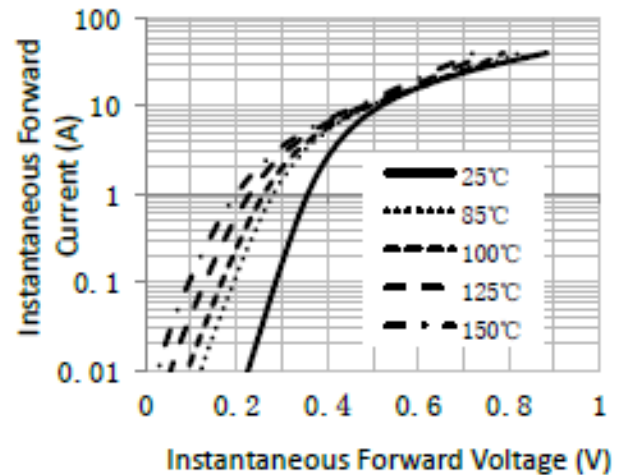


Figure 4. Typical Instantaneous Forward Characteristics

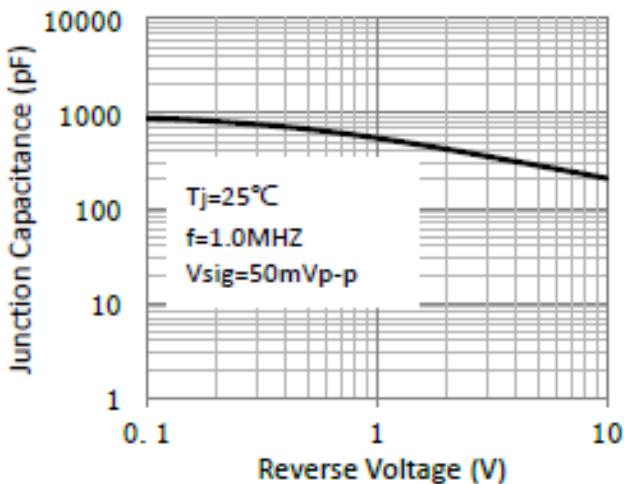
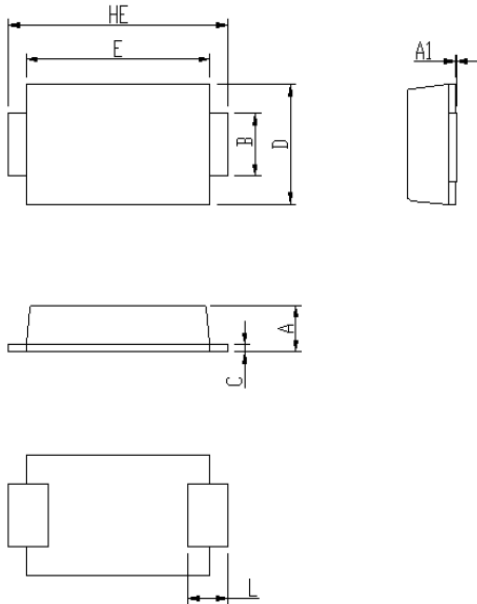


Figure 5. Typical Junction Capacitance

## Package Outline Dimensions

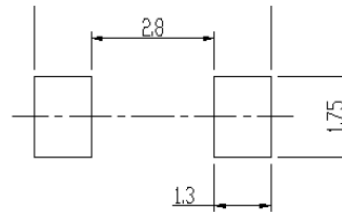
in inches (millimeters)

### eSGB (DO-221AC)



DIM	Unit: mm		Unit: inch	
	MIN	MAX	MIN	MAX
A	0.92	1.08	0.036	0.043
A1	0	0.1	0.000	0.004
B	1.25	1.45	0.049	0.057
C	0.1	0.25	0.004	0.010
D	2.6	2.8	0.102	0.110
E	4.1	4.3	0.161	0.169
L	0.7	1.1	0.028	0.043
HE	4.8	5.2	0.189	0.205

Soldering footprint



## Revision History

Document Version	Date of release	Description of changes
Rev.A	2021.06.01	Released Datasheet
Rev.B	2023.12.14	Modify document format
Rev.C	2023.12.29	Modify package name

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