

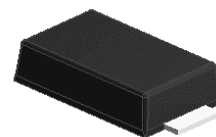
## 1A,400V Superfast Rectifier

### Features

- Low leakage current
- Low forward voltage drop
- Glass passivated chip junction
- 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



**RoHS**  
COMPLIANT



eSGB (DO-221AC)

### Applications

For use in secondary rectification and freewheeling for superfast switching speeds of converters in consumer applications.

| Maximum Ratings & Electrical Characteristics (T <sub>A</sub> =25°C unless otherwise noted) |                    |             |      |
|--|--------------------|-------------|------|
| Parameter  | Symbol             | ES1HGL      | Unit |
| Maximum repetitive peak reverse voltage  | V <sub>RRM</sub>   | 400         | V    |
| Maximum RMS voltage  | V <sub>RMS</sub>   | 280         | V    |
| Maximum DC blocking voltage  | V <sub>DC</sub>    | 400         | V    |
| Maximum average forward rectified current  | I <sub>F(AV)</sub> | 1           | A    |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load         | I <sub>FSM</sub>   | 30          | A    |
| Operating junction temperature range   | T <sub>J</sub>     | -55 to +175 | °C   |
| Storage temperature range  | T <sub>STG</sub>   | -55 to +175 | °C   |

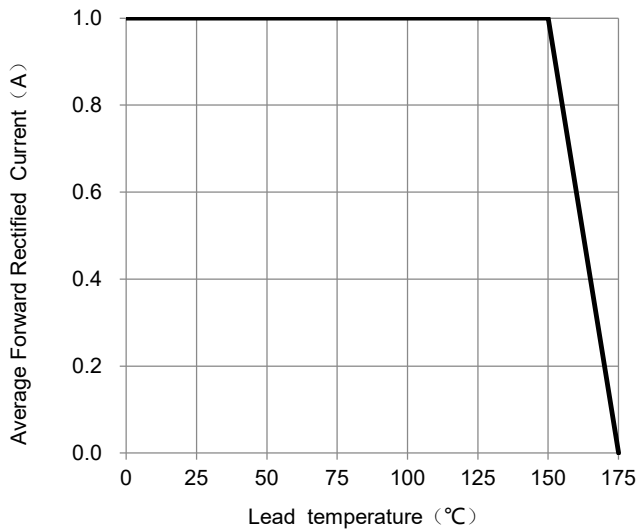
| Thermal-Mechanical Specifications (T <sub>A</sub> =25°C unless otherwise noted) |                   |     |       |
|---|-------------------|-----|-------|
| Parameter   | Symbol            | Typ | Unit  |
| Thermal Resistance, Junction to Ambient   | R <sub>thJA</sub> | 85  | °C /W |
| Thermal Resistance,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

| Electrical Specifications( $T_A=25^{\circ}\text{C}$ unless otherwise noted) |          |  |        |               |
|---|----------|--|--------|---------------|
| Parameter   | Symbol   | Test Conditions  | ES1HGL | Unit          |
| Maximum forward drop voltage  | $V_F$    | $I_F=1\text{A}$  | 1.25   | V             |
| Maximum reverse leakage current @ $V_R$                                     | $I_R$    | $T_J=25^{\circ}\text{C}$   | 5      | $\mu\text{A}$ |
| Typical junction capacitance  | $C_J$    | $V_R=4.0\text{V}$ , $f=1\text{MHz}$                              | 22     | pF            |
| Maximum reverse recovery time   | $t_{rr}$ | $I_F=0.5\text{A}$ , $I_R=1.0\text{A}$ ,<br>$I_{RR}=0.25\text{A}$ | 25     | ns            |

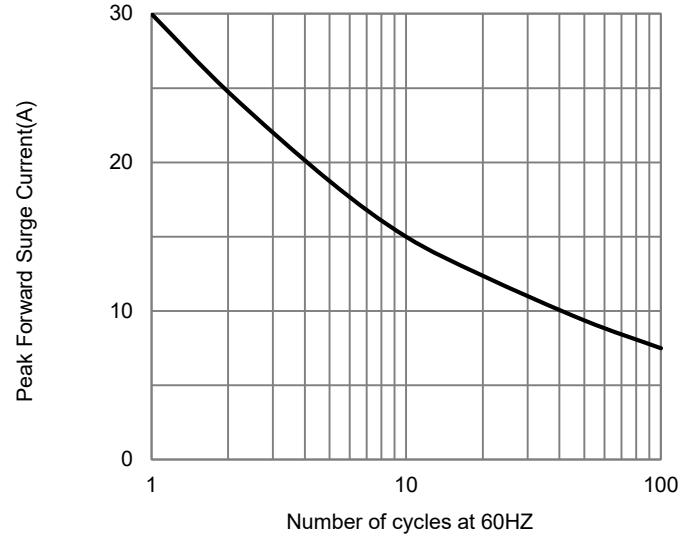
Note:

1. Mounted on copper pad area of 5 x 5mm to each terminal.

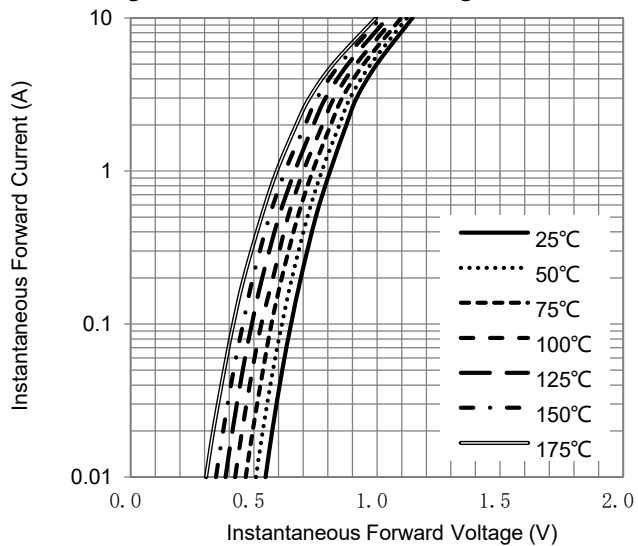
## Ratings and Characteristics Curves (T<sub>A</sub> = 25°C unless otherwise noted)



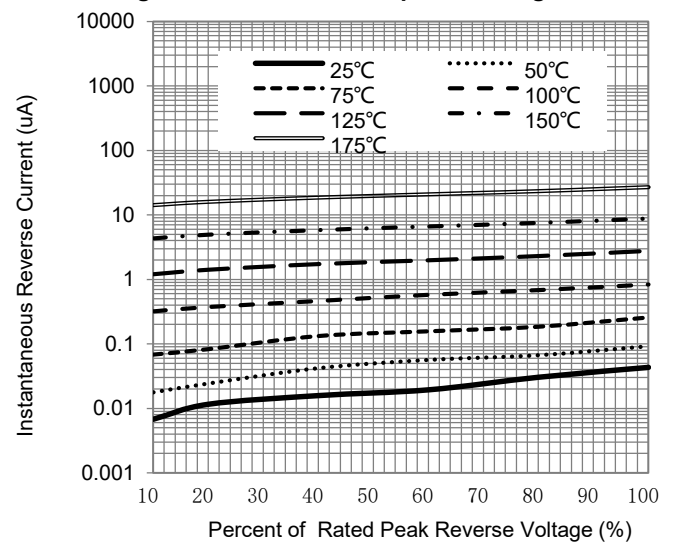
**Fig.1 –Forward Current Derating Curve**



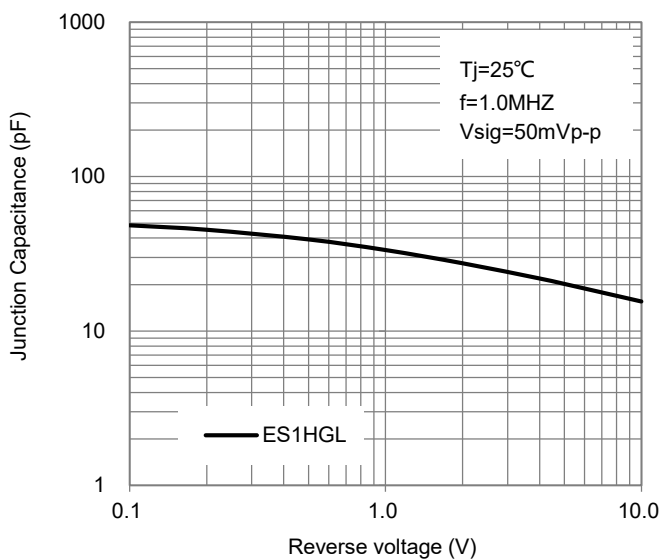
**Fig.2 – Maximum Non-Repetitive Surge Current**



**Fig.3 –Typical Forward Voltage Characteristics**



**Fig.4 –Typical Reverse Current Characteristics**

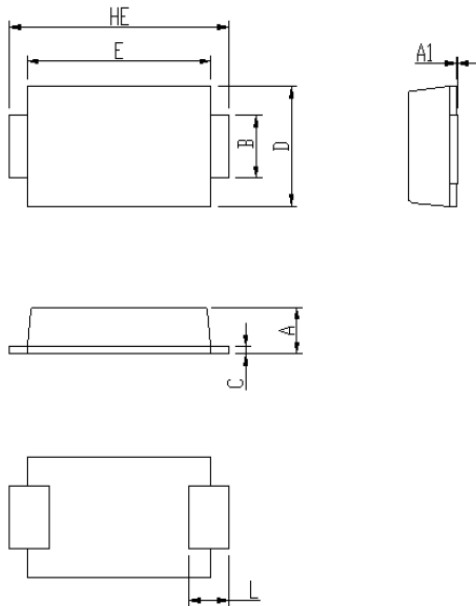


**Fig.5 –Typical Junction Capacitance**

## Package Outline Dimensions

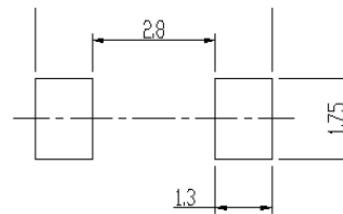
in inches (millimeters)

### 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



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