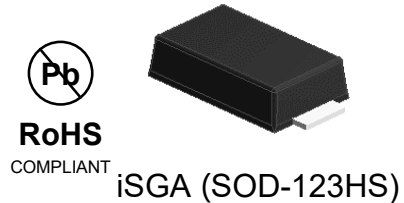


## 1A,50-1000V Fast Recovery Rectifiers

### 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



### Applications

For use of fast switching rectification in lighting, cellular phone, portable device, power supplies and other consumer applications.

| Maximum Ratings & Electrical Characteristics (T <sub>A</sub> =25°C unless otherwise noted)   |                    |             |     |     |     |     |     |      |      |
|--|--------------------|-------------|-----|-----|-----|-----|-----|------|------|
| Parameter  | Symbol             | PF1         | PF2 | PF3 | PF4 | PF5 | PF6 | PF7  | Unit |
| Maximum repetitive peak reverse voltage  | V <sub>RRM</sub>   | 50          | 100 | 200 | 400 | 600 | 800 | 1000 | V    |
| Maximum RMS voltage  | V <sub>RMS</sub>   | 35          | 70  | 140 | 280 | 420 | 560 | 700  | V    |
| Maximum DC blocking voltage  | V <sub>DC</sub>    | 50          | 100 | 200 | 400 | 600 | 800 | 1000 | 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 per diode | I <sub>FSM</sub>   | 30          |     |     |     |     |     |      | A    |
| Operating junction temperature range   | T <sub>J</sub>     | -55 to +150 |     |     |     |     |     |      | °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> | 63  | °C / W |
| Thermal Resistance, Junction to Case  | R <sub>θJC</sub> | 39  | °C / W |
| Thermal Resistance, Junction to Lead  | R <sub>θJL</sub> | 9   | °C / W |

| Electrical Specifications (T <sub>A</sub> =25°C unless otherwise noted) |                 |  |      |     |     |     |     |     |     |      |
|---|-----------------|--|------|-----|-----|-----|-----|-----|-----|------|
| Parameter   | Symbol          | Test Conditions  | PF1  | PF2 | PF3 | PF4 | PF5 | PF6 | PF7 | Unit |
| Forward Drop Voltage  | V <sub>F</sub>  | I <sub>F</sub> =1A<br>T <sub>A</sub> =25°C                               | 1.30 |     |     |     |     |     | V   |      |
|   |                 | I <sub>F</sub> =1A<br>T <sub>A</sub> =125°C                              | 0.98 |     |     |     |     |     |     |      |
| Reverse leakage current @V <sub>R</sub>                                 | I <sub>R</sub>  | T <sub>J</sub> =25°C   | 5    |     |     |     |     |     | uA  |      |
|   |                 | T <sub>J</sub> =125°C  | 50   |     |     |     |     |     |     |      |
| Typical junction capacitance  | C <sub>J</sub>  | 4.0 V<br>1 MHz   | 7.5  |     |     |     |     |     | pF  |      |
| Maximum reverse recovery time   | t <sub>rr</sub> | I <sub>F</sub> =0.5A,<br>I <sub>R</sub> =1.0A,<br>I <sub>RR</sub> =0.25A | 150  |     |     |     | 250 |     |     | nS   |

Note:

1. The thermal resistance from junction to ambient or lead, mounted on copper pad area of 5.0 x 5.0mm to each terminal.
2. The thermal resistance from junction to case, mounted on recommended copper pad to each terminal.

## Ratings and Characteristics Curves

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

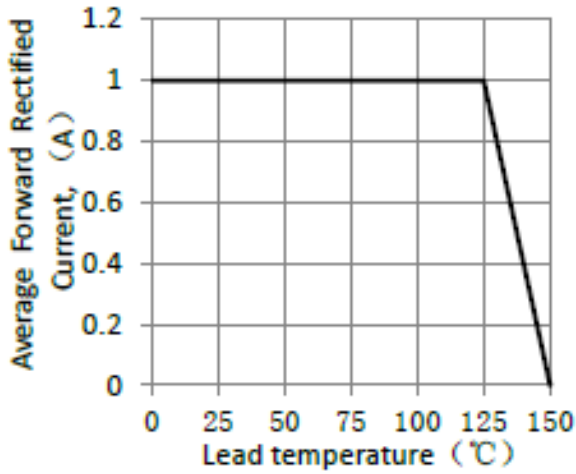


Figure 1. Forward Current Derating Curve

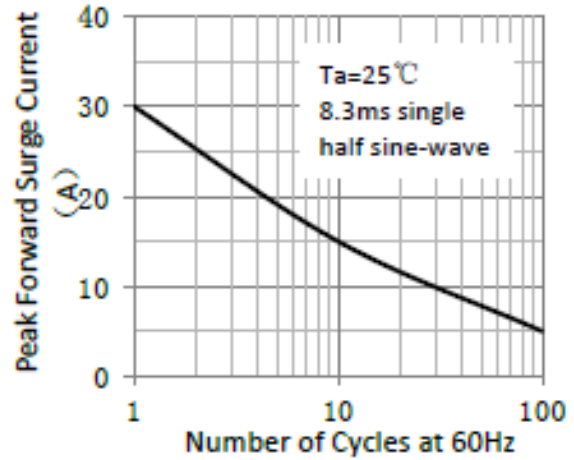


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

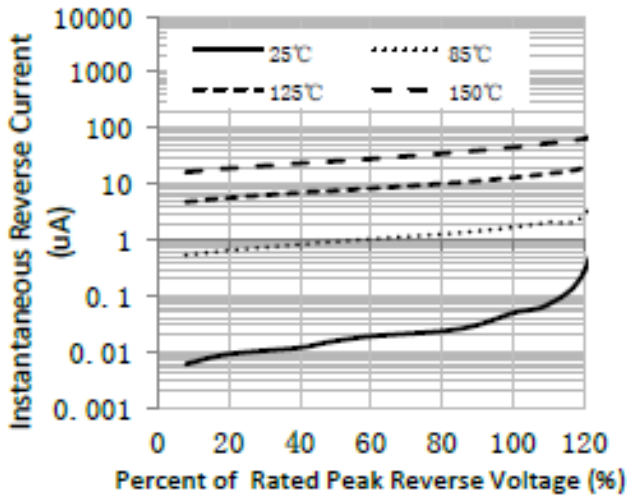


Figure 3. Typical Reverse Characteristics

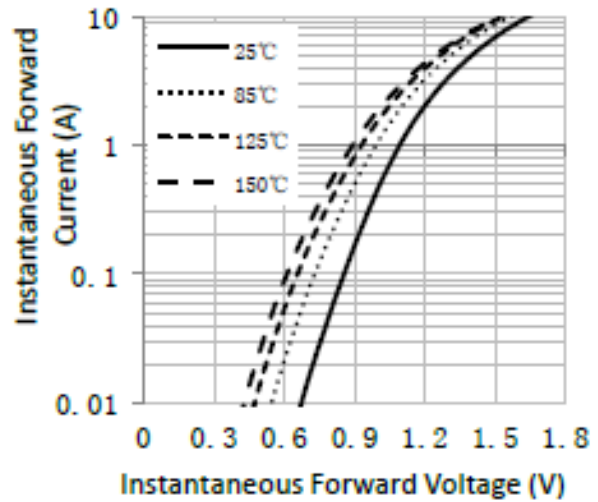


Figure 4. Typical Instantaneous Forward Characteristics

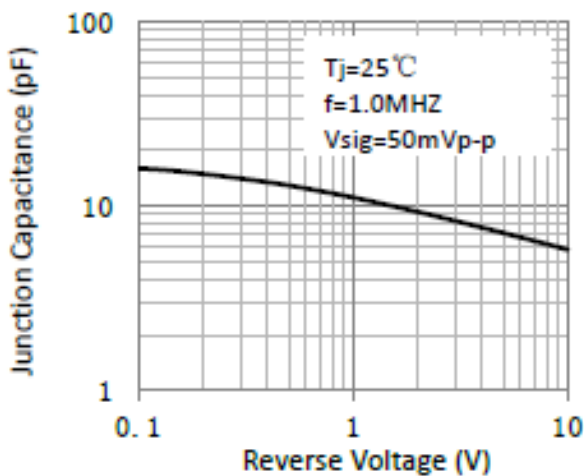
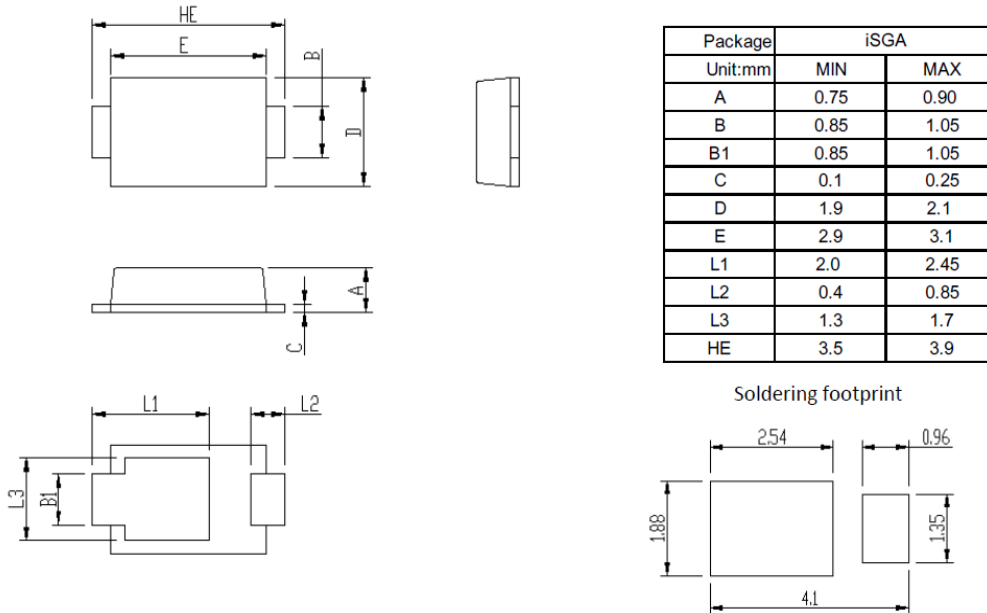


Figure 5. Typical Junction Capacitance

## Package Outline Dimensions

in inches (millimeters)

### iSGA (SOD-123HS)



## Revision History

| Document Version | Date of release | Description of changes |
|------------------|-----------------|------------------------|
| Rev.A            | 2021.06.01      | Released Datasheet     |
| Rev.B            | 2023.10.17      | Modify document format |

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