

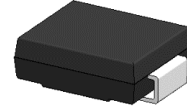
## 3A,50-1000V High Efficient Rectifiers

### 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



**RoHS**  
COMPLIANT



SMC (DO-214AB)

### 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             | HS3A        | HS3B | HS3D | HS3G | HS3J | HS3K | HS3M | 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> | 3           |      |      |      |      |      |      | A    |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load per diode | I <sub>FSM</sub>   | 125         |      |      |      |      |      |      | 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> | 65  | °C / W |
| Thermal Resistance, Junction to Case  | R <sub>θJC</sub> | 10  | °C / W |
| Thermal Resistance, Junction to Lead  | R <sub>θJL</sub> | 15  | °C / W |

| Electrical Specifications (T <sub>A</sub> =25°C unless otherwise noted) |                 |  |      |      |      |      |      |      |      |      |    |
|---|-----------------|--|------|------|------|------|------|------|------|------|----|
| Parameter   | Symbol          | Test Conditions  | HS3A | HS3B | HS3D | HS3G | HS3J | HS3K | HS3M | Unit |    |
| Forward Drop Voltage  | V <sub>F</sub>  | I <sub>F</sub> =3A<br>T <sub>A</sub> =25°C                               | 1.0  |      |      | 1.3  | 1.7  |      |      | V    |    |
|   |                 | I <sub>F</sub> =3A<br>T <sub>A</sub> =125°C                              | 1.15 |      |      |      |      |      |      |      |    |
| 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   |      |      |      |      | 27.3 |      |      | 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 | 50   |      |      | 75   |      |      | nS   |      |    |

Note:

1. Mounted on copper pad area of 8.0 x 8.0mm to each terminal.

## Ratings and Characteristics Curves

(TA = 25°C unless otherwise noted)

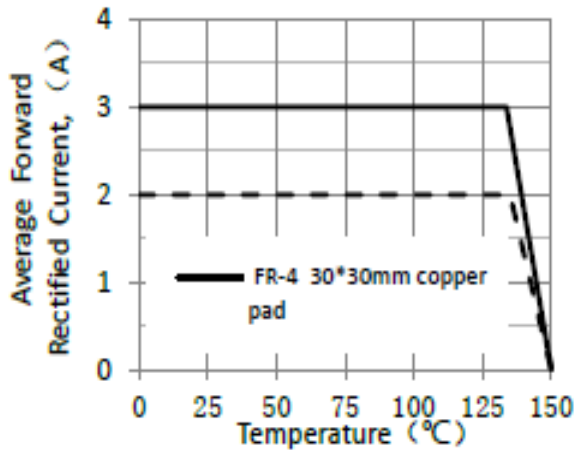


Figure 1. Forward Current Derating Curve

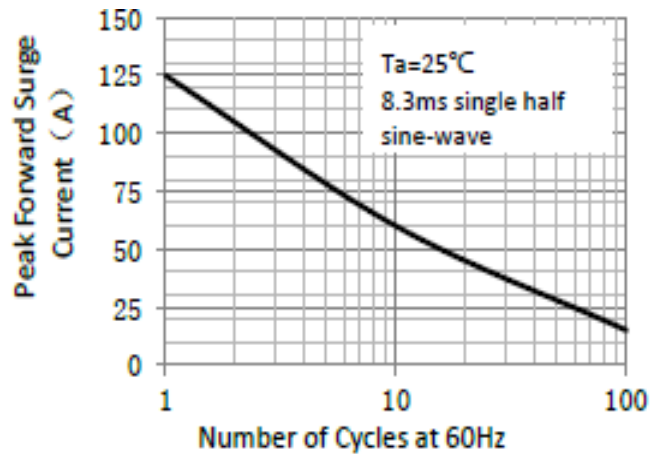


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

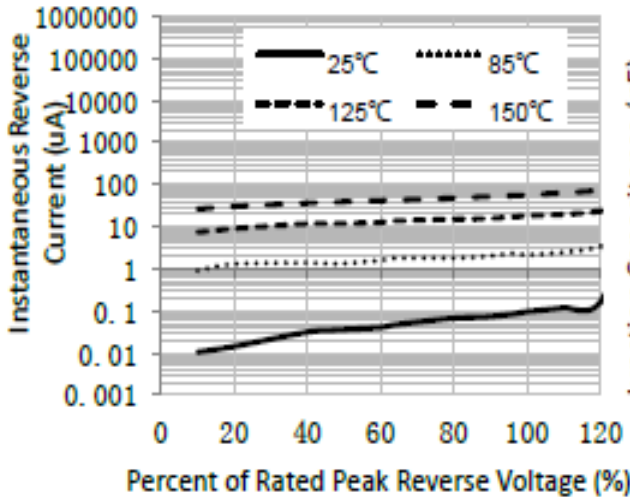


Figure 3. Typical Reverse Characteristics

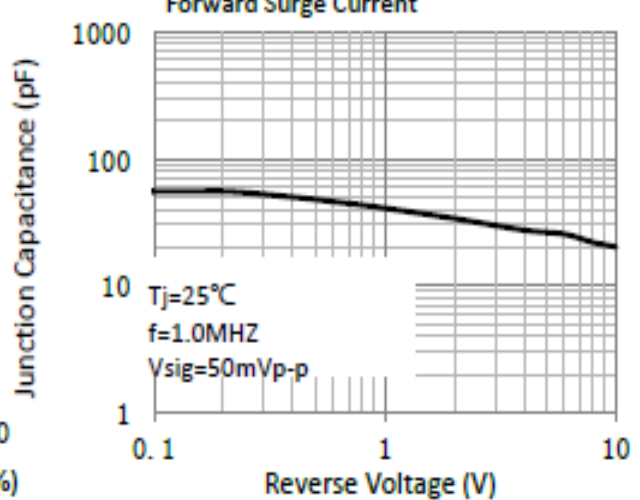


Figure 4. Typical Junction Capacitance

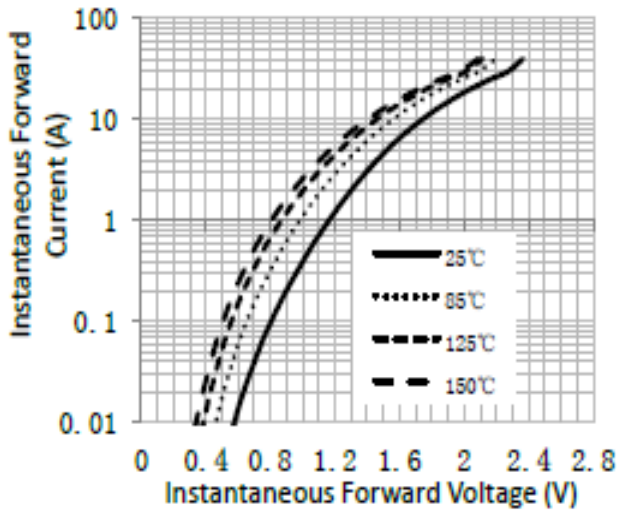
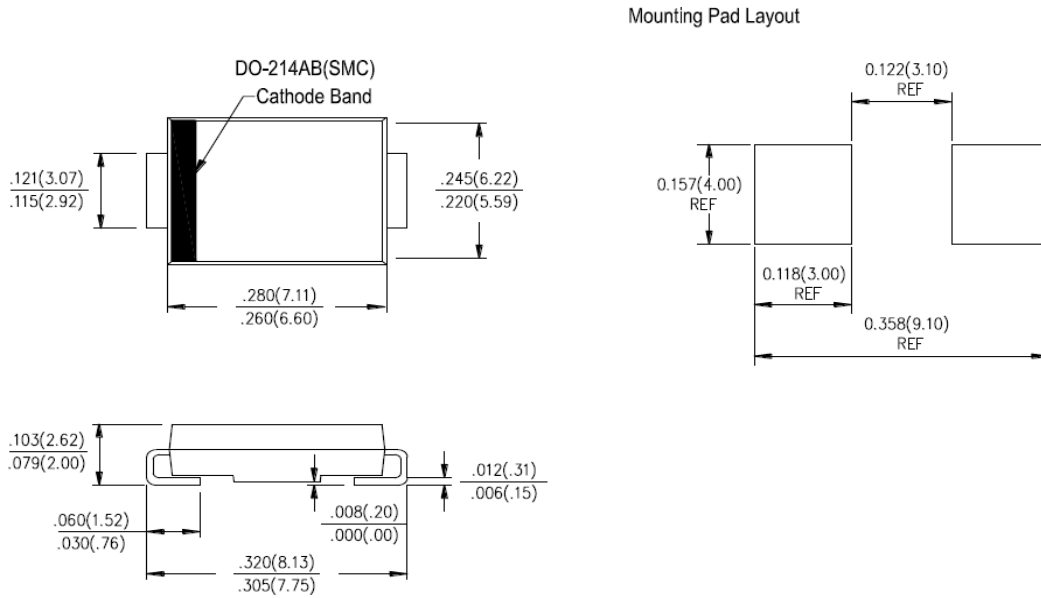


Figure 5. Typical Instantaneous Forward Characteristics

## Package Outline Dimensions

in inches (millimeters)

### SMC (DO-214AB)



## Revision History

| Document Version | Date of release | Description of changes |
|------------------|-----------------|------------------------|
| Rev.A            | 2021.06.01      | Released Datasheet     |
| Rev.B            | 2023.10.20      | Modify document format |

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