

## 4A, 40V Schottky Barrier Surface Mount Rectifier

### FEATURES

- AEC-Q101 qualified
- Low power loss, high efficiency
- Low profile package
- Ideal for automated placement
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

### APPLICATIONS

- Low voltage, high freq. inverter
- DC/DC converter
- Freewheeling diodes
- Reverse battery protection
- Car lighting

### MECHANICAL DATA

- Case: DO-214AA (SMB)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.110g (approximately)

| KEY PARAMETERS |                |      |
|----------------|----------------|------|
| PARAMETER      | VALUE          | UNIT |
| $I_F$          | 4              | A    |
| $V_{RRM}$      | 40             | V    |
| $I_{FSM}$      | 100            | A    |
| $T_{J\ MAX}$   | 150            | °C   |
| Package        | DO-214AA (SMB) |      |
| Configuration  | Single die     |      |



**DO-214AA(SMB)**



| ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)        |              |             |      |
|--|--------------|-------------|------|
| PARAMETER  | SYMBOL       | SSB44H      | UNIT |
| Marking code on the device   |              | SSB44       |      |
| Repetitive peak reverse voltage  | $V_{RRM}$    | 40          | V    |
| Reverse voltage, total rms value   | $V_{R(RMS)}$ | 28          | V    |
| Forward current  | $I_F$        | 4           | A    |
| Surge peak forward current, 8.3ms single half sine-wave superimposed on rated load | $I_{FSM}$    | 100         | A    |
| Junction temperature   | $T_J$        | -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-lead thermal resistance    | $R_{\theta JL}$ | 23         | °C/W        |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 82         | °C/W        |
| Junction-to-case thermal resistance    | $R_{\theta JC}$ | 24         | °C/W        |

**Thermal Performance Note:** Units mounted on PCB (10mm x 10mm Cu pad test board)

| <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>  | $I_F = 2\text{A}, T_J = 25^\circ\text{C}$  | $V_F$         | 0.40       | -          | V             |
|   | $I_F = 4\text{A}, T_J = 25^\circ\text{C}$  |               | 0.46       | 0.50       | V             |
|   | $I_F = 2\text{A}, T_J = 125^\circ\text{C}$ |               | 0.31       | -          | V             |
|   | $I_F = 4\text{A}, T_J = 125^\circ\text{C}$ |               | 0.41       | 0.45       | V             |
| Reverse current @ rated $V_R$ <sup>(2)</sup>  | $T_J = 25^\circ\text{C}$                   | $I_R$         | -          | 200        | $\mu\text{A}$ |
|   | $T_J = 125^\circ\text{C}$                  |               | -          | 40         | mA            |
| Junction capacitance  | 1MHz, $V_R = 4.0\text{V}$                  | $C_J$         | 235        | -          | pF            |

**Notes:**

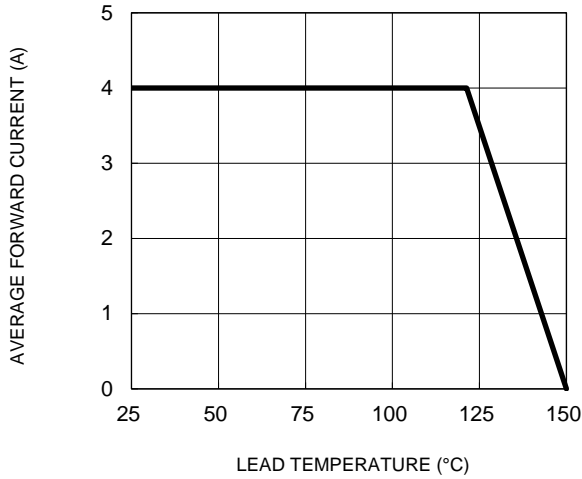
1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

| <b>ORDERING INFORMATION</b> |                |                     |
|-----------------------------|----------------|---------------------|
| <b>ORDERING CODE</b>        | <b>PACKAGE</b> | <b>PACKING</b>      |
| SSB44H                      | DO-214AA (SMB) | 3,000 / Tape & Reel |

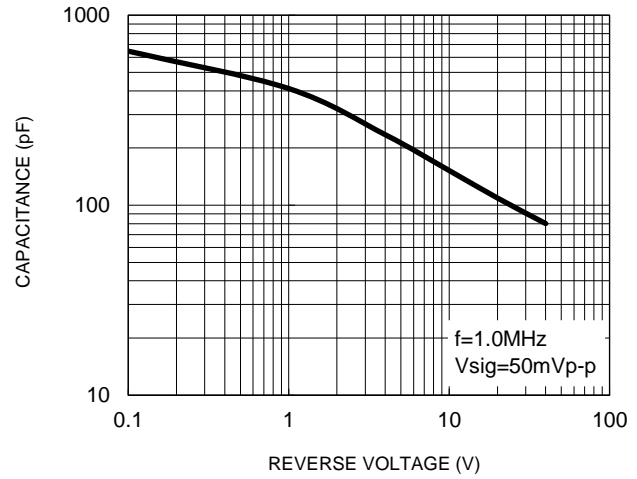
**CHARACTERISTICS CURVES**

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

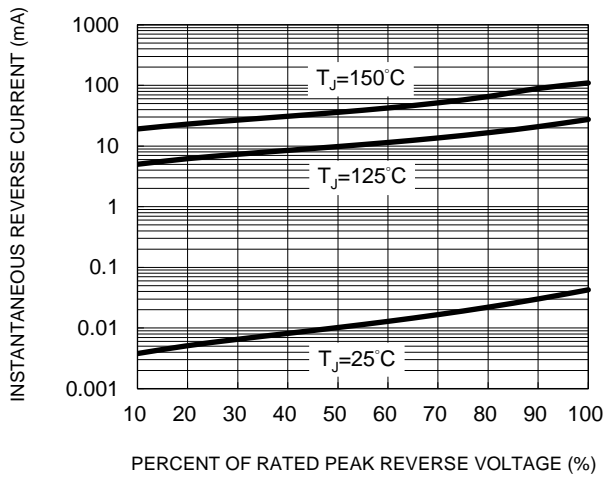
**Fig.1 Forward Current Derating Curve**



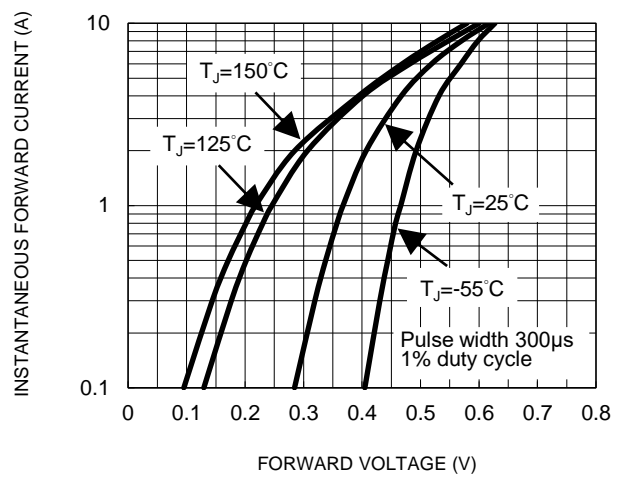
**Fig.2 Typical Junction Capacitance**



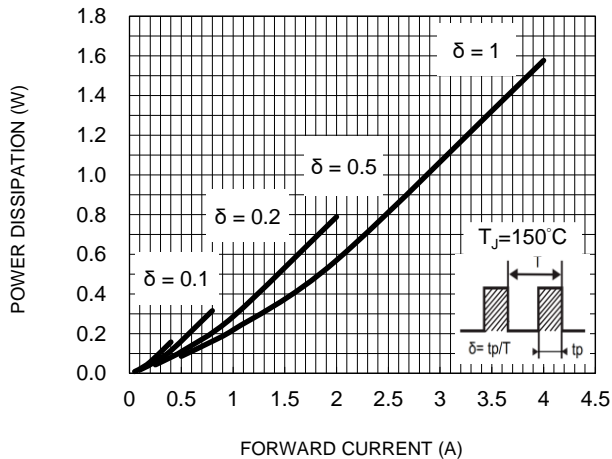
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**

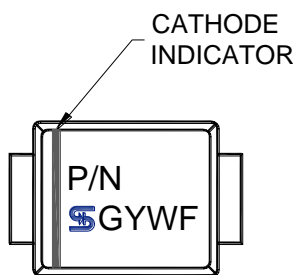
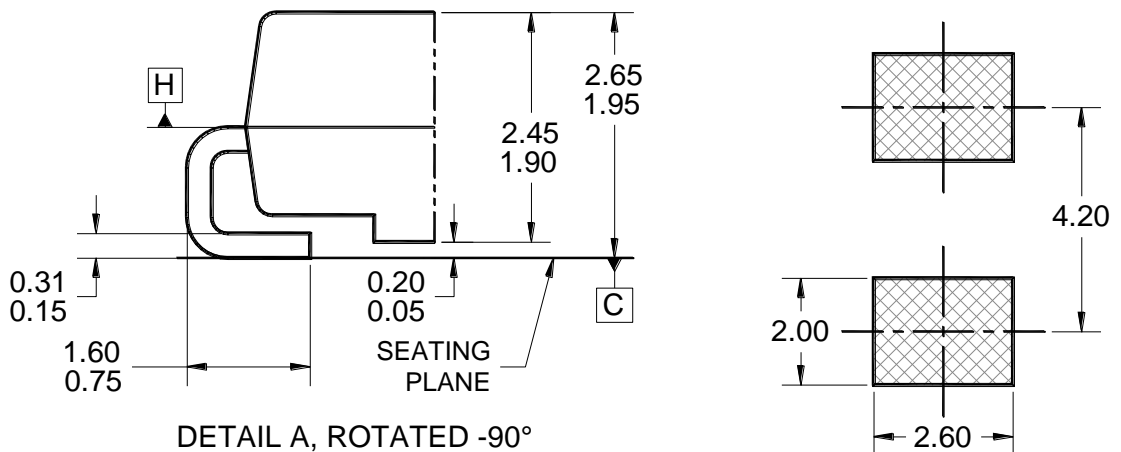
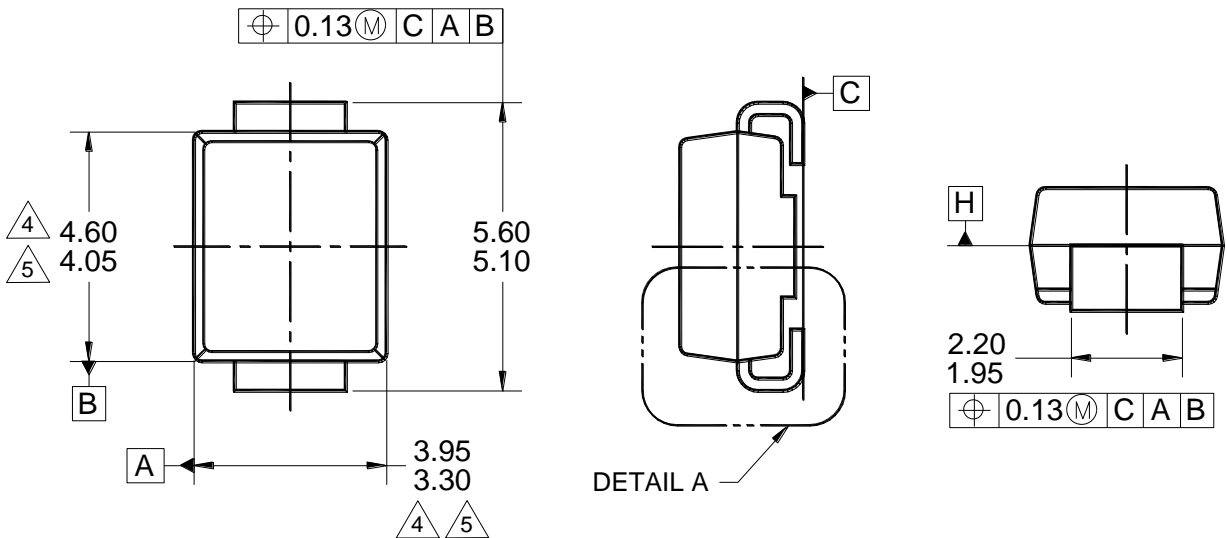


**Fig.5 Typical Forward Power Dissipation vs. Forward Current**



**PACKAGE OUTLINE DIMENSIONS**

**DO-214AA (SMB)**



**MARKING DIAGRAM**

P/N = MARKING CODE  
G = GREEN COMPOUND  
YW = DATE CODE  
F = FACTORY CODE

**NOTES: UNLESS OTHERWISE SPECIFIED**

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-214, VARIATION AA, ISSUE D.
4. MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. MOLDED PLASTIC BODY LATERAL DIMENSIONS TO BE DETERMINED AT DATUM PLANE H.
6. DWG NO. REF: HQ2SD07-DO214SMB-035 REV A.

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