

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

### FEATURES

- 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

- Freewheeling
- Low voltage high frequency inverters
- On-board DC/DC converter

### 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    |
| $T_J \text{ MAX}$ | 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       | SSB44       | 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   |

**THERMAL PERFORMANCE**

| PARAMETER                              | SYMBOL          | TYP | UNIT |
|----------------------------------------|-----------------|-----|------|
| 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)

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

| PARAMETER                                    | CONDITIONS                                 | SYMBOL | TYP  | MAX  | UNIT          |
|----------------------------------------------|--------------------------------------------|--------|------|------|---------------|
| 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  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

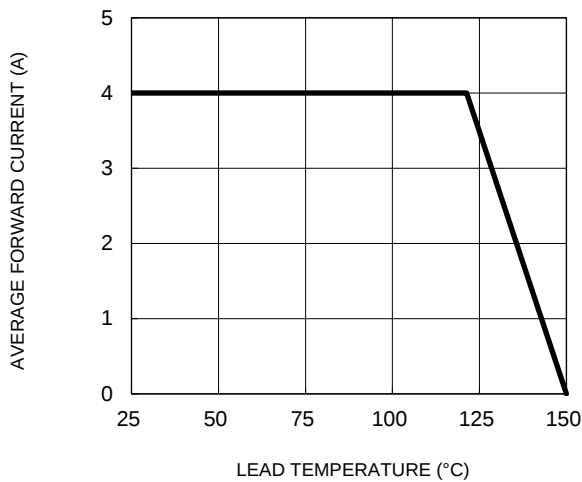
**ORDERING INFORMATION**

| ORDERING CODE | PACKAGE        | PACKING             |
|---------------|----------------|---------------------|
| SSB44         | DO-214AA (SMB) | 3,000 / Tape & Reel |

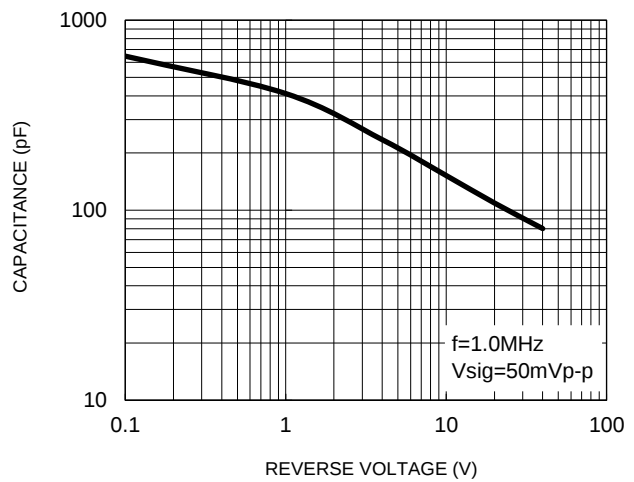
## CHARACTERISTICS CURVES

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

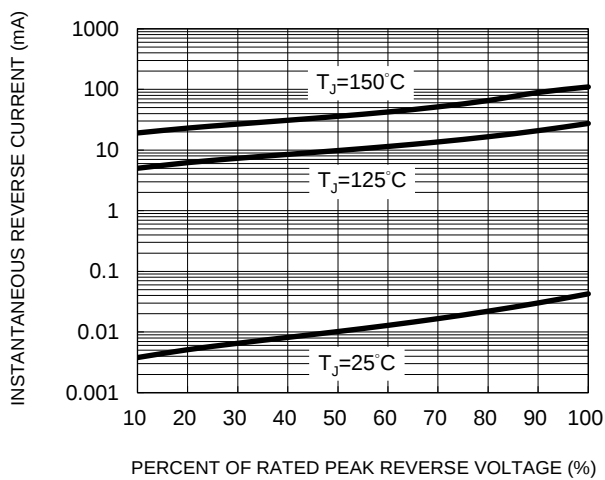
**Fig.1 Forward Current Derating Curve**



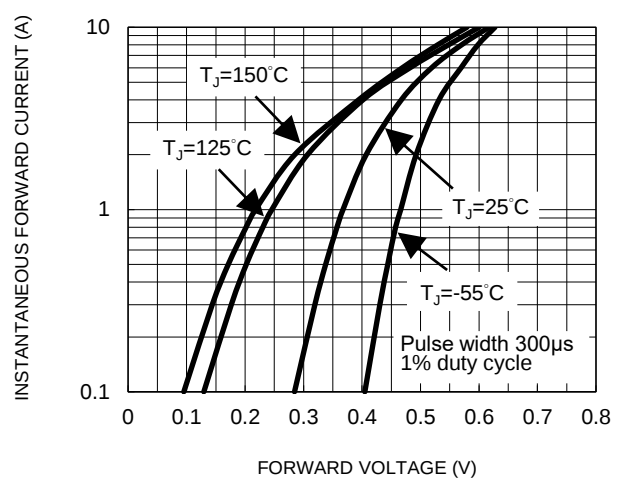
**Fig.2 Typical Junction Capacitance**



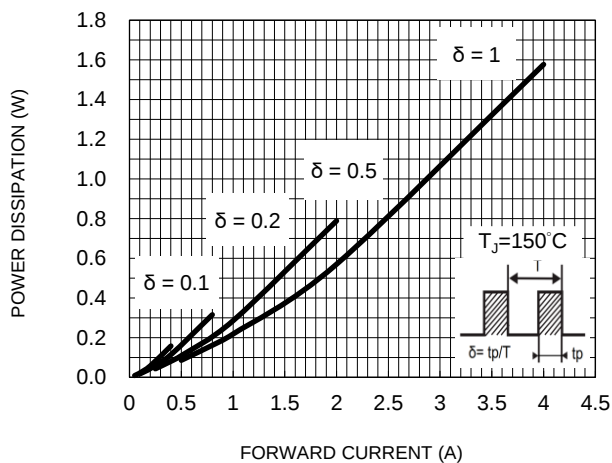
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**

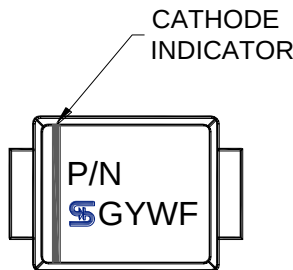
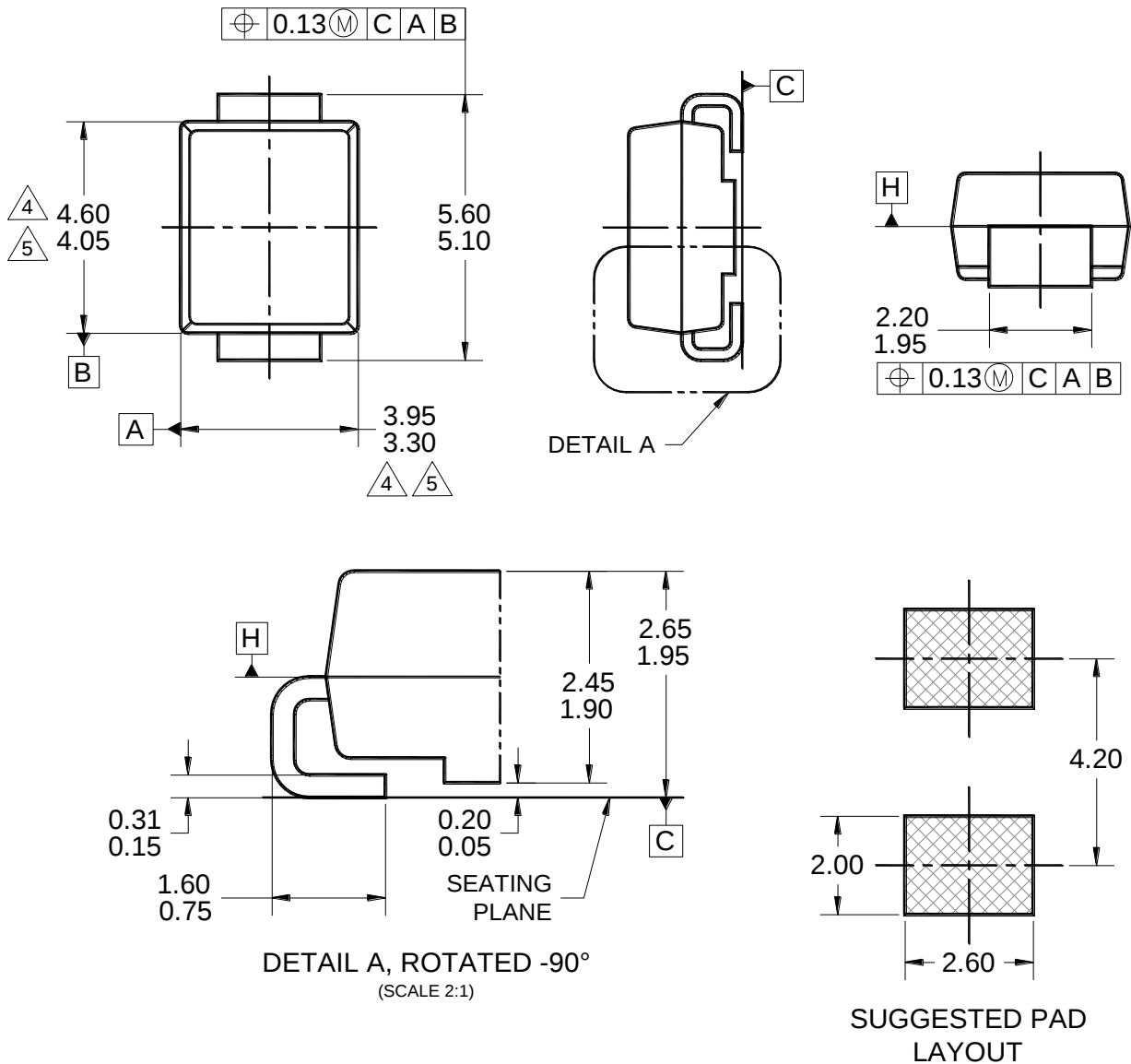


**Fig.5 Typical Forward Power Dissipation vs. Forward Current**



## 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

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

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