

## 2A, 40V Schottky Barrier Surface Mount Rectifier

### FEATURES

- AEC-Q101 qualified
- Low power loss, high efficiency
- 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 frequency
- 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: 0.09g (approximately)

| KEY PARAMETERS |                |      |
|----------------|----------------|------|
| PARAMETER      | VALUE          | UNIT |
| $I_F$          | 2              | A    |
| $V_{RRM}$      | 40             | V    |
| $I_{FSM}$      | 70             | A    |
| $T_{J\ MAX}$   | 175            | °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       | VALUE        | UNIT |
| Repetitive peak reverse voltage  | $V_{RRM}$    | 40           | V    |
| Reverse voltage, total rms value   | $V_{R(RMS)}$ | 28           | V    |
| Forward current  | $I_F$        | 2            | A    |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load | $I_{FSM}$    | 70           | A    |
| Junction temperature   | $T_J$        | - 55 to +175 | °C   |
| Storage temperature  | $T_{STG}$    | - 55 to +175 | °C   |

**THERMAL PERFORMANCE**

| PARAMETER                              | SYMBOL          | TYP | UNIT |
|--|-----------------|-----|------|
| Junction-to-lead thermal resistance    | $R_{\theta JL}$ | 15  | °C/W |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 63  | °C/W |
| Junction-to-case thermal resistance    | $R_{\theta JC}$ | 19  | °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>               | $I_F = 1\text{A}, T_J = 25^\circ\text{C}$  | $V_F$  | 0.54 | -    | V             |
|  | $I_F = 2\text{A}, T_J = 25^\circ\text{C}$  |        | 0.62 | 0.66 | V             |
|  | $I_F = 1\text{A}, T_J = 125^\circ\text{C}$ |        | 0.45 | -    | V             |
|  | $I_F = 2\text{A}, T_J = 125^\circ\text{C}$ |        | 0.53 | 0.56 | V             |
| Reverse current @ rated $V_R$ <sup>(2)</sup> | $T_J = 25^\circ\text{C}$                   | $I_R$  | -    | 30   | $\mu\text{A}$ |
|  | $T_J = 125^\circ\text{C}$                  |        | -    | 5    | mA            |
| Junction capacitance                         | 1MHz, $V_R = 4.0\text{V}$                  | $C_J$  | 99   | -    | pF            |

**Notes:**

1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

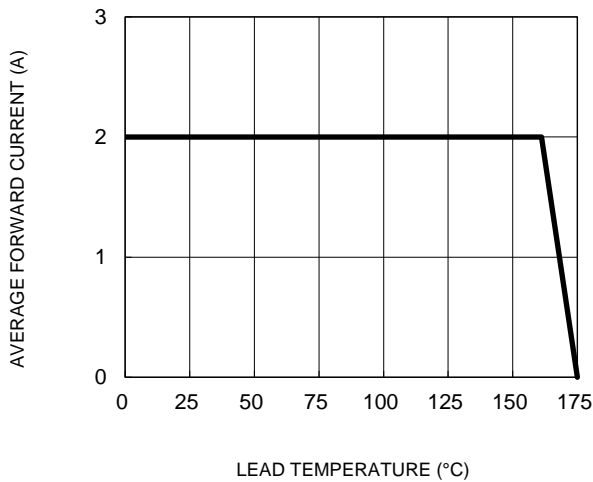
**ORDERING INFORMATION**

| ORDERING CODE | PACKAGE        | PACKING             |
|---------------|----------------|---------------------|
| SSB2H40H      | DO-214AA (SMB) | 3,000 / Tape & Reel |

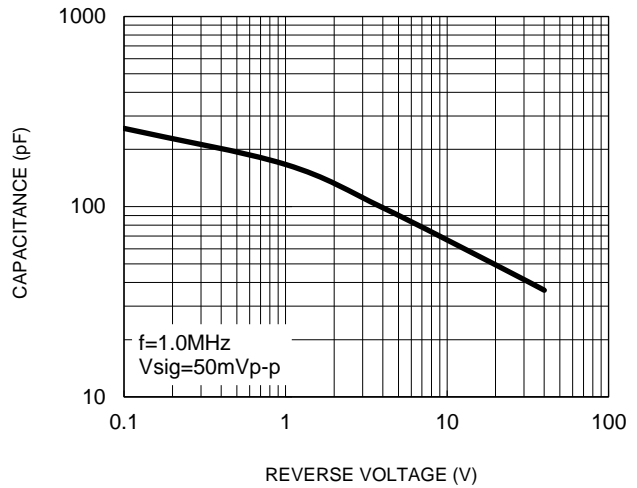
## CHARACTERISTICS CURVES

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

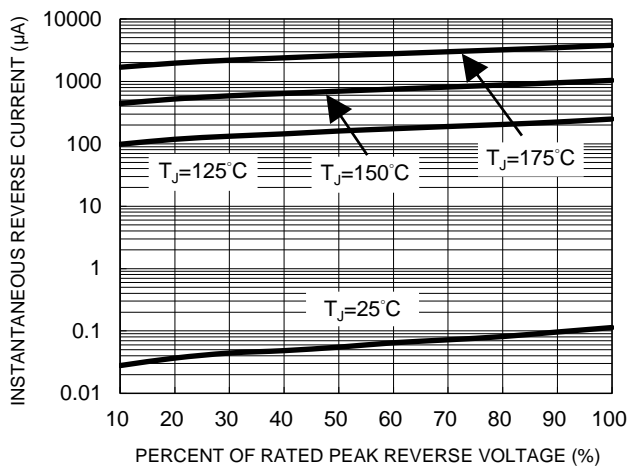
**Fig.1 Forward Current Derating Curve**



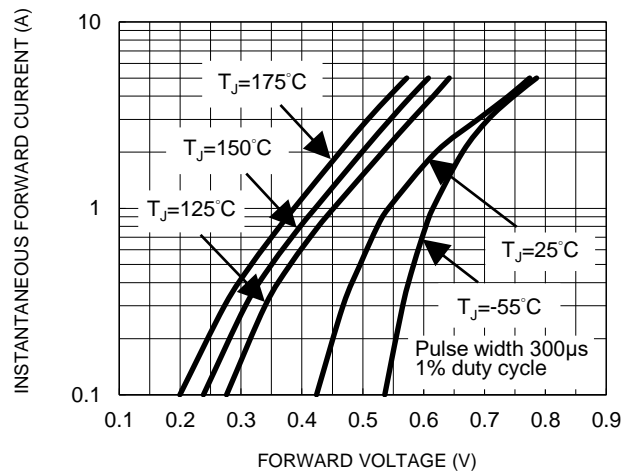
**Fig.2 Typical Junction Capacitance**



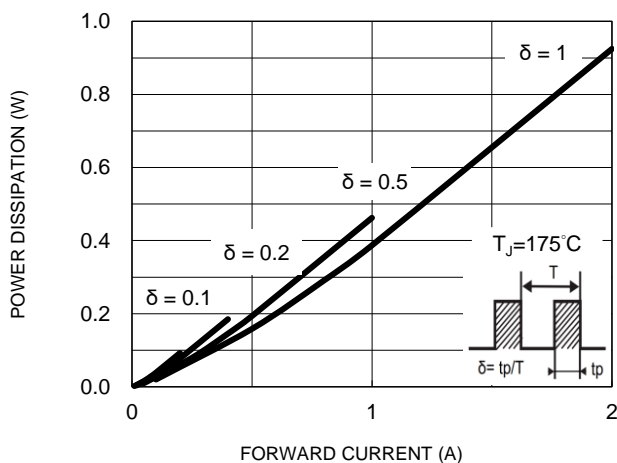
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



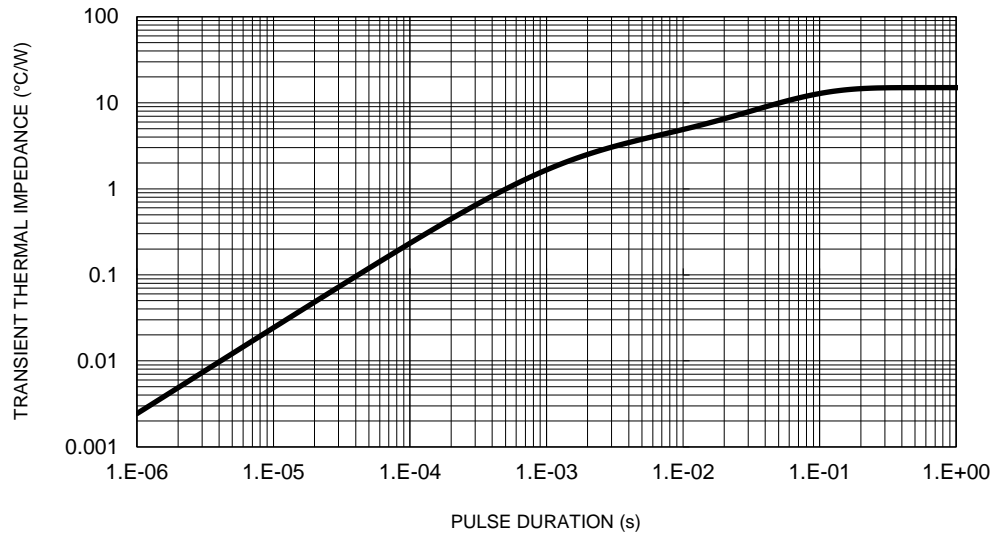
**Fig.5 Typical Forward Power Dissipation vs. Forward Current**



## CHARACTERISTICS CURVES

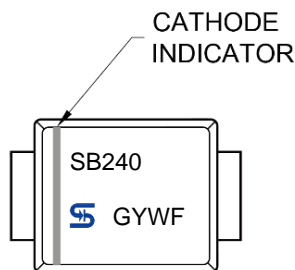
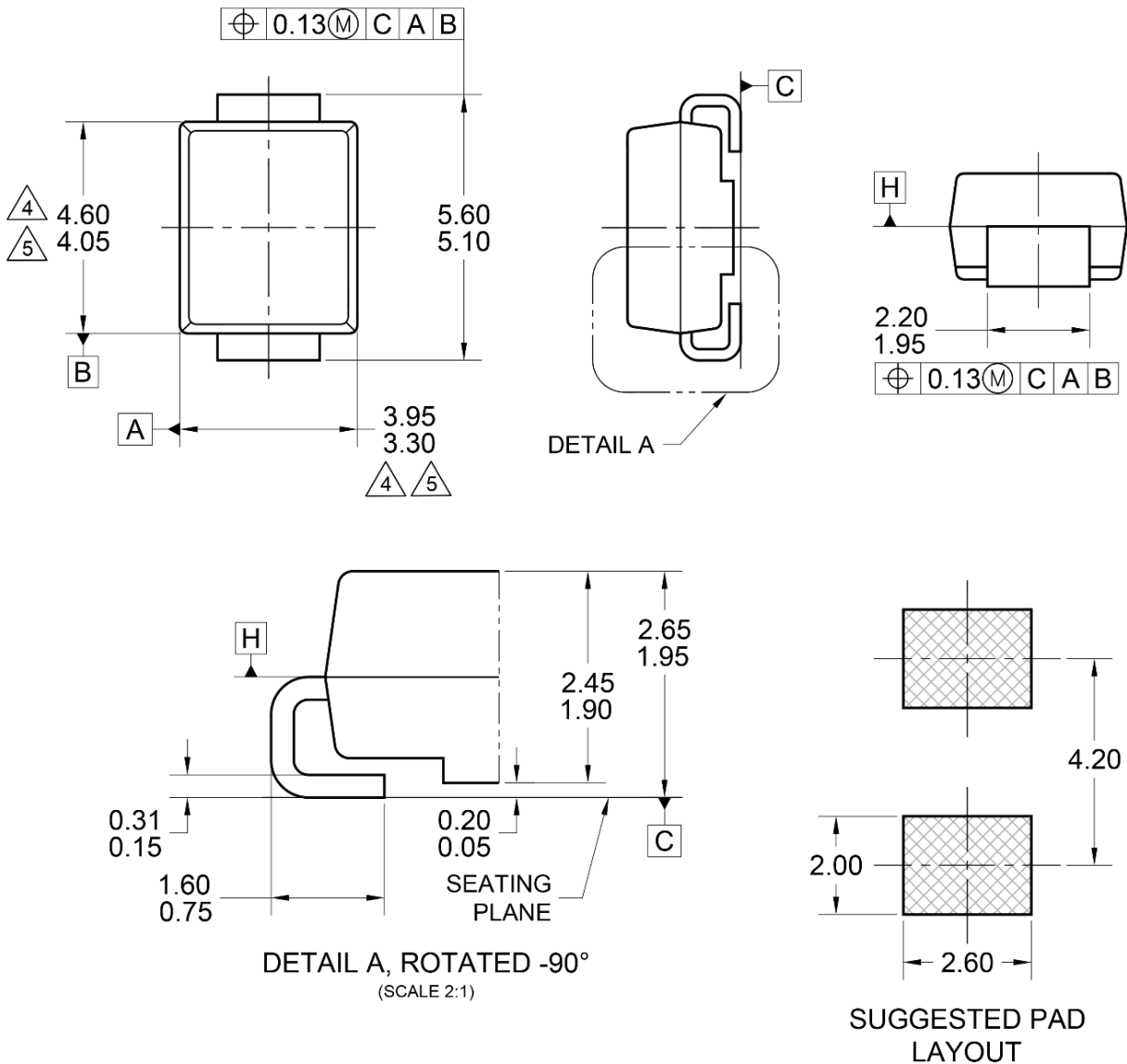
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.6 Typical Transient Thermal Characteristics**



## PACKAGE OUTLINE DIMENSIONS

### DO-214AA (SMB)



### MARKING DIAGRAM

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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