

## 4A, 40V High Current Density Surface Mount Schottky Rectifier

### FEATURES

- Low power loss, high efficiency
- Low profile package
- Ideal for automated placement
- High surge current capability
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Polarity protection
- 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
- Part no. with suffix "H" means AEC-Q101 qualified
- Packing code with suffix "G" means green compound (halogen-free)
- Moisture sensitivity level: level 1, per J-STD-020
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.11 g (approximately)

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



**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                                                                               | $I_{F(AV)}$  | 4           | A    |
| Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode | $I_{FSM}$    | 100         | A    |
| Junction temperature                                                                          | $T_J$        | -55 to +150 | °C   |
| Storage temperature                                                                           | $T_{STG}$    | -55 to +150 | °C   |

**THERMAL PERFORMANCE**

| PARAMETER                              | SYMBOL          | LIMIT | 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 recommended 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 per diode <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 $V_R$ per diode <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                                   | 1 MHz, $V_R = 4.0\text{V}$                 | $C_J$  | 235  | -    | pF            |

**Notes:**

- Pulse test with  $PW = 0.3\text{ ms}$
- Pulse test with  $PW = 30\text{ ms}$

**ORDERING INFORMATION**

| PART NO.          | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | PACKAGE | PACKING                  |
|-------------------|-----------------|--------------|---------------------|---------|--------------------------|
| SSB44<br>(Note 1) | H               | R5           | G                   | SMB     | 850 / 7" Plastic reel    |
|                   |                 | R4           |                     | SMB     | 3,000 / 13" Paper reel   |
|                   |                 | M4           |                     | SMB     | 3,000 / 13" Plastic reel |

**Note:**

- Whole series with green compound (halogen-free)

**EXAMPLE P/N**

| EXAMPLE P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION                          |
|-------------|----------|-----------------|--------------|---------------------|--------------------------------------|
| SSB44HR5G   | SSB44    | H               | R5           | G                   | AEC-Q101 qualified<br>Green compound |

## CHARACTERISTICS CURVES

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

**Fig.1 Forward Current Derating Curve**

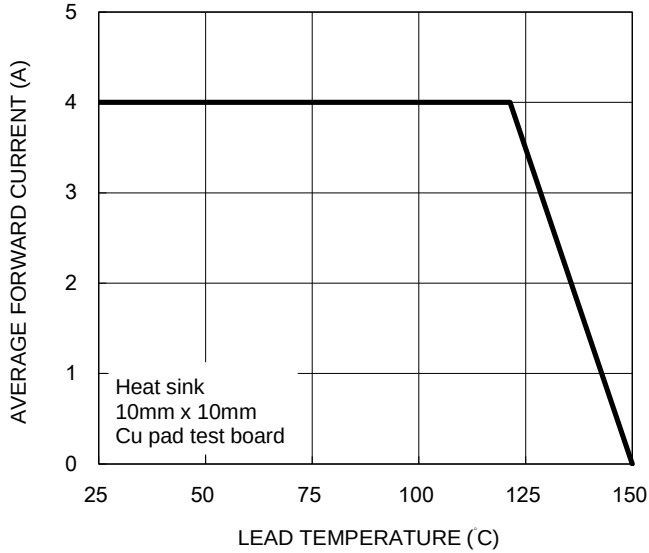


**Fig.2 Typical Junction Capacitance**

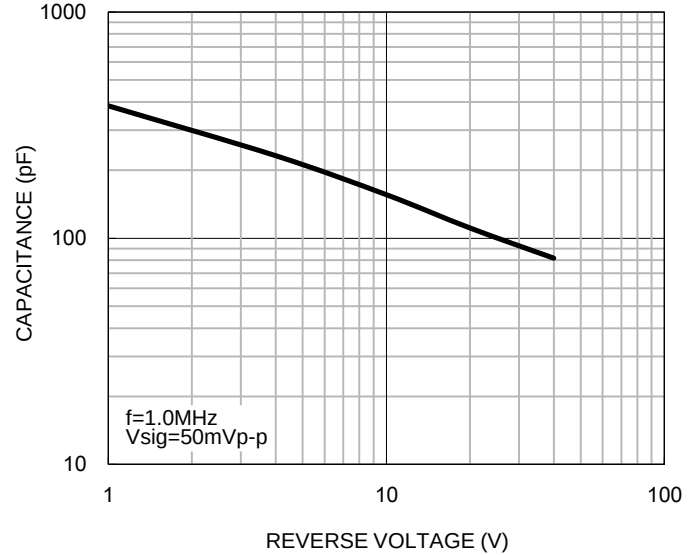


**Fig.3 Typical Reverse Characteristics**

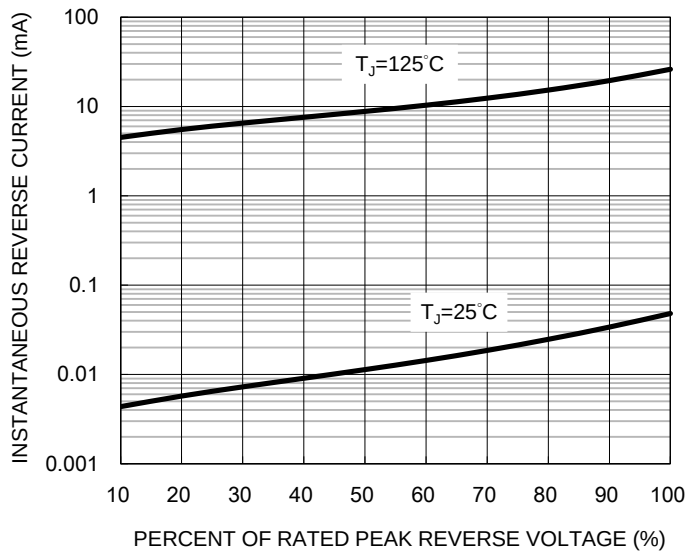
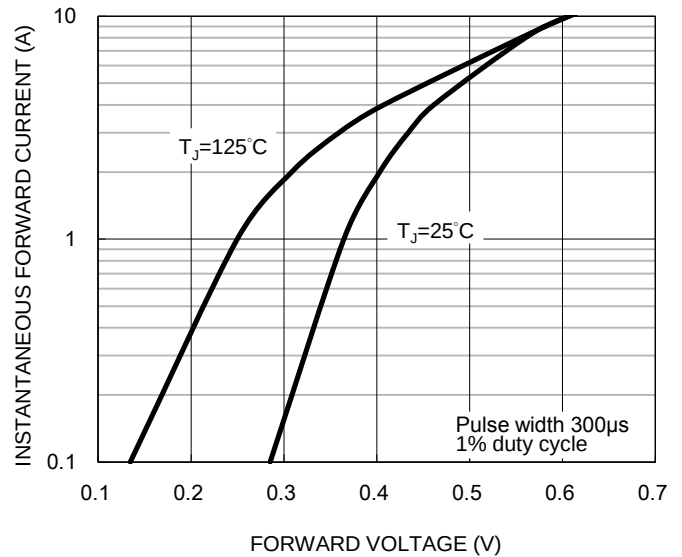
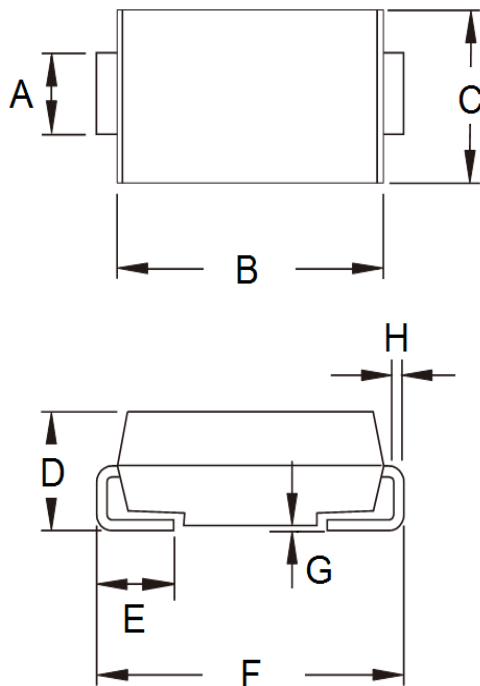


**Fig.4 Typical Forward Characteristics**



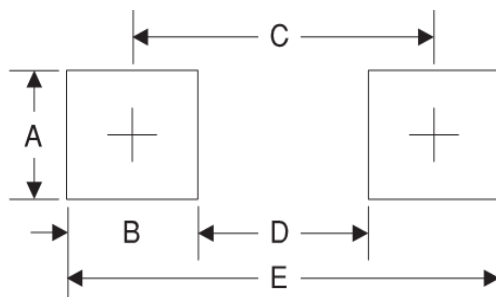
## PACKAGE OUTLINE DIMENSIONS

DO-214AA (SMB)



| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 1.95      | 2.20 | 0.077       | 0.087 |
| B    | 4.05      | 4.60 | 0.159       | 0.181 |
| C    | 3.30      | 3.95 | 0.130       | 0.156 |
| D    | 1.95      | 2.65 | 0.077       | 0.104 |
| E    | 0.75      | 1.60 | 0.030       | 0.063 |
| F    | 5.10      | 5.60 | 0.201       | 0.220 |
| G    | 0.05      | 0.20 | 0.002       | 0.008 |
| H    | 0.15      | 0.31 | 0.006       | 0.012 |

## SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A      | 2.3       | 0.091       |
| B      | 2.5       | 0.098       |
| C      | 4.3       | 0.169       |
| D      | 1.8       | 0.071       |
| E      | 6.8       | 0.268       |

## MARKING DIAGRAM



P/N = Marking Code  
G = Green Compound  
YW = Date Code  
F = Factory Code

## Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9