

# Schottky

High Performance Schottky Diode  
Low Loss and Soft Recovery  
Single Diode

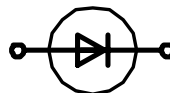
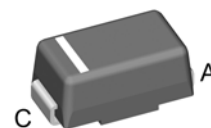
$$V_{RRM} = 60 \text{ V}$$

$$I_{FAV} = 2 \text{ A}$$

$$V_F = 0.52 \text{ V}$$

Part number (Marking on product)

DSB 2 I 60 SB (S2HBB)



## Features / Advantages:

- Very low  $V_f$
- Extremely low switching losses
- Low  $I_{rm}$ -values
- Improved thermal behaviour
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

## Applications:

- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters
- Decoupling diode

## Package:

- SMB (DO-214AA)
- Industry standard outline
  - Epoxy meets UL 94V-0
  - RoHS compliant

## Ratings

| Symbol            | Definition                            | Conditions                                                            | min. | typ. | max. | Unit |
|-------------------|---------------------------------------|-----------------------------------------------------------------------|------|------|------|------|
| $V_{RRM}$         | max. repetitive reverse voltage       | $T_{VJ} = 25^\circ\text{C}$                                           |      |      | 60   | V    |
| $I_R$             | reverse current                       | $V_R = 60 \text{ V}$<br>$T_{VJ} = 25^\circ\text{C}$                   |      |      | 0.1  | mA   |
|                   |                                       | $V_R = 60 \text{ V}$<br>$T_{VJ} = 125^\circ\text{C}$                  |      |      | 25   | mA   |
| $V_F$             | forward voltage                       | $I_F = 2 \text{ A}$<br>$T_{VJ} = 25^\circ\text{C}$                    |      |      | 0.60 | V    |
|                   |                                       | $I_F = 4 \text{ A}$<br>$T_{VJ} = 25^\circ\text{C}$                    |      |      | 0.72 | V    |
|                   |                                       | $I_F = 2 \text{ A}$<br>$T_{VJ} = 125^\circ\text{C}$                   |      |      | 0.52 | V    |
|                   |                                       | $I_F = 4 \text{ A}$<br>$T_{VJ} = 125^\circ\text{C}$                   |      |      | 0.64 | V    |
| $I_{FAV}$         | average forward current               | rectangular, $d = 0.5$<br>$T_L = 125^\circ\text{C}$                   |      |      | 2    | A    |
| $V_{F0}$<br>$r_F$ | threshold voltage<br>slope resistance | } for power loss calculation only<br>$T_L = 150^\circ\text{C}$        |      |      |      | V    |
|                   |                                       |                                                                       |      |      |      | mΩ   |
| $R_{thJL}$        | thermal resistance junction to lead*  |                                                                       |      |      | 25   | K/W  |
| $T_{VJ}$          | virtual junction temperature          |                                                                       | -55  |      | 150  | °C   |
| $P_{tot}$         | total power dissipation               | $T_L = 25^\circ\text{C}$                                              |      |      | 5    | W    |
| $I_{FSM}$         | max. forward surge current            | $t_p = 10 \text{ ms (50 Hz), sine}$<br>$T_{VJ} = 45^\circ\text{C}$    |      |      | 75   | A    |
| $C_j$             | junction capacitance                  | $V_R = 5 \text{ V}; f = 1 \text{ MHz}$<br>$T_{VJ} = 25^\circ\text{C}$ |      |      | 120  | pF   |
| $E_{AS}$          | non-repetitive avalanche energy       | $I_{AS} = A; L = 100 \mu\text{H}$<br>$T_{VJ} = 25^\circ\text{C}$      |      |      | tbd  | mJ   |
| $I_{AR}$          | repetitive avalanche current          | $V_A = 1.5 \cdot V_R$ typ.; $f = 10 \text{ kHz}$                      |      |      | tbd  | A    |

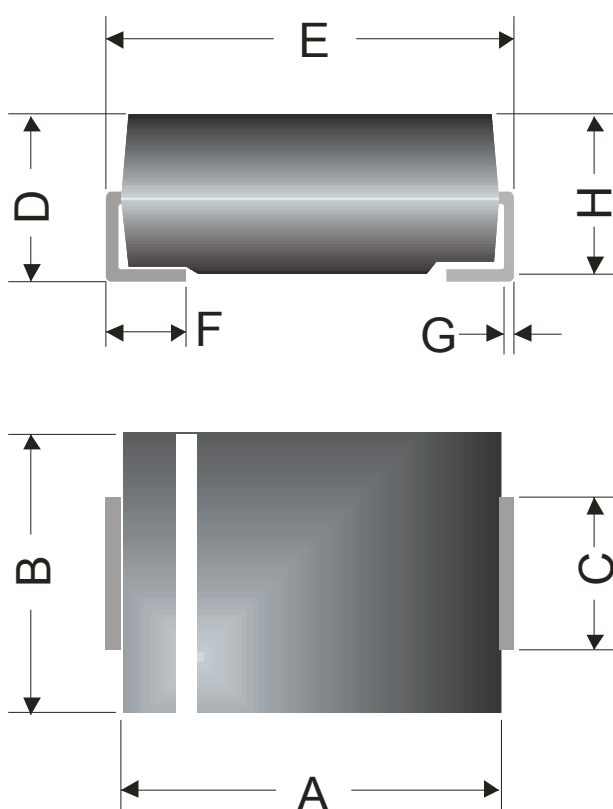
\* mounted on 1 inch square PCB

| Symbol     | Definition                             | Conditions | Ratings |      |      | Unit |
|------------|----------------------------------------|------------|---------|------|------|------|
|            |                                        |            | min.    | typ. | max. |      |
| $I_{RMS}$  | RMS current                            | per pin*   |         |      |      | A    |
| $R_{thJA}$ | thermal resistance junction to ambient |            |         | 70   |      | K/W  |
| $M_D$      | mounting torque                        |            |         |      |      | Nm   |
| $F_c$      | mounting force with clip               |            |         |      |      | N    |
| $T_{stg}$  | storage temperature                    |            | -55     |      | 150  | °C   |
| Weight     |                                        |            |         | 0.1  |      | g    |

\*  $I_{RMS}$  is typically limited by: 1. pin-to-chip resistance; or by 2. current capability of the chip.

In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.

#### Outlines SMB (DO-214AA)



| Dim. | Millimeters |      | Inches |       |
|------|-------------|------|--------|-------|
|      | min         | max  | min    | max   |
| A    | 4.06        | 4.57 | 0.160  | 0.180 |
| B    | 3.30        | 3.94 | 0.130  | 0.155 |
| C    | 1.95        | 2.20 | 0.077  | 0.087 |
| D    | 2.13        | 2.44 | 0.084  | 0.096 |
| E    | 5.21        | 5.59 | 0.205  | 0.220 |
| F    | 0.76        | 1.52 | 0.030  | 0.060 |
| G    | 0.15        | 0.31 | 0.006  | 0.012 |
| H    | 2.00        | 2.20 | 0.079  | 0.087 |