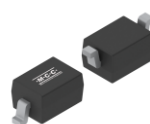


## Product Summary

| Parameter                         | Rating          |                 |                 |
|-----------------------------------|-----------------|-----------------|-----------------|
|                                   | SD103AWS        | SD103BWS        | SD103CWS        |
| $V_{RRM}$                         | 40 V            | 30 V            | 20 V            |
| $V_F \text{ Max @ } 200\text{mA}$ | 0.6 V           | 0.6 V           | 0.6 V           |
| $I_{F(AV)}$                       | 350mA           | 350mA           | 350mA           |
| $I_R \text{ Max}$                 | 5 $\mu\text{A}$ | 5 $\mu\text{A}$ | 5 $\mu\text{A}$ |



SOD-323

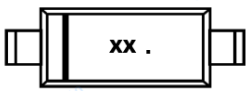
## Features

- Negligible Reverse Recovery Time
- Low Reverse Capacitance and Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection

## Mechanical Data

- Package: SOD-323
- Moisture Sensitivity: Level 1, per J-STD-020
- Halogen Free. "Green" Device (Note<sup>1</sup>)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish & RoHS Compliant
- Weight: 0.004 g (approximate)

## Body Marking and Pin Layout

| Body Marking                                                                                                                                                                                                                                                                                                             | Internal structure                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  <p><b>XX:</b> Device Marking Code<sup>1</sup><br/> <b>Bar:</b> Cathode Pin indicator<br/> <b>Dot(optional):</b> Manufacturing Site Marking</p> <p><sup>1</sup>   Refer to the ordering information for the specific device code.</p> |  |

## Ordering Information

| Ordering Product Name | Device Marking Code | Reel Size | Packing Type | Qty/Reel |
|-----------------------|---------------------|-----------|--------------|----------|
| SD103AWS-TP           | S4                  | 7"        | Tape & Reel  | 3,000    |
| SD103AWS-13P          | S4                  | 13"       | Tape & Reel  | 10,000   |
| SD103BWS-TP           | S5                  | 7"        | Tape & Reel  | 3,000    |
| SD103BWS-13P          | S5                  | 13"       | Tape & Reel  | 10,000   |
| SD103CWS-TP           | S6                  | 7"        | Tape & Reel  | 3,000    |
| SD103CWS-13P          | S6                  | 13"       | Tape & Reel  | 10,000   |

For packaging details, visit our website at <https://www.mccsemi.com/Package/List>

**Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)**

| Parameter                            | Symbol                                                                           | Rating      |             |             | Unit |
|--------------------------------------|----------------------------------------------------------------------------------|-------------|-------------|-------------|------|
|                                      |                                                                                  | SD103AWS    | SD103BWS    | SD103CWS    |      |
| Peak Repetitive Reverse Voltage      | V <sub>RRM</sub>                                                                 | 40          | 30          | 20          | V    |
| RMS Reverse Voltage                  | V <sub>R(RMS)</sub>                                                              | 28          | 21          | 14          | V    |
| Reverse Voltage                      | V <sub>R</sub>                                                                   | 40          | 30          | 20          | V    |
| Average Forward Current              | I <sub>F(AV)</sub>                                                               | 350         | 350         | 350         | mA   |
| Non-Repetitive Peak Surge Current    | t <sub>p</sub> = 8.3ms Half Sine Wave, T <sub>J</sub> = 25°C<br>I <sub>FSM</sub> | 1.5         | 1.5         | 1.5         | A    |
| Power Dissipation (Note 2)           | P <sub>D</sub>                                                                   | 200         | 200         | 200         | mW   |
| Operating Junction Temperature Range | T <sub>J</sub>                                                                   | -55 to +125 | -55 to +125 | -55 to +125 | °C   |
| Storage Temperature Range            | T <sub>STG</sub>                                                                 | -55 to +150 | -55 to +150 | -55 to +150 | °C   |

Notes:  
 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.  
 2. Device mounted on an FR4 Printed-Circuit Board (PCB) with the recommended pad layout.

**SD103AWS THRU SD103CWS**

**Thermal characteristics (T<sub>A</sub>=25°C unless otherwise specified)**

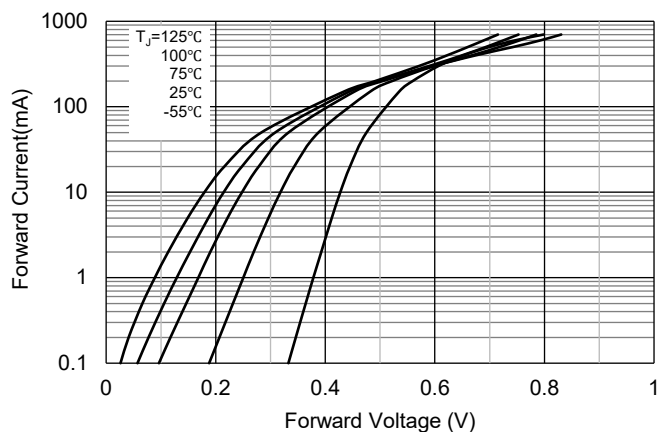
| Parameter                                            | Symbol           | Rating | Unit |
|------------------------------------------------------|------------------|--------|------|
| Thermal Resistance from Junction to Ambient (Note 2) | R <sub>θJA</sub> | 500    | °C/W |

**Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)**

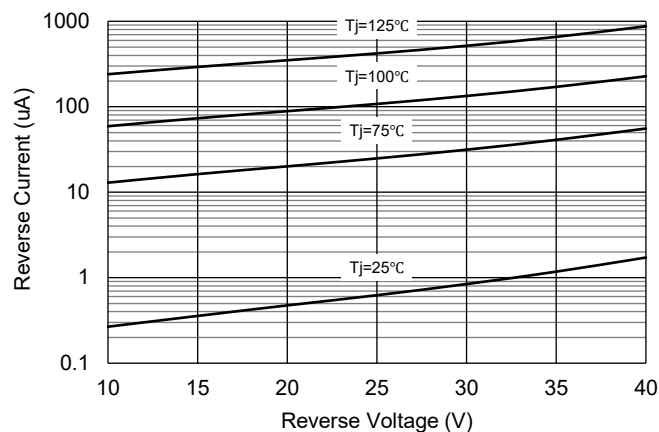
| Parameter                 | Product name | Test Conditions                                                                                            | Symbol          | Min | Typ | Max  | Unit |
|---------------------------|--------------|------------------------------------------------------------------------------------------------------------|-----------------|-----|-----|------|------|
| Reverse Breakdown Voltage | SD103AWS     | I <sub>R</sub> =100μA (pulse test)                                                                         | V <sub>BR</sub> | 40  |     |      | V    |
|                           | SD103BWS     |                                                                                                            |                 | 30  |     |      | V    |
|                           | SD103CWS     |                                                                                                            |                 | 20  |     |      | V    |
| Forward Voltage           |              | I <sub>F</sub> = 20mA                                                                                      | V <sub>F</sub>  |     |     | 0.37 | V    |
|                           |              | I <sub>F</sub> = 200mA                                                                                     |                 |     |     | 0.6  |      |
| Reverse Current           | SD103AWS     | V <sub>R</sub> = 30 V                                                                                      | I <sub>R</sub>  |     |     | 5    | μA   |
|                           | SD103BWS     | V <sub>R</sub> = 20 V                                                                                      |                 |     |     | 5    |      |
|                           | SD103CWS     | V <sub>R</sub> = 10 V                                                                                      |                 |     |     | 5    |      |
| Junction Capacitance      |              | V <sub>R</sub> =0 V, f=1.0MHz                                                                              | C <sub>J</sub>  |     |     | 50   | pF   |
| Reverse Recovery Time     |              | I <sub>F</sub> =200mA, I <sub>R</sub> =200mA, I <sub>rr</sub> =0.1 x I <sub>R</sub> , R <sub>L</sub> =100Ω | t <sub>rr</sub> |     | 10  |      | ns   |

## Curve Characteristics

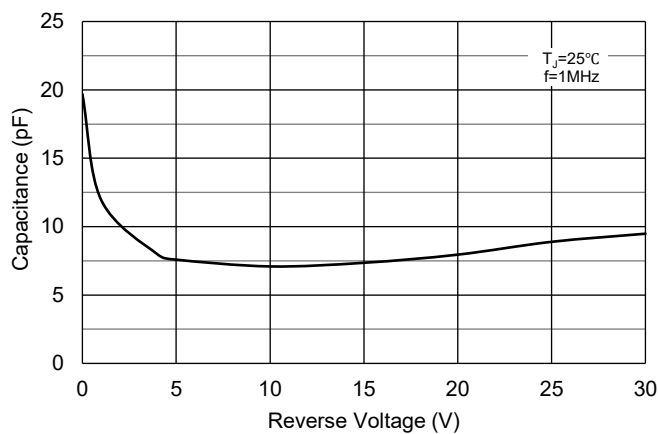
**Fig.1 - Typical Instantaneous Forward Characteristics (per diode)**



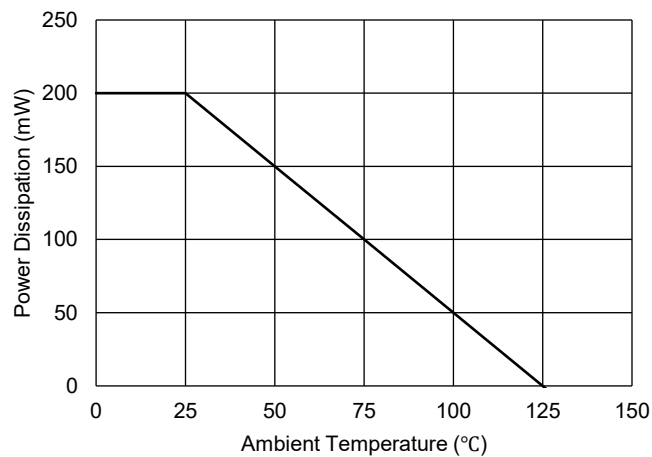
**Fig.2 - Typical Reverse Leakage Characteristics (per diode)**



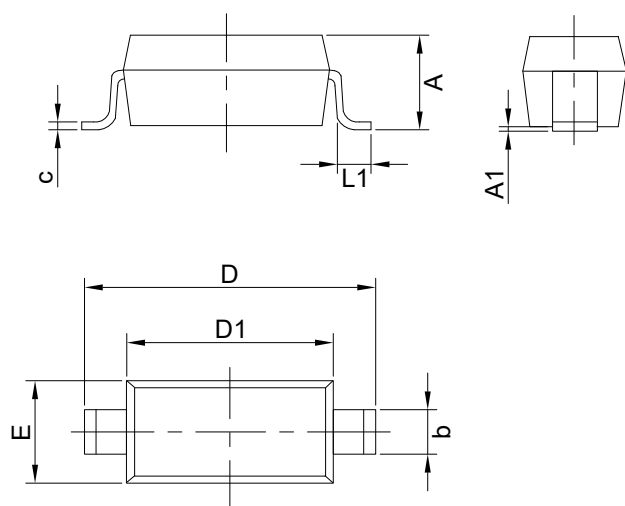
**Fig.3 - Typical Capacitance Characteristics (per diode)**



**Fig.4 - Power Derating Curve**



## Package Outline

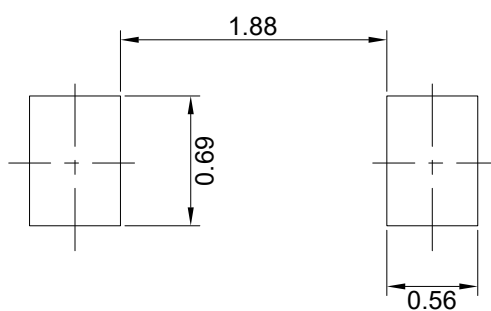


| DIM | INCH  |       | MM   |       | NOTE   |
|-----|-------|-------|------|-------|--------|
|     | MIN   | MAX   | MIN  | MAX   |        |
| A   | 0.031 | 0.045 | 0.80 | 1.15* | Note 1 |
| A1  | 0.000 | 0.006 | 0.00 | 0.15  |        |
| b   | 0.010 | 0.016 | 0.25 | 0.40  |        |
| c   | 0.003 | 0.010 | 0.08 | 0.25  |        |
| D   | 0.090 | 0.107 | 2.30 | 2.70  |        |
| D1  | 0.063 | 0.071 | 1.60 | 1.80  |        |
| E   | 0.045 | 0.055 | 1.15 | 1.40  |        |
| L1  | 0.004 | 0.018 | 0.10 | 0.45  |        |

### Notes:

1. Dimension A for products from manufacturing site VN is controlled at max 1.10 mm.

## Suggested Pad Layout (Unit:mm)



### Notes:

1. The suggested land pattern dimensions have been provided for reference only.
2. For further information, please refer to document IPC-7351A.

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