

**SCHOTTKY BARRIER DIODE**

**FEATURES**

- ◆ Low Forward Voltage Drop
- ◆ Guard Ring Construction for Transient Protection
- ◆ Negligible Reverse Recovery Time
- ◆ Low Capacitance
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives

**MECHANICAL DATA**

- ◆ Case: SOD-323
- ◆ Terminals: Solderable per MIL-STD-750, Method 2026
- ◆ Approx. Weight: 5.48mg / 0.00019oz

**Pinning**

| 1.Cathode                                                                           | 2.Anode |
|-------------------------------------------------------------------------------------|---------|
|  |         |
| <b>SOD-323</b>                                                                      |         |

**Marking Code**

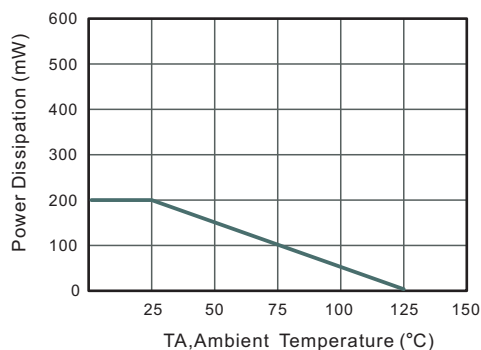
|                 |           |
|-----------------|-----------|
| <b>SD103AWS</b> | <b>S4</b> |
| <b>SD103BWS</b> | <b>S5</b> |
| <b>SD103CWS</b> | <b>S6</b> |

**Maximum Ratings and Electrical characteristics**

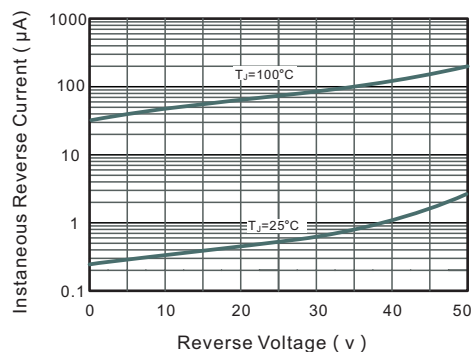
Ratings at 25 °C ambient temperature unless otherwise specified.

| Parameter                                                                                                               |                               | Symbols            | SD103AWS   | SD103BWS | SD103CWS | Units |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------|------------|----------|----------|-------|
| Peak Repetitive Reverse Voltage                                                                                         |                               | V <sub>RRM</sub>   | 40         | 30       | 20       | V     |
| RMS reverse voltage                                                                                                     |                               | V <sub>RMS</sub>   | 28         | 21       | 14       | V     |
| Working Peak Reverse Voltage                                                                                            |                               | V <sub>DC</sub>    | 40         | 30       | 20       | V     |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed On Rated Load(JEDEC method)                        |                               | I <sub>FSM</sub>   | 13         |          |          | A     |
| Maximum Instantaneous Forward Voltage                                                                                   | I <sub>F</sub> =20mA          | V <sub>F</sub>     | 0.37       |          |          | V     |
|                                                                                                                         | I <sub>F</sub> =200mA         |                    | 0.60       |          |          |       |
| Power Dissipation                                                                                                       |                               | P <sub>D</sub>     | 200        |          |          | mW    |
| Reverse current                                                                                                         | SD103AWS, V <sub>R</sub> =30V | I <sub>R</sub>     | 5          | -        | -        | uA    |
|                                                                                                                         | SD103BWS, V <sub>R</sub> =20V |                    | -          | 5        | -        |       |
|                                                                                                                         | SD103CWS, V <sub>R</sub> =10V |                    | -          | -        | 5        |       |
| Thermal Resistance, Junction to Ambient Air                                                                             |                               | R <sub>θJA</sub>   | 300        |          |          | °C/W  |
| Reverse voltage<br>I <sub>R</sub> =100uA                                                                                | SD103AWS                      | V <sub>(BR)R</sub> | 40         |          |          | V     |
|                                                                                                                         | SD103BWS                      |                    | 30         |          |          |       |
|                                                                                                                         | SD103CWS                      |                    | 20         |          |          |       |
| Reverse recovery time I <sub>F</sub> =I <sub>R</sub> =200mA, I <sub>rr</sub> =0.1xI <sub>R</sub> , R <sub>L</sub> =100Ω |                               | T <sub>rr</sub>    | 10         |          |          | nS    |
| Forward Continuons Current                                                                                              |                               | I <sub>FM</sub>    | 350        |          |          | mA    |
| Total capacitance V <sub>R</sub> =0V.f=1MHZ                                                                             |                               | C <sub>tot</sub>   | 50         |          |          | pF    |
| Junction temperature                                                                                                    |                               | T <sub>j</sub>     | 125        |          |          | °C    |
| Storage temperature                                                                                                     |                               | T <sub>stg</sub>   | -55 ~ +150 |          |          | °C    |

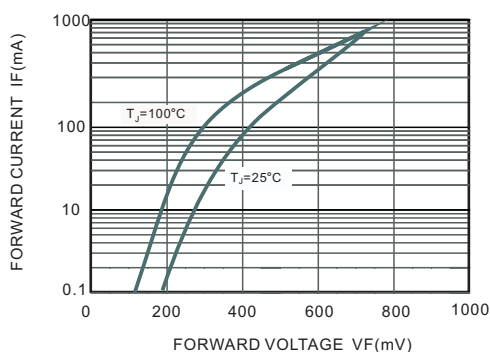
**Fig.1 Power Derating Curve**



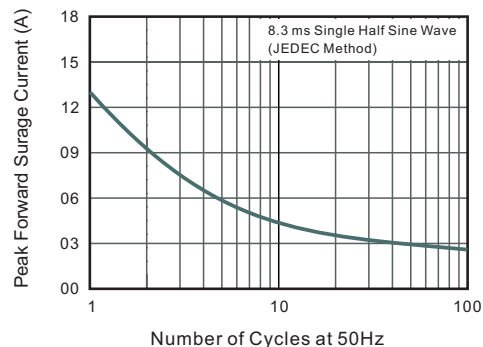
**Fig.2 Typical Reverse Characteristics**



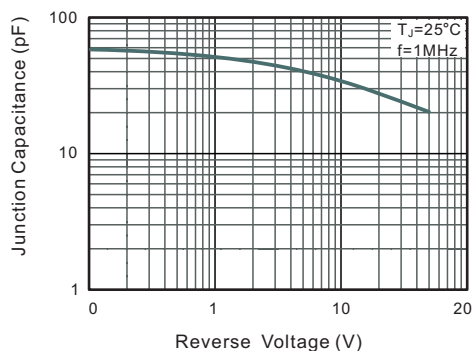
**Fig.3 Forward Characteristics**



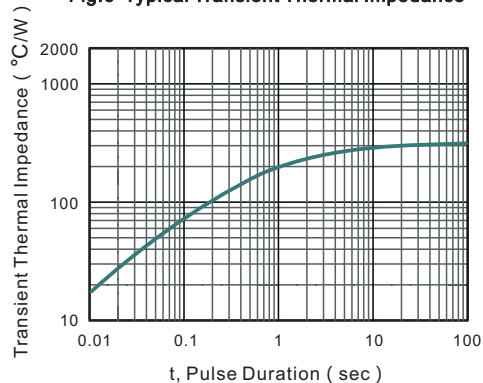
**Fig.4 Maximum Non-Repetitive Peak Forward Surge Current**



**Fig.5 Typical Junction Capacitance**



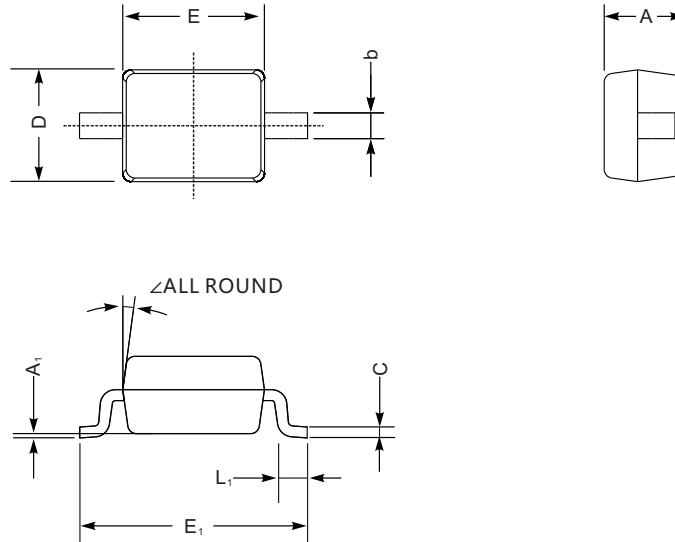
**Fig.6 Typical Transient Thermal Impedance**



## Package Outline

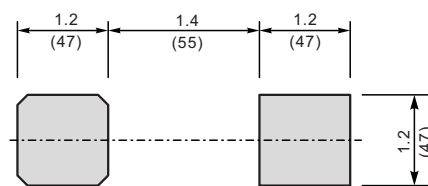
## SOD-323

Plastic surface mounted package; 2 leads



| UNIT |     | A   | C    | D   | E   | E <sub>1</sub> | b    | L <sub>1</sub> | A <sub>1</sub> | ∠  |
|------|-----|-----|------|-----|-----|----------------|------|----------------|----------------|----|
| mm   | max | 1.1 | 0.15 | 1.4 | 1.8 | 2.75           | 0.4  | 0.45           | 0.2            | 9° |
|      | min | 0.8 | 0.08 | 1.2 | 1.4 | 2.55           | 0.25 | 0.2            | —              |    |
| mil  | max | 43  | 5.9  | 55  | 70  | 108            | 16   | 16             | 8              |    |
|      | min | 32  | 3.1  | 47  | 63  | 100            | 9.8  | 7.9            | —              |    |

The recommended mounting pad size



Unit:  $\frac{\text{mm}}{(\text{mil})}$

## Summary of Packing Options

| Package | Packing Description | Packing Quantity | Industry Standard |
|---------|---------------------|------------------|-------------------|
| SOD-323 | Tape/Reel, 7" reel  | 3000             | EIA-481-1         |