

## SUPER FAST RECOVERY DIODES

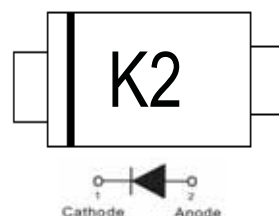
### Features

- \* Low forward voltage drop
- \* Deal for automated placement
- \* Low power loss, high efficiency
- \* High surge current capability

### Mechanical Data

- \* Case: SOD-323 Package
- \* Terminals: Solderable per MIL-STD-750, Method 2026
- \* Halogen-free
- \* Marking:K2

SOD-323



### Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

| PARAMETER                                                                           | SYMBOL                                                             | LIMIT      | UNITS            |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------|------------------|
| Maximum Repetitive Peak Reverse Voltage                                             | V <sub>RRM</sub>                                                   | 200        | V                |
| Maximum Rms Voltage                                                                 | V <sub>RMS</sub>                                                   | 140        | V                |
| Maximum Dc Blocking Voltage                                                         | V <sub>DC</sub>                                                    | 200        | V                |
| Maximum Average Forward Current                                                     | I <sub>F(AV)</sub>                                                 | 0.5        | A                |
| Peak Forward Surge Current: 8.3 ms Single Half Sine-Wave Superimposed On Rated Load | I <sub>FSM</sub>                                                   | 10         | A                |
| Typical Current Squared Time                                                        | I <sup>2</sup> t                                                   | 0.415      | A <sup>2</sup> s |
| Typical Junction Capacitance<br>Measured at 1 MHZ And Applied V <sub>R</sub> = 4 V  | C <sub>J</sub>                                                     | 21         | pF               |
| Typical Thermal Resistance                                                          | R <sub>θJA</sub> <sup>(1)</sup><br>R <sub>θJC</sub> <sup>(1)</sup> | 650<br>230 | °C/W             |
| Maximum Reverse Recovery Time (Note 1)                                              | T <sub>rr</sub>                                                    | 25         | nS               |
| Operating Junction Temperature Range                                                | T <sub>J</sub>                                                     | -55~150    | °C               |
| Storage Temperature Range                                                           | T <sub>STG</sub>                                                   | -55~150    | °C               |

NOTES :1.Test Conditions: IF= 0.5A, IR= -1.0A, IRR= -0.25A.

2019-05/08  
REV:A

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

| PARAMETER       | SYMBOL      | TEST CONDITION                                 | MIN. | TYP. | MAX. | UNITS |
|-----------------|-------------|------------------------------------------------|------|------|------|-------|
| Forward Voltage | $V_F$       | $I_F = 0.1\text{ A}, T_J = 25^\circ\text{C}$   | -    | 0.59 | -    | V     |
|                 |             | $I_F = 0.25\text{ A}, T_J = 25^\circ\text{C}$  | -    | 0.7  | -    |       |
|                 |             | $I_F = 0.5\text{ A}, T_J = 25^\circ\text{C}$   | -    | -    | 0.85 |       |
|                 |             | $I_F = 0.1\text{ A}, T_J = 125^\circ\text{C}$  | -    | 0.48 | -    |       |
|                 |             | $I_F = 0.25\text{ A}, T_J = 125^\circ\text{C}$ | -    | 0.57 | -    |       |
|                 |             | $I_F = 0.5\text{ A}, T_J = 125^\circ\text{C}$  | -    | 0.64 | -    |       |
| Reverse Current | $I_R^{(3)}$ | $V_R = 200\text{ V}, T_J = 25^\circ\text{C}$   | -    | 1    | 2    | uA    |
|                 |             | $V_R = 200\text{ V}, T_J = 125^\circ\text{C}$  | -    | 80   | -    |       |

**NOTES:**

1. Mounted on a FR4 PCB, single-sided copper, mini pad
2. Mounted on a FR4 PCB, single-sided copper, with  $100\text{ cm}^2$  copper pad area
3. Short duration pulse test used to minimize self-heating effect

## RATING AND CHARACTERISTICS CURVES (05S200WS)

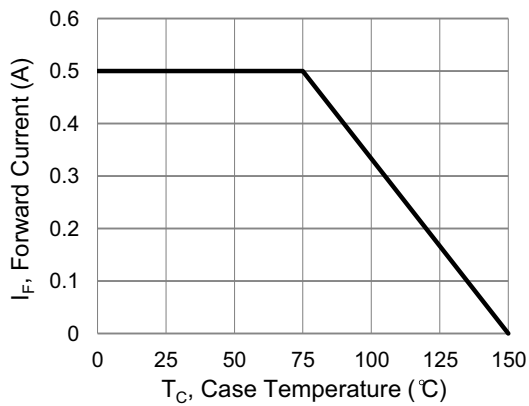


Fig.1 Forward Current Derating Curve

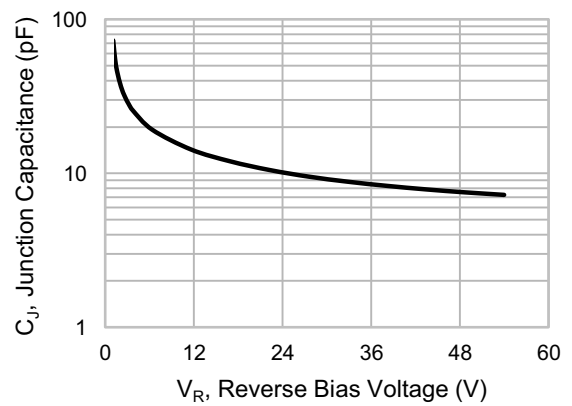


Fig.2 Typical Junction Capacitance

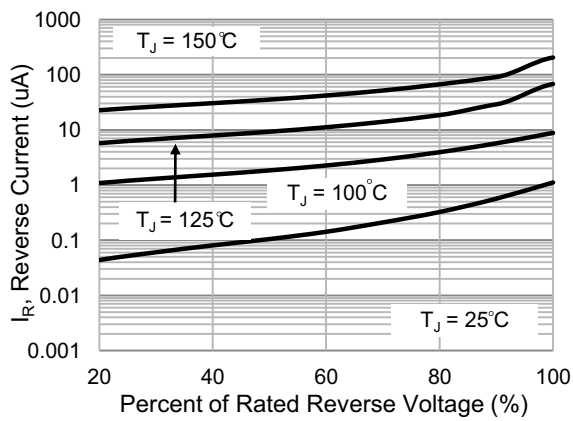


Fig.3 Typical Reverse Characteristics

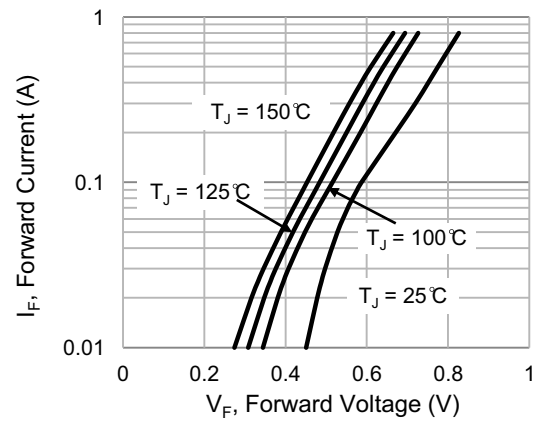


Fig.4 Typical Forward Characteristics

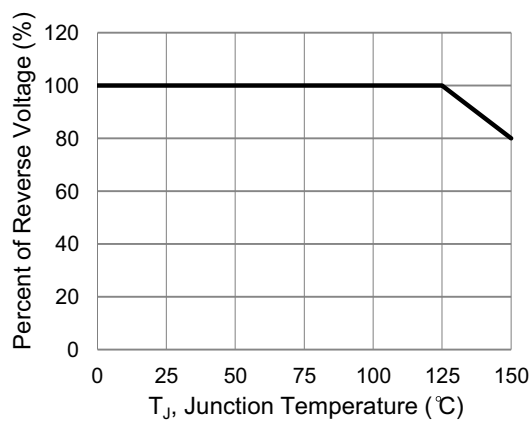
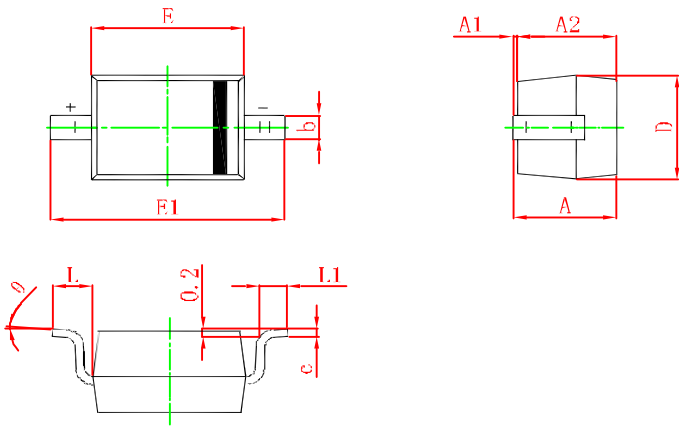


Fig.5 Operating Temperature Derating Curve

**SOD-323 PACKAGE OUTLINE**  
**SOD-323**

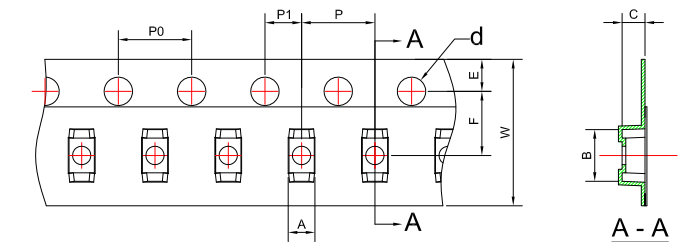
Plastic surface mounted package



| Symbol   | Min.(mm) | Max.(mm) |
|----------|----------|----------|
| A        |          | 1.000    |
| A1       | 0.000    | 0.100    |
| A2       | 0.800    | 0.900    |
| b        | 0.250    | 0.350    |
| c        | 0.080    | 0.150    |
| D        | 1.200    | 1.400    |
| E        | 1.600    | 1.800    |
| E1       | 2.500    | 2.700    |
| L        | 0.475REF |          |
| L1       | 0.250    | 0.400    |
| $\theta$ | 0°       | 8°       |

# SOD-323 Tape and Reel

## SOD-323 Embossed Carrier Tape

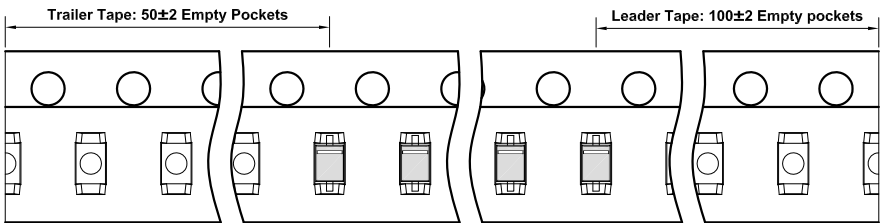


## Packaging Description:

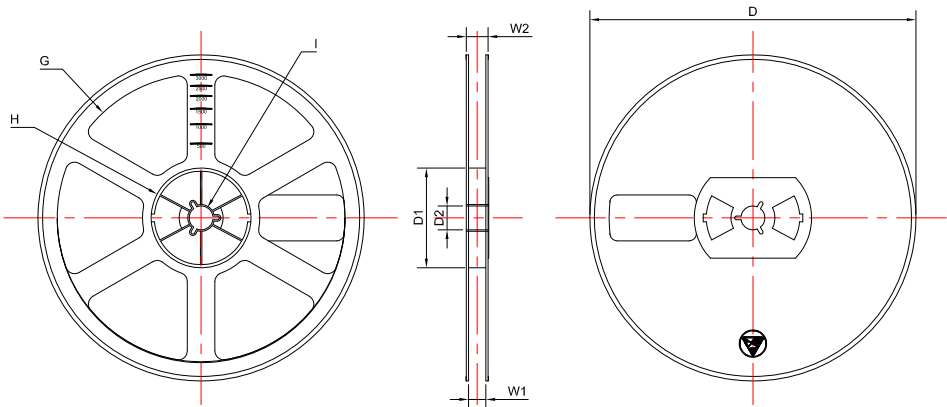
SOD-323 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. The reels are blue in color and made of recyclable plastic.

| Dimensions are in millimeter |        |        |        |       |       |       |       |       |       |           |
|------------------------------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-----------|
| Pkg Type                     | A      | B      | C      | d     | E     | F     | P0    | P     | P1    | W         |
| SOD-323                      | 1.46   | 2.90   | 1.25   | Ø1.50 | 1.75  | 3.50  | 4.00  | 4.00  | 2.00  | 8.00      |
| (Tolerance)                  | ± 0.05 | ± 0.05 | ± 0.05 | ± 0.1 | ± 0.1 | ± 0.1 | ± 0.1 | ± 0.1 | ± 0.1 | +0.3/-0.1 |

## SOD-323 Tape Leader and Trailer



## SOD-323 Reel



| Unit: mm    |         |       |       |        |        |       |      |       |
|-------------|---------|-------|-------|--------|--------|-------|------|-------|
| Reel Option | D       | D1    | D2    | G      | H      | I     | W1   | W2    |
| 7" Dia      | Ø178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |
| Tolerance   | ± 2     | ± 1   | ± 1   | ± 1    | ± 1    | ± 1   | ± 1  | ± 1   |

## Packaging Quantity

| Reel  | Reel Size | Box    | Box Size(mm) | Carton  | Carton Size(mm) |
|-------|-----------|--------|--------------|---------|-----------------|
| 3,000 | 7 inch    | 45,000 | 210*208*203  | 180,000 | 440*440*230     |

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