## 1.0Amp. Surface Mount Schottky Barrier Diodes

# CSOD5819AS2

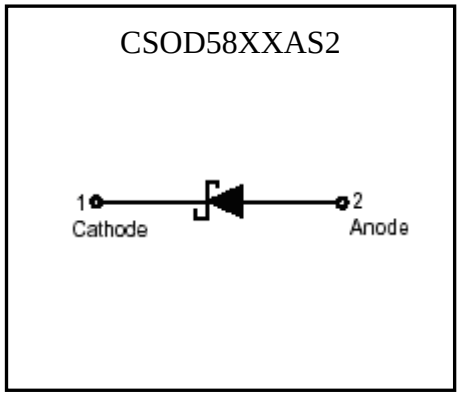
## Features

- For surface mounted applications.
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- Low leakage current
- High surge capability
- High temperature soldering: 250°C/10 seconds at terminals
- Exceeds environmental standards of MIL-S-19500/228
- RoHS compliant package

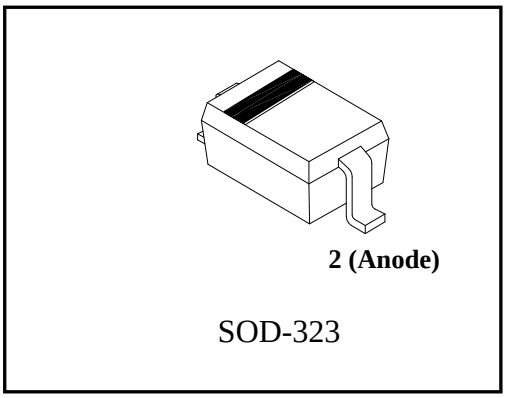
## Mechanical Data

- Case: Molded plastic, JEDEC SOD-323.
- Terminals: Pure tin plated, Solderable per MIL-STD-750 method 2026
- Polarity: Indicated by cathode band.
- Weight: 4.507 mg approximately

## Symbol

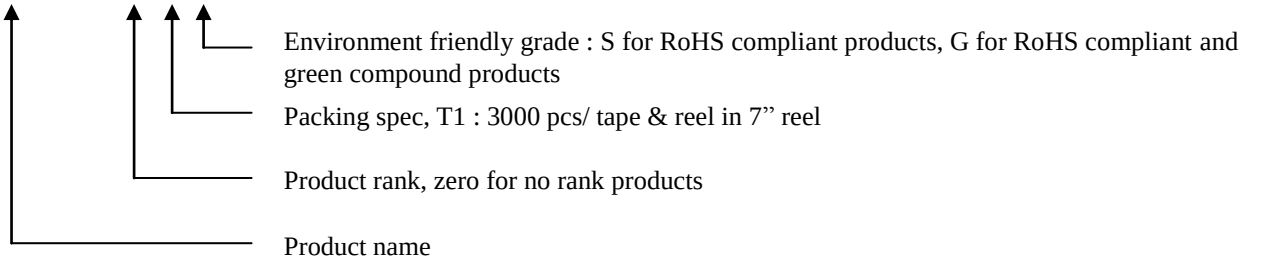



## Outline




## Ordering Information

| Device | Package | Shipping |
|---|---|---|
| CSOD5819AS2-0-T1-G | SOD-323<br>(Pb-free lead plating and halogen-free package) | 3000 pcs / Tape & Reel |



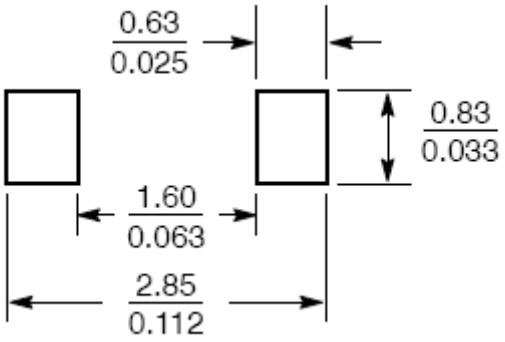
## Maximum Ratings and Electrical Characteristics

(Rating at 25°C ambient temperature unless otherwise specified.)

| Parameter | Symbol | Limits | Units |
|---|---|---|---|
| Repetitive peak reverse voltage | $V_{RRM}$ | 40 | V |
| Maximum RMS voltage | $V_{RMS}$ | 28 | V |
| Maximum DC blocking voltage | $V_R$ | 40 | V |
| Maximum instantaneous forward voltage, $I_F$=1A (Note 1) | $V_F$ | 0.5 | V |
| Average forward rectified current | $I_O$ | 1 | A |
| Peak forward surge current @8.3ms single half sine wave superimposed on rated load (JEDEC method) | $I_{FSM}$ | 15 | A |
| Maximum DC reverse current<br>$V_R$=40V,$T_J$=25℃ (Note 1)<br>$V_R$=40V,$T_J$=125℃ (Note 1) | $I_R$ | <br>0.3<br>10 | <br>mA<br>mA |
| Power Dissipation | $P_D$ | 250 | mW |
| Maximum thermal resistance, Junction to ambient | $R_{th,JA}$ | 500(typ) | ℃/W |
| Diode junction capacitance @ f=1MHz and applied 5V reverse voltage | $C_D$ | 55 (typ) | pF |
| Storage temperature range | Tstg | -65 ~ +175 | ℃ |
| Operating temperature range | $T_J$ | -50 ~ +150 | ℃ |

Notes : 1.Pulse test, pulse width=300 $\mu$ sec, 2% duty cycle

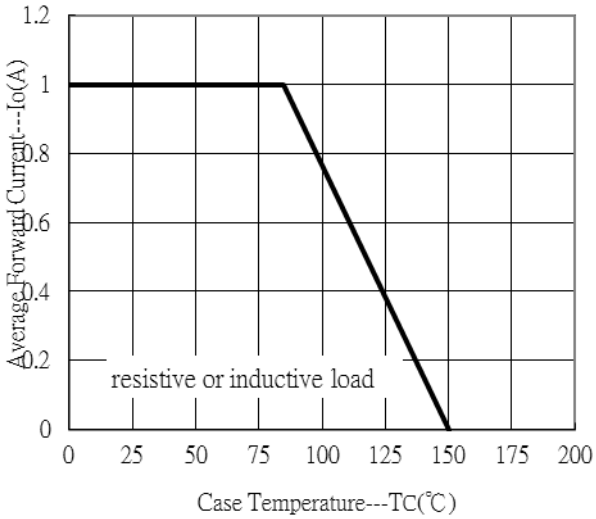
## Recommended Footprint



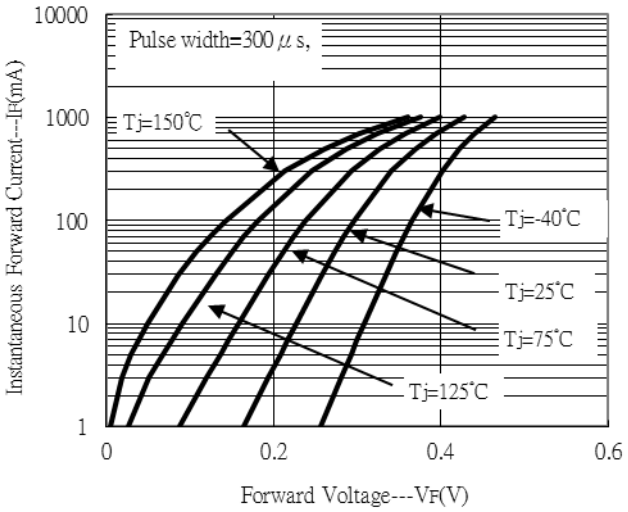

mm
inch

## Characteristic Curves

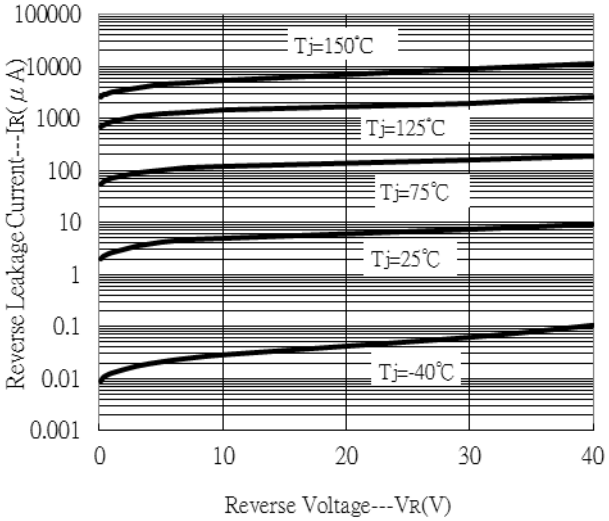
Forward Current Derating Curve



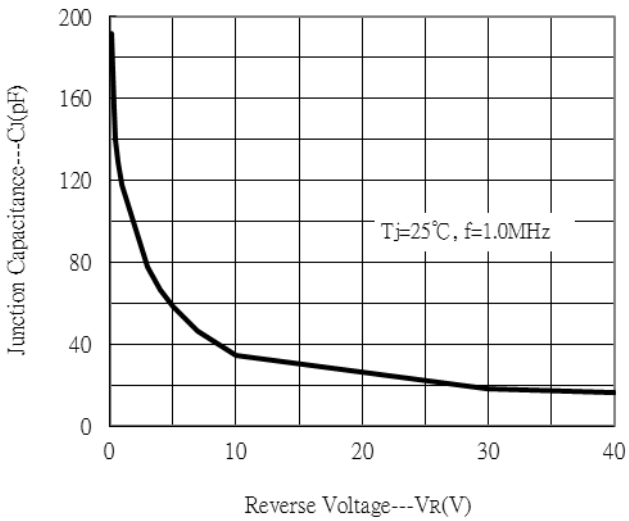

Forward Current vs Forward Voltage



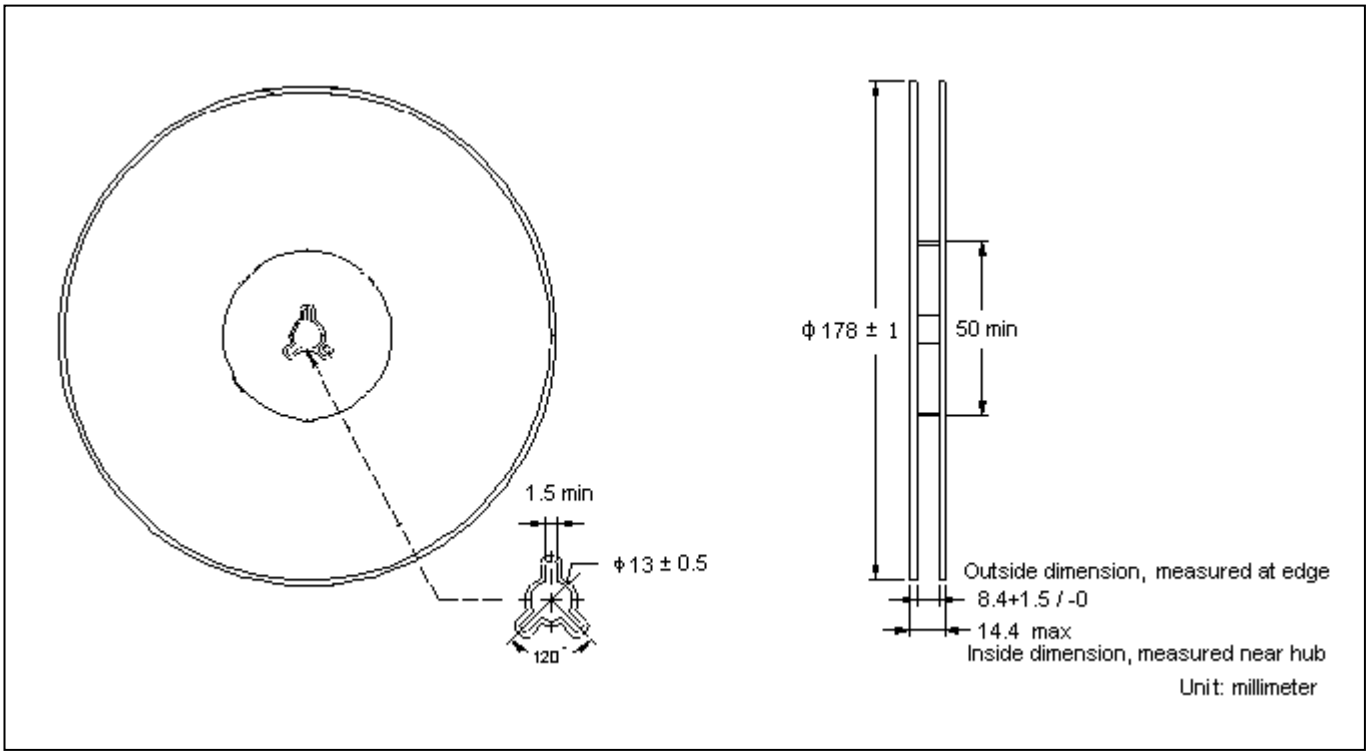

Reverse Leakage Current vs Reverse Voltage



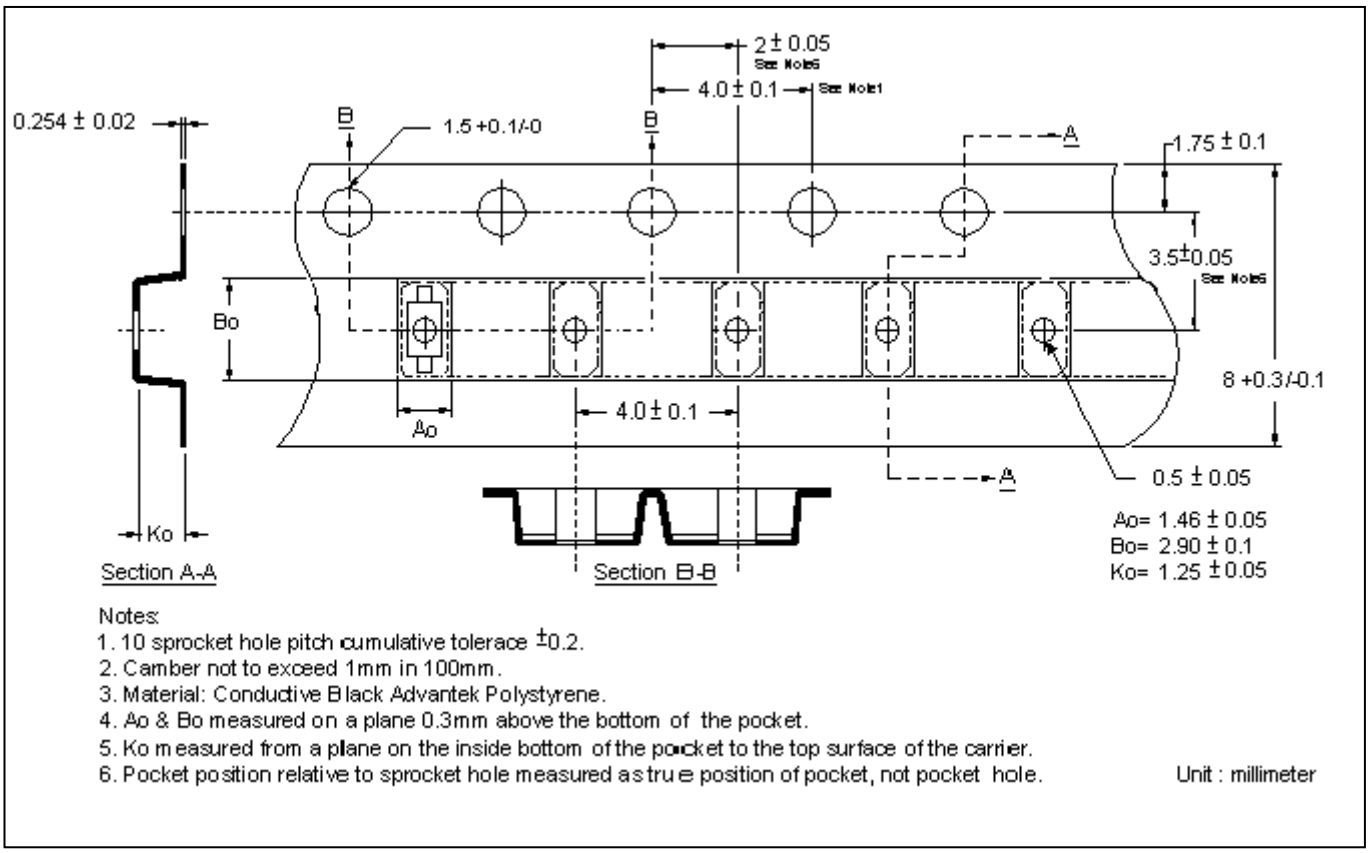

Junction Capacitance vs Reverse Voltage



## Reel Dimension




## Carrier Tape Dimension



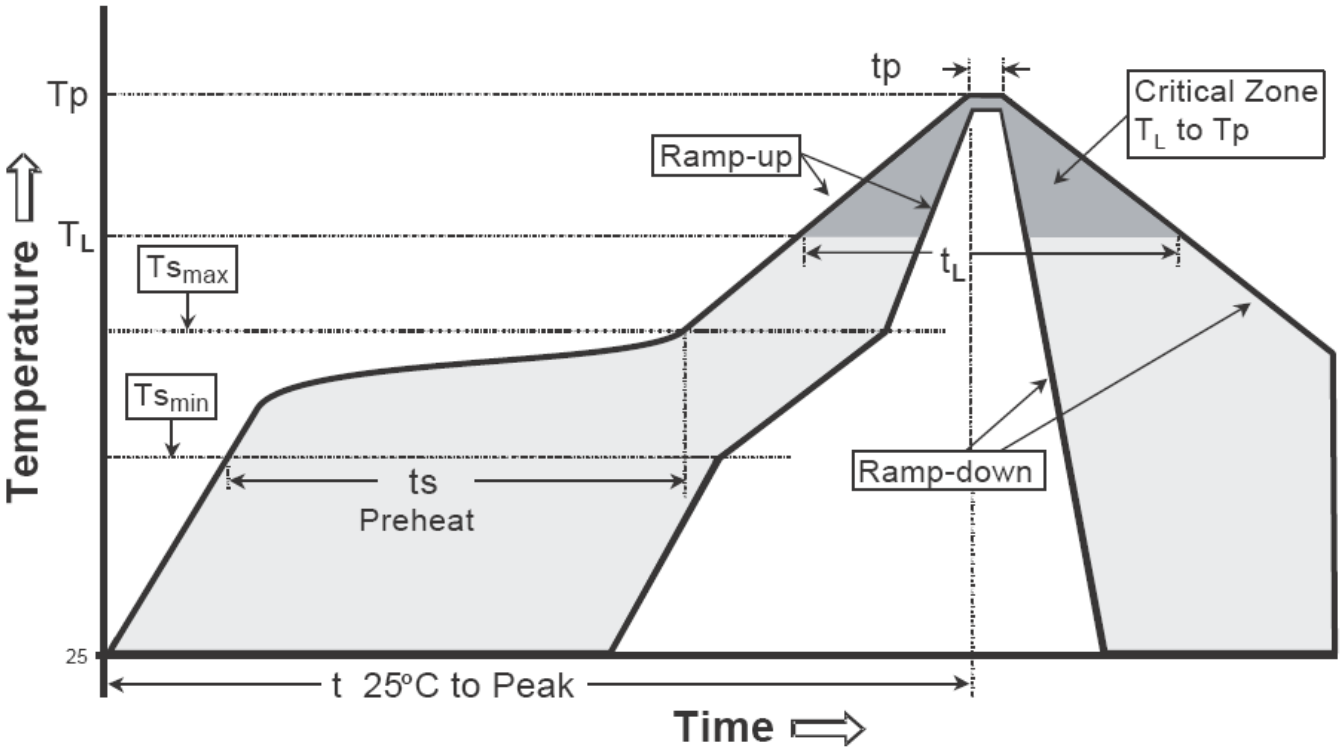

Notes:
1. 10 sprocket hole pitch cumulative tolerace ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material: Conductive Black Advantek Polystyrene.
4. Ao & Bo measured on a plane 0.3mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

Unit : millimeter

## Recommended wave soldering condition

| Product | Peak Temperature | Soldering Time |
|---|---|---|
| Pb-free devices | 260 +0/-5 °C | 5 +1/-1 seconds |

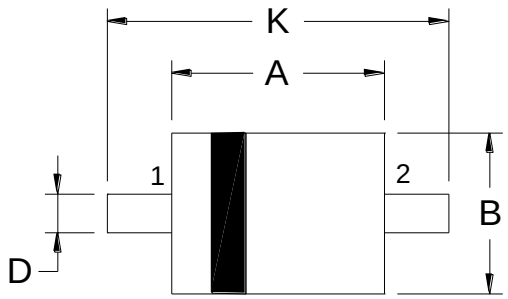
## Recommended temperature profile for IR reflow

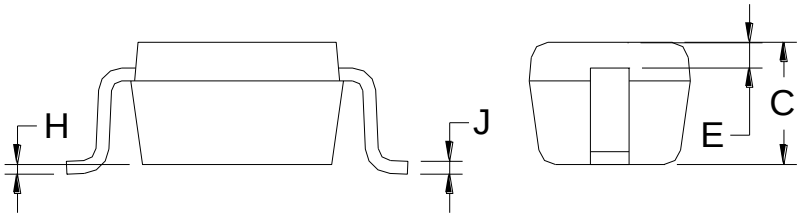



| Profile feature | Sn-Pb eutectic Assembly | Pb-free Assembly |
|---|---|---|
| Average ramp-up rate (Tsmax to Tp) | 3°C/second max. | 3°C/second max. |
| Preheat<br>−Temperature Min($T_S$ min)<br>−Temperature Max($T_S$ max)<br>−Time(ts min to ts max) | <br>100°C<br>150°C<br>60-120 seconds | <br>150°C<br>200°C<br>60-180 seconds |
| Time maintained above:<br>−Temperature ($T_L$)<br>− Time ($t_L$) | <br>183°C<br>60-150 seconds | <br>217°C<br>60-150 seconds |
| Peak Temperature($T_P$) | 240 +0/-5 °C | 260 +0/-5 °C |
| Time within 5°C of actual peak temperature(tp) | 10-30 seconds | 20-40 seconds |
| Ramp down rate | 6°C/second max. | 6°C/second max. |
| Time 25 °C to peak temperature | 6 minutes max. | 8 minutes max. |

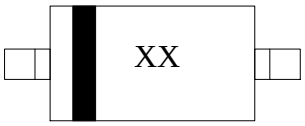
Note : All temperatures refer to topside of the package, measured on the package body surface.

## SOD-323 Dimension




Marking:




Style: Pin 1.Cathode 2.Anode

2-Lead SOD-323 Plastic
Surface Mounted Package
CYStek Package Code: S2

| Type | Marking Code |
|---|---|
| CSOD5819AS2 | S4 |

| DIM | Inches | | Millimeters | | DIM | Inches | | Millimeters | |
|---|---|---|---|---|---|---|---|---|---|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| A | 0.0630 | 0.0709 | 1.60 | 1.80 | E | 0.0060 | - | 0.15 | - |
| B | 0.0453 | 0.0531 | 1.15 | 1.35 | H | 0.0000 | 0.0040 | 0.00 | 0.10 |
| C | 0.0315 | 0.0394 | 0.80 | 1.00 | J | 0.0035 | 0.0070 | 0.089 | 0.177 |
| D | 0.0098 | 0.0157 | 0.25 | 0.40 | K | 0.0906 | 0.1063 | 2.30 | 2.70 |

Notes: 1.Controlling dimension : millimeters.
2.Lead thickness specified per L/F drawing with solder plating.
3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead: Pure tin plated.
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0.