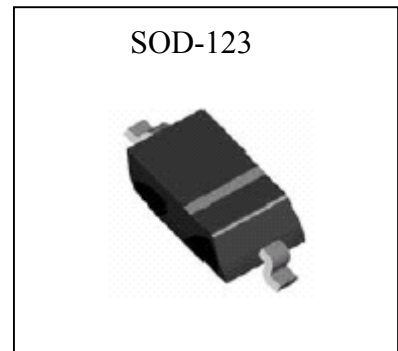


350mA Schottky Barrier Switching Diodes

SD103ASH thru SD103CSH


Features

- Low forward voltage drop
- Guard ring construction for transient protection
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- Low leakage current
- Pb-free lead plating and Halogen-free package

Mechanical Data

- Case: Molded plastic, JEDEC SOD-123.
- Terminals: Pure tin plated, solderable per MIL-STD-202 method 208
- Polarity: Indicated by cathode band.
- Weight: 0.01 gram approximately

Maximum Ratings and Electrical Characteristics

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

| Parameter | Symbol | Type | | | Units |
|---|-----------------|------------|--------|--------|-------|
| | | SD103A | SD103B | SD103C | |
| Repetitive peak reverse voltage | V_{RRM} | 40 | 30 | 20 | V |
| Working peak reverse voltage | V_{RWM} | 40 | 30 | 20 | V |
| Maximum RMS voltage | V_{RMS} | 28 | 21 | 14 | V |
| Maximum DC blocking voltage | V_R | 40 | 30 | 20 | V |
| Forward continuous current | I_{FM} | 350 | | | mA |
| Repetitive peak forward current @ $t \leq 1.0s$ | I_{FRM} | 1.5 | | | A |
| Power dissipation | P_D | 400 | | | mW |
| Maximum thermal resistance, Junction to ambient | $R_{\theta JA}$ | 250 | | | °C/W |
| Operating and storage temperature range | $T_J; T_{STG}$ | -65 ~ +125 | | | °C |



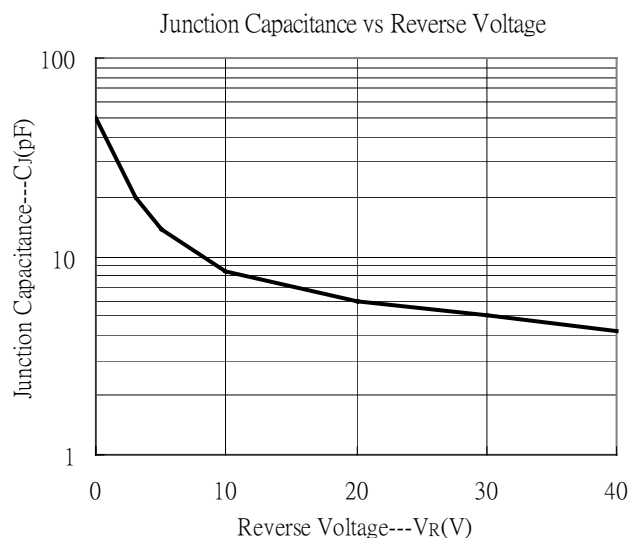
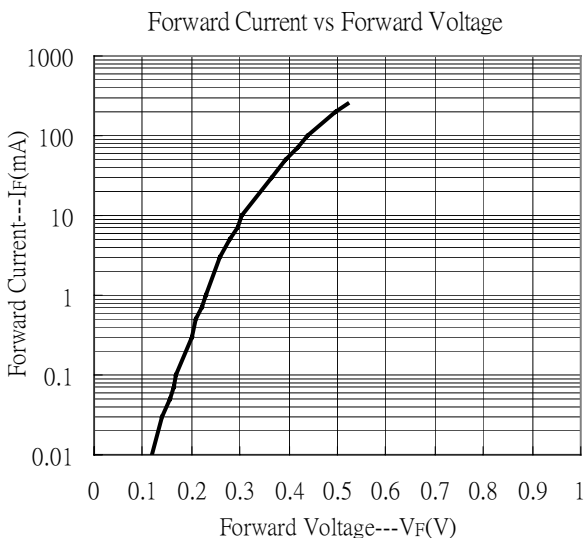
Electrical Characteristics @ $T_A=25^\circ\text{C}$ unless otherwise specified

| Parameters | | Symbol | Conditions | Min | Typ. | Max | Unit |
|---------------------------|--------|----------|--|-----|------|------------|---------------|
| Reverse breakdown voltage | SD103A | V_R | $I_R=100\mu\text{A}$ | 40 | - | - | V |
| | SD103B | | | 30 | - | - | |
| | SD103C | | | 20 | - | - | |
| Forward voltage | | V_F | $I_F=20\text{mA}$ $I_F=200\text{mA}$ | - | - | 370 600 | mV mV |
| Reverse current | SD103A | I_{RM} | $V_R=30\text{V}$ | - | - | 5 | μA |
| | SD103B | | $V_R=20\text{V}$ | | | | |
| | SD103C | | $V_R=10\text{V}$ | | | | |
| Junction Capacitance | | C_J | $V_R=0\text{V}, f=1\text{MHz}$ | - | 50 | - | pF |
| Reverse recovery time | | t_{rr} | $I_F=I_R=200\text{mA}, I_{rr}=0.1\times I_R,$ $R_L=100\Omega$ | - | 10 | - | ns |

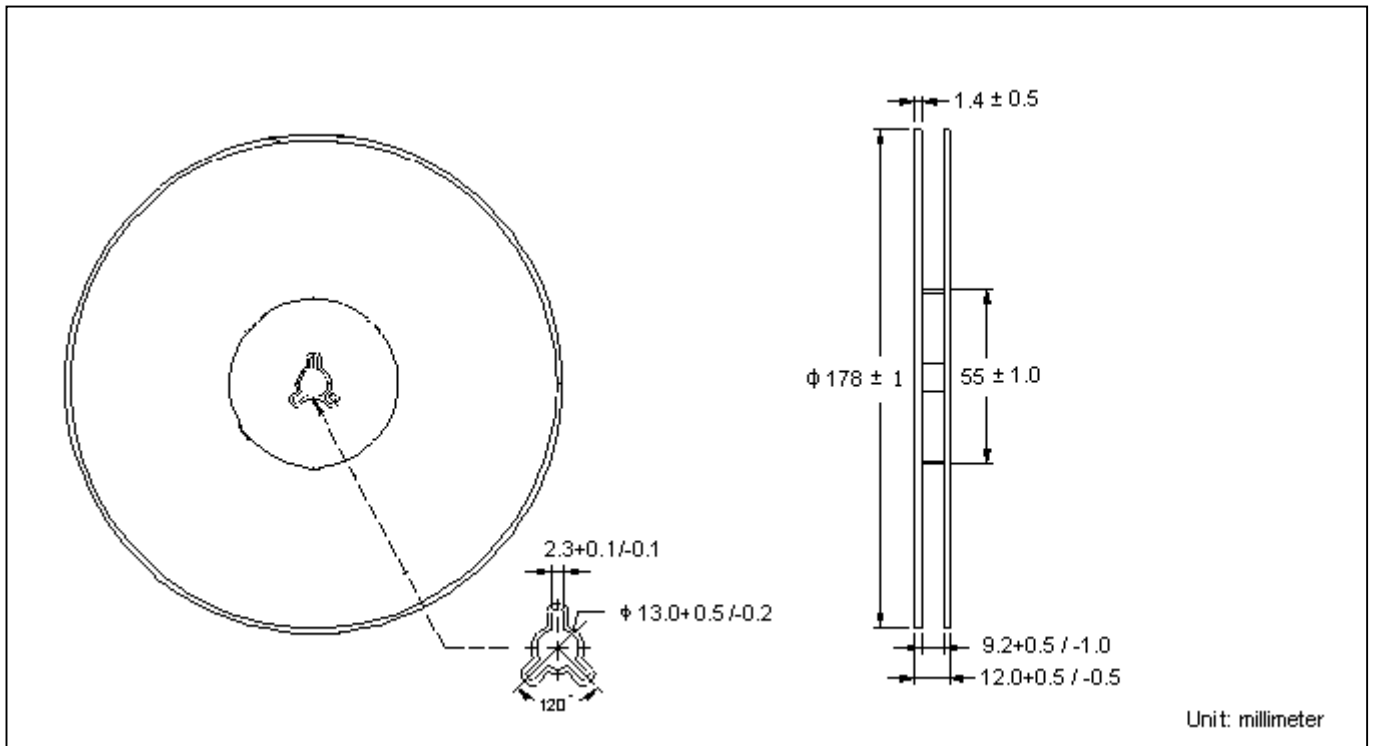
Ordering Information

| Device | Package | Shipping | Marking |
|----------|--|------------------------|---------|
| SD103ASH | SOD-123 (Pb-free lead plating and Halogen-free package) | 3000 pcs / Tape & Reel | S4 |
| SD103BSH | SOD-123 (Pb-free lead plating and Halogen-free package) | 3000 pcs / Tape & Reel | S5 |
| SD103CSH | SOD-123 (Pb-free lead plating and Halogen-free package) | 3000 pcs / Tape & Reel | S6 |

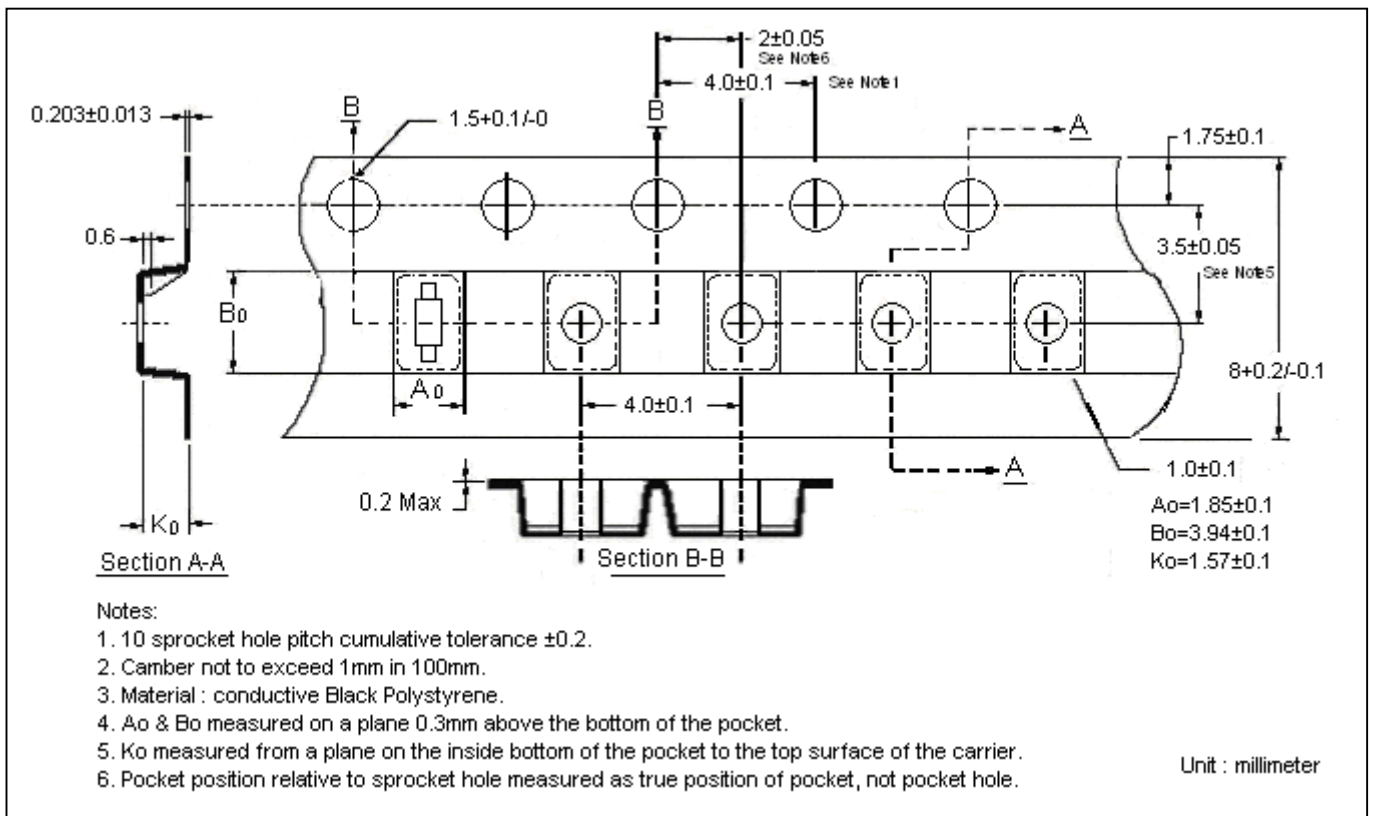
Characteristic Curves



Reel Dimension



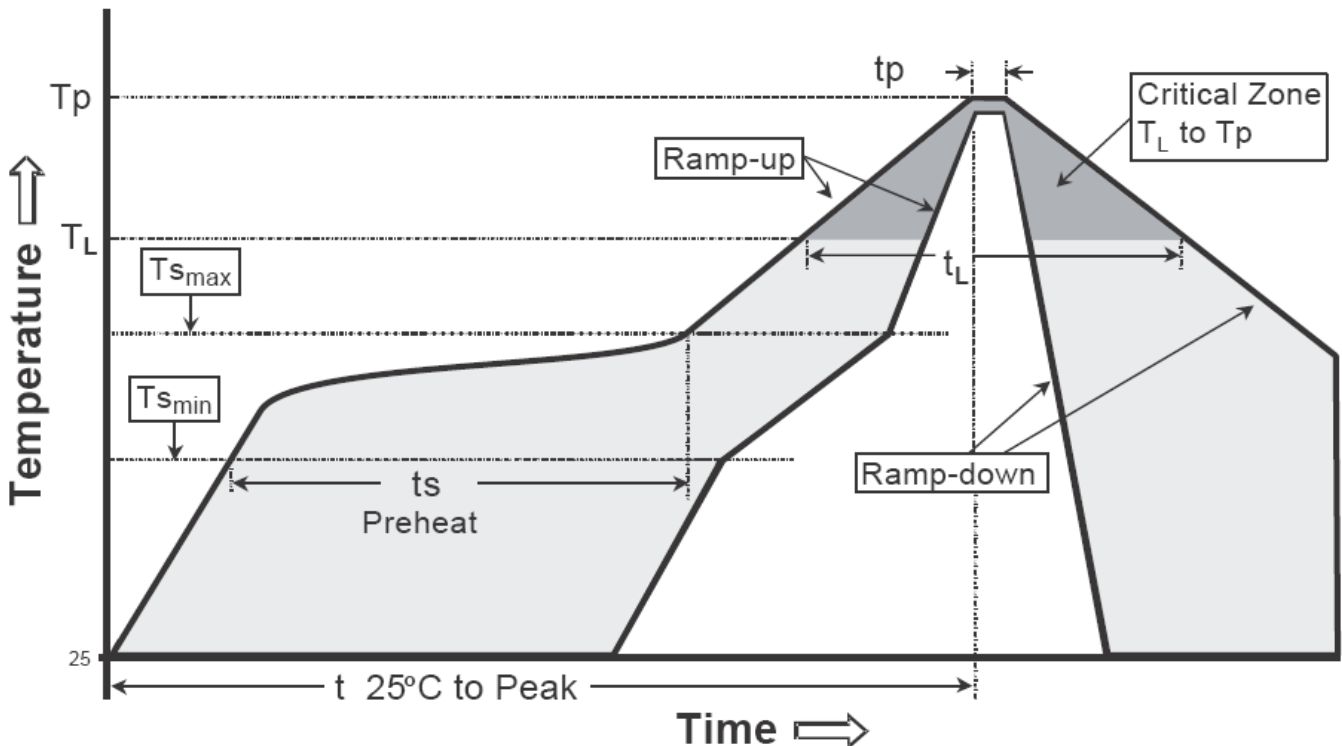
Carrier Tape Dimension



Recommended wave soldering condition

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

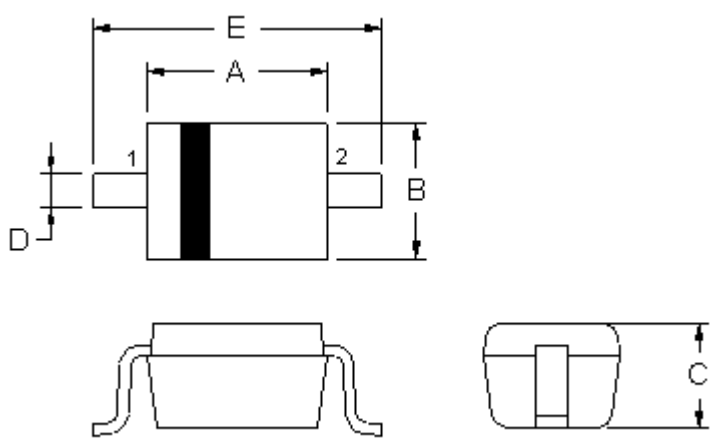
Recommended temperature profile for IR reflow



| 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 | | |
| -Temperature Min(Ts min) | 100°C | 150°C |
| -Temperature Max(Ts max) | 150°C | 200°C |
| -Time(ts min to ts max) | 60-120 seconds | 60-180 seconds |
| Time maintained above: | | |
| -Temperature (Tl) | 183°C | 217°C |
| - Time (tl) | 60-150 seconds | 60-150 seconds |
| Peak Temperature(Tp) | 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-123 Dimension



2-Lead SOD-123 Plastic
 Surface Mounted Package
 CYStek Package Code: SH

Style: Pin 1.Cathode 2.Anode

Marking:

| | | |
|---------|--------|--------|
| Device | SD103A | SD103B |
| Marking | S4 | S5 |

| | | |
|---------|--------|--|
| Device | SD103C | |
| Marking | S6 | |

| DIM | Inches | | Millimeters | | DIM | Inches | | Millimeters | |
|-----|--------|-------|-------------|-------|-----|--------|-------|-------------|-------|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| A | 0.102 | 0.110 | 2.600 | 2.800 | D | 0.018 | 0.026 | 0.450 | 0.650 |
| B | 0.059 | 0.067 | 1.500 | 1.700 | E | 0.140 | 0.152 | 3.550 | 3.850 |
| C | 0.041 | 0.049 | 1.050 | 1.250 | | | | | |

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

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