



1.0Amp. Surface Mount Schottky Barrier Diodes

CSOD120-1100SH Series

Features

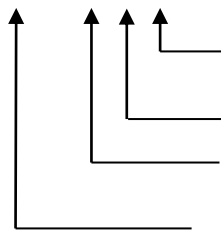
- For surface mounted applications.
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- Low leakage current
- High surge capability
- High temperature soldering: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

Mechanical Data

- Case: Molded plastic, JEDEC SOD-123.
- Terminals: Pure tin plated, solderable per MIL-STD-202 method 208
- Polarity: Indicated by cathode band.
- Weight: 0.009 gram approximately

Ordering Information

| Device | Package | Shipping |
|-------------------|--|------------------------|
| CSODXXXXSH-0-T1-G | SOD-123 (Pb-free lead plating and halogen-free package) | 3000 pcs / tape & reel |



Environment friendly grade : S for RoHS compliant products, G for RoHS compliant and green compound products

Packing spec, T1 : 3000 pcs / tape & reel, 7" reel

Product rank, zero for no rank products

Product name

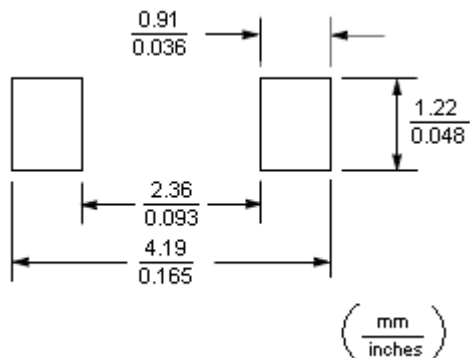
Maximum Ratings and Electrical Characteristics

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

| Parameter | Symbol | Type | | | | Units |
|---|--------------------|------------|---------|---------|----------|----------|
| | | CSOD120 | CSOD140 | CSOD160 | CSOD1100 | |
| Repetitive peak reverse voltage | V _{RRM} | 20 | 40 | 60 | 100 | V |
| Maximum RMS voltage | V _{RMS} | 14 | 28 | 42 | 70 | V |
| Maximum DC blocking voltage | V _R | 20 | 40 | 60 | 100 | V |
| Maximum instantaneous forward voltage, I _F =1A (Note 1) | V _F | 0.45 | 0.55 | 0.66 | 0.83 | 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} | 30 | | | | A |
| Maximum DC reverse current V _R =V _{RRM} , T _J =25°C (Note 1) V _R =V _{RRM} , T _J =125°C (Note 1) | I _R | 0.3 10 | | | | mA mA |
| Maximum thermal resistance, Junction to ambient | R _{th,JA} | 250(typ) | | | | °C/W |
| Diode junction capacitance @ f=1MHz and applied 5V reverse voltage | C _D | 45 (typ) | | | | pF |
| Storage temperature range | T _{stg} | -65 ~ +175 | | | | °C |
| Operating temperature range | T _J | -50 ~ +150 | | | | °C |

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

Recommended Soldering Footprint



Typical Characteristics

Fig. 1 Forward Current Derating Curve

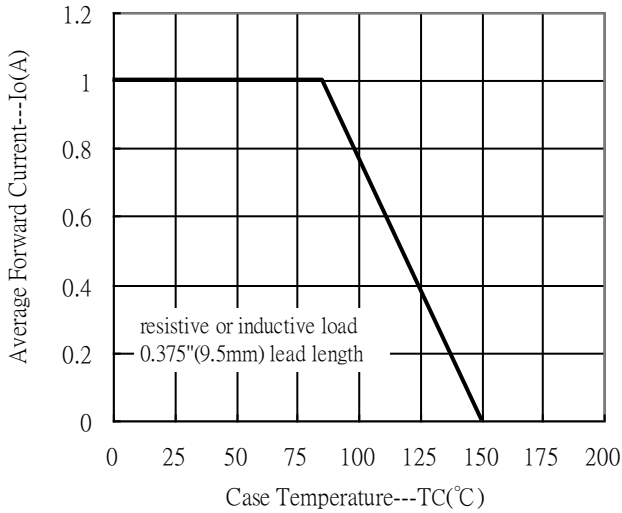


Fig. 2 Maximum Non-repetitive Forward Surge Current

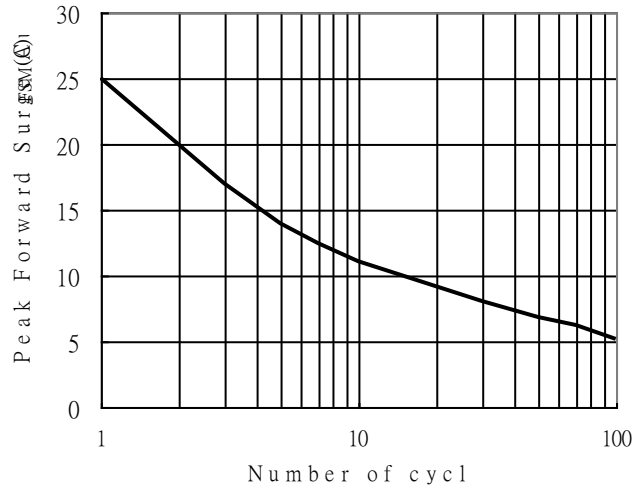


Fig. 3. Forward Characteristics

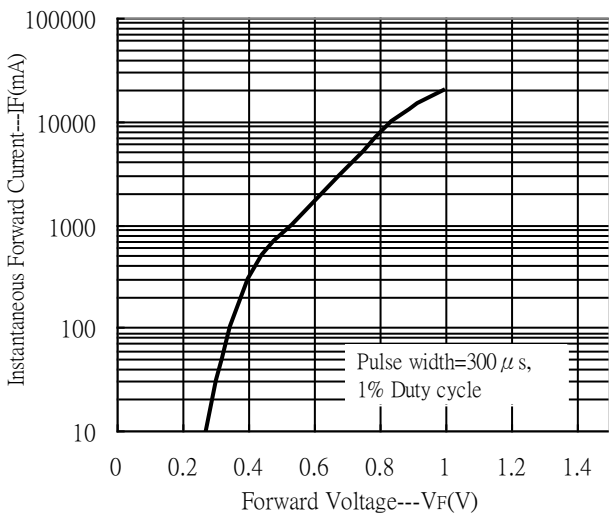


Fig. 4 Typical Reverse Characteristics

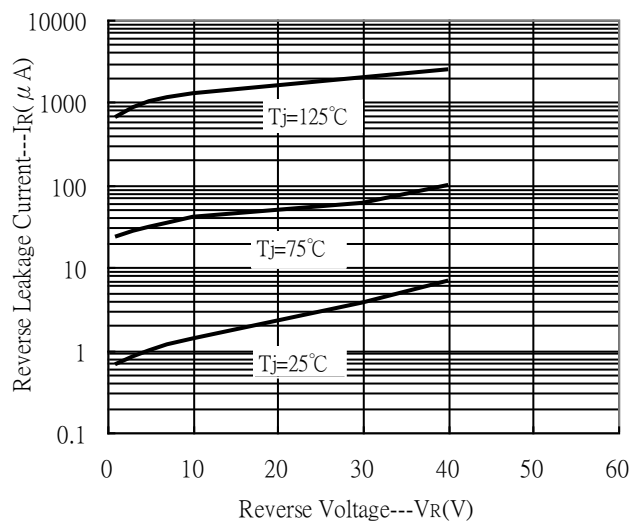


Fig. 5 Typical Junction Capacitance

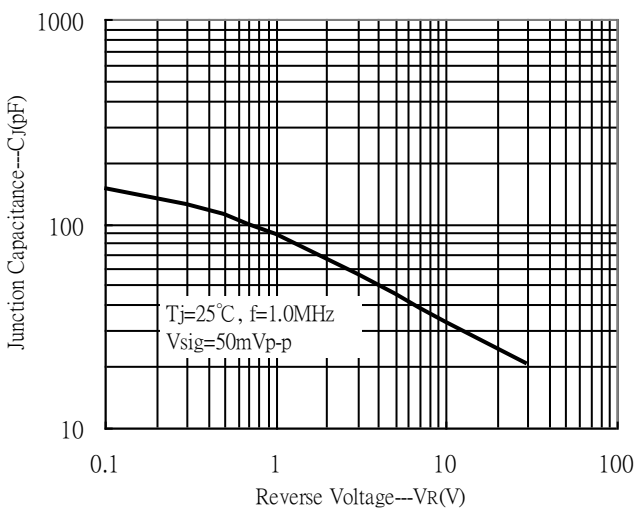
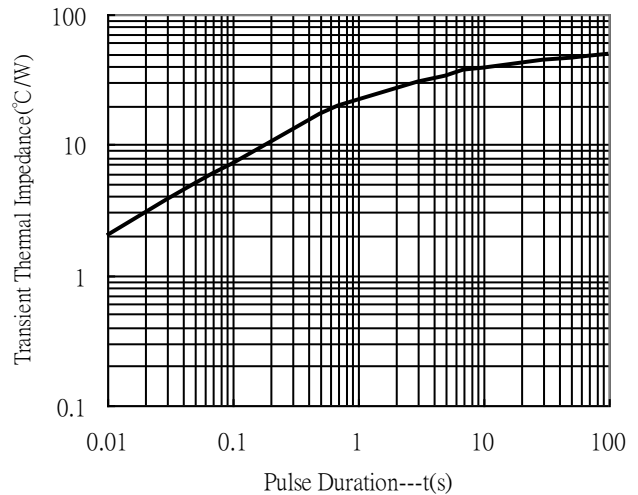
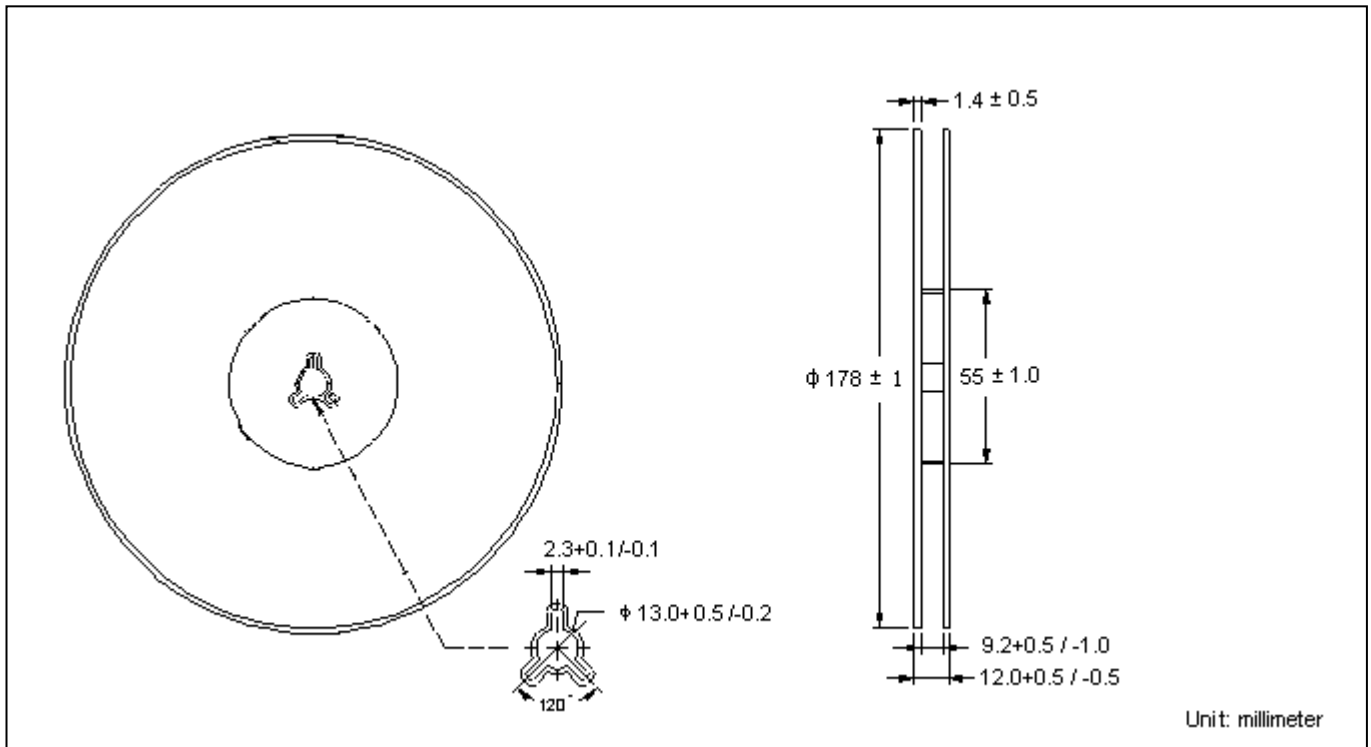


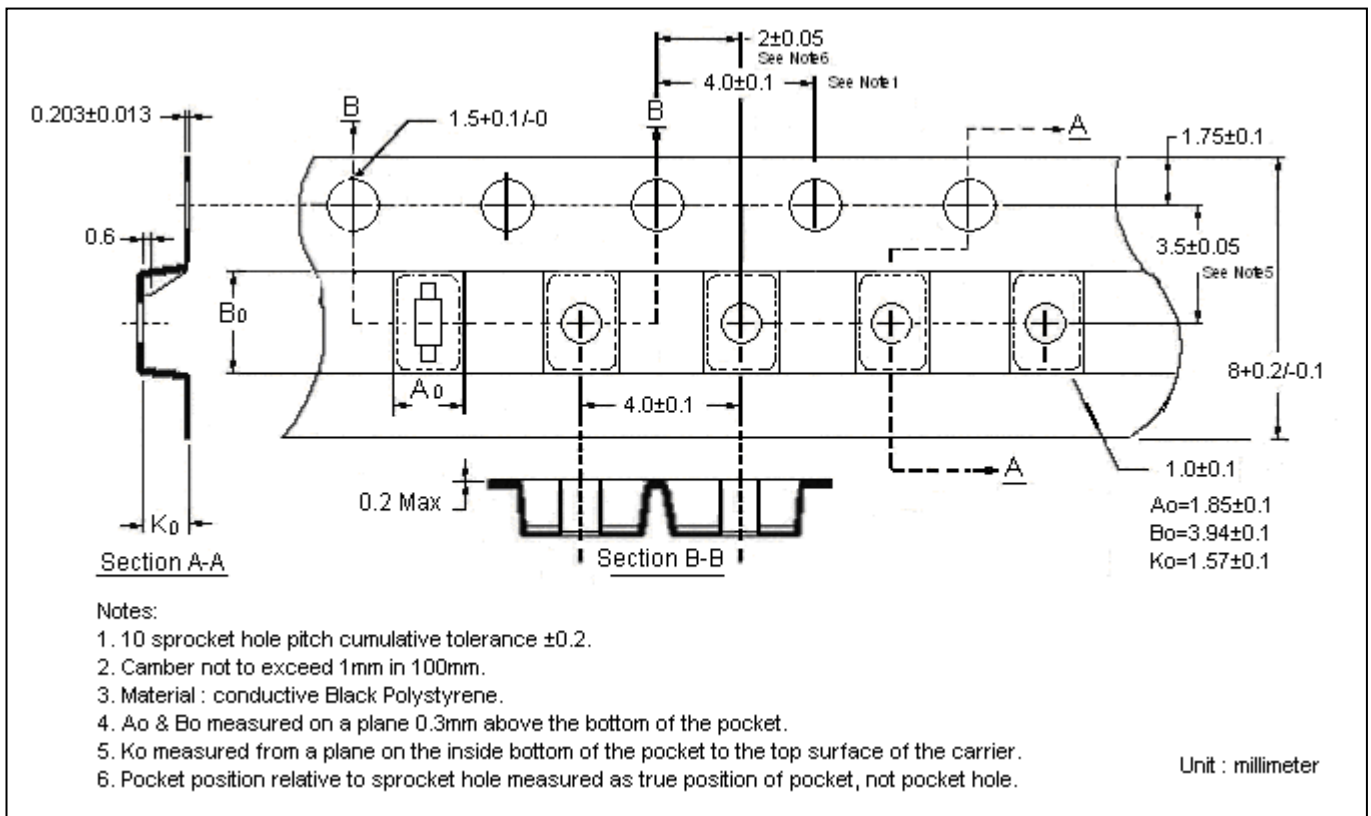
Fig. 6 Typical Transient Thermal Impedance



Reel Dimension



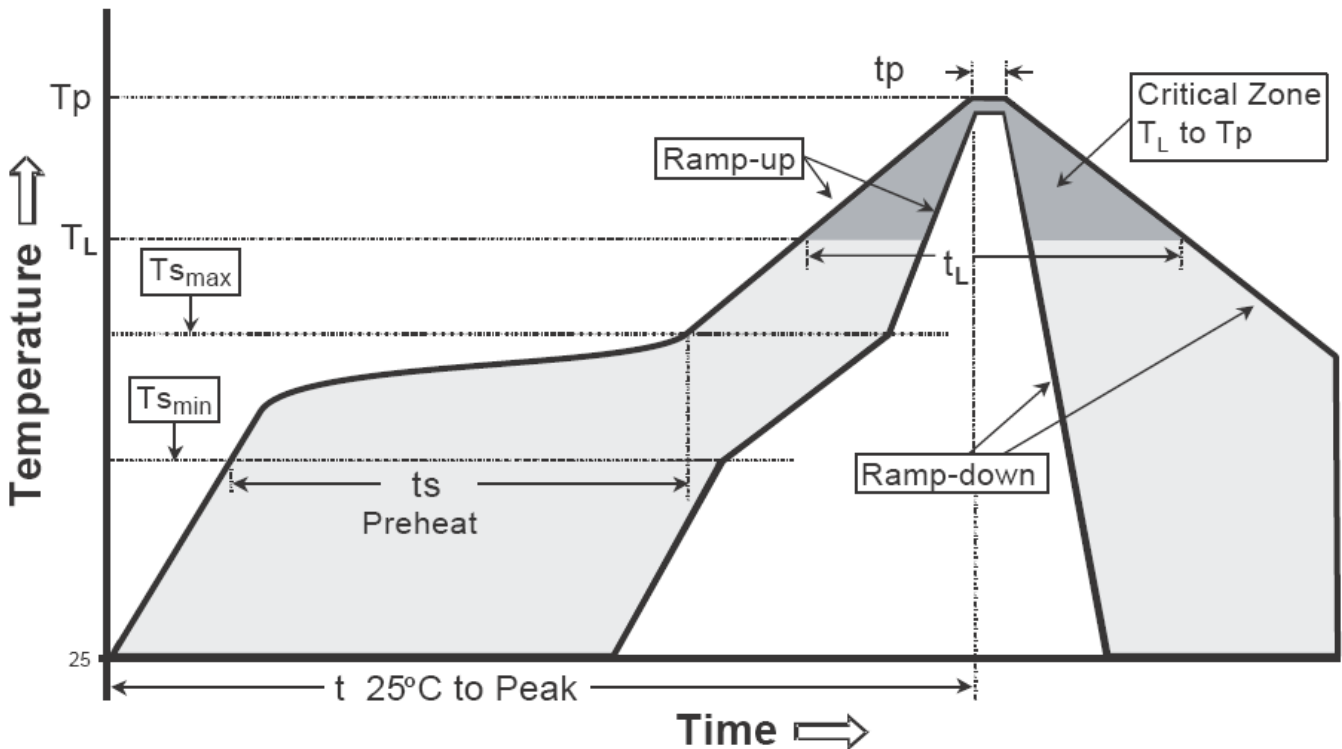
Carrier Tape Dimension



Recommended wave soldering condition

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

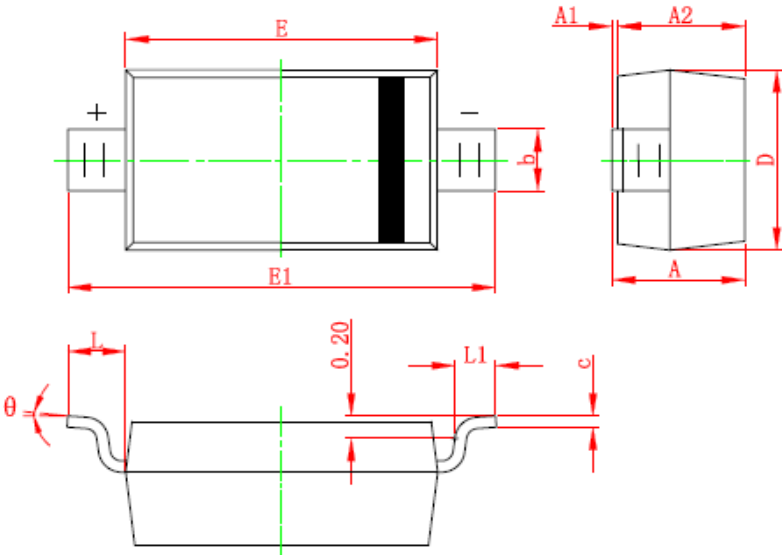
Recommended temperature profile for IR reflow



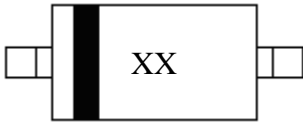
| Profile feature | Sn-Pb eutectic Assembly | Pb-free Assembly |
|---|-------------------------|------------------|
| Average ramp-up rate (T _{smax} to T _p) | 3°C/second max. | 3°C/second max. |
| Preheat | | |
| -Temperature Min(T _{s min}) | 100°C | 150°C |
| -Temperature Max(T _{s max}) | 150°C | 200°C |
| -Time(t _{s min} to t _{s max}) | 60-120 seconds | 60-180 seconds |
| Time maintained above: | | |
| -Temperature (T _L) | 183°C | 217°C |
| - Time (t _L) | 60-150 seconds | 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-123 Dimension



Marking:



| | | |
|---------|---------|---------|
| Device | CSOD120 | CSOD140 |
| Marking | SJ | SL |

| | | |
|---------|---------|----------|
| Device | CSOD160 | CSOD1100 |
| Marking | SN | SP |

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

Style: Pin 1.Cathode 2.Anode

| DIM | Millimeters | | Inches | | DIM | Millimeters | | Inches | |
|-----|-------------|-------|--------|-------|-----|-------------|-------|-----------|-------|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| A | 1.050 | 1.250 | 0.041 | 0.049 | E | 2.600 | 2.800 | 0.102 | 0.110 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 | E1 | 3.550 | 3.850 | 0.140 | 0.152 |
| A2 | 1.050 | 1.115 | 0.041 | 0.045 | L | 0.500 REF | | 0.020 REF | |
| b | 0.450 | 0.650 | 0.018 | 0.026 | L1 | 0.250 | 0.450 | 0.010 | 0.018 |
| c | 0.080 | 0.150 | 0.003 | 0.006 | θ | 0° | 8° | 0° | 8° |
| D | 1.500 | 1.700 | 0.059 | 0.067 | | | | | |

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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