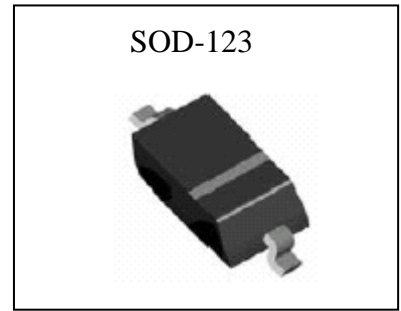


# 1.0Amp. Surface Mount Schottky Barrier Diodes

# CSOD140SH



## Features

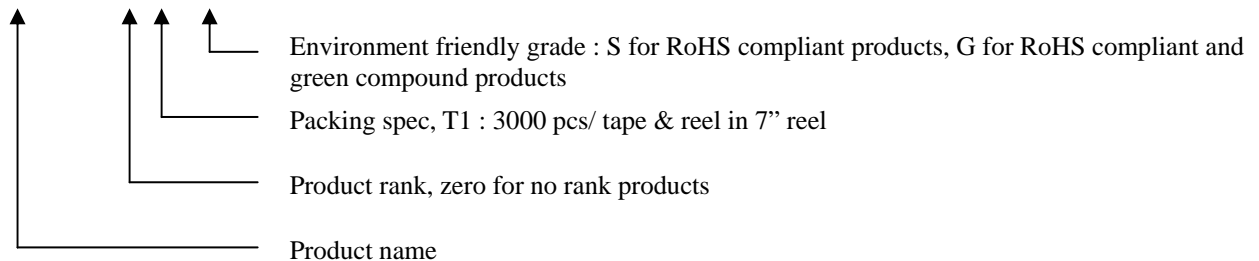
- For surface mounted applications.
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- Low leakage current
- High surge capability
- High temperature soldering: 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: 0.04 gram approximately

## Ordering Information

Device	Package	Shipping
CSOD140SH-0-T1-G	SOD-123 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel



## Maximum Ratings and Electrical Characteristics

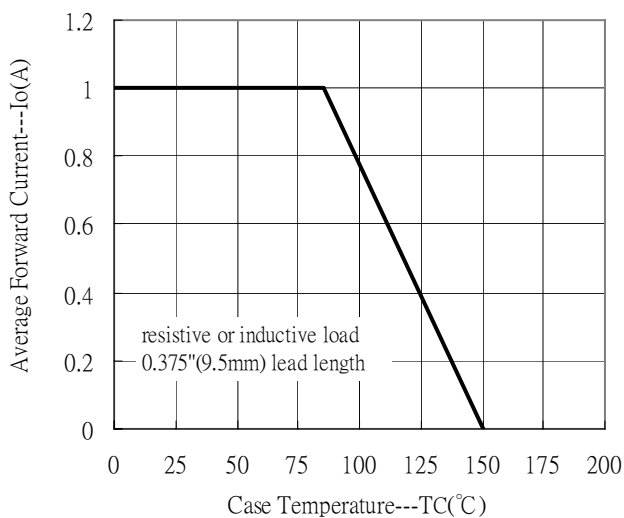
(Rating at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbol	Limits	Units
Repetitive peak reverse voltage	V <sub>RRM</sub>	40	V
Maximum RMS voltage	V <sub>RMS</sub>	28	V
Maximum DC blocking voltage	V <sub>R</sub>	40	V
Maximum instantaneous forward voltage, I <sub>F</sub> =1A (Note 1)	V <sub>F</sub>	0.55	V
Average forward rectified current	I <sub>O</sub>	1	A
Peak forward surge current @ 8.3ms single half sine wave superimposed on rated load (JEDEC method)	I <sub>FSM</sub>	30	A
Maximum DC reverse current V <sub>R</sub> =40V, T <sub>J</sub> =25°C (Note 1) V <sub>R</sub> =40V, T <sub>J</sub> =125°C (Note 1)	I <sub>R</sub>	0.3 10	mA mA
Power Dissipation	P <sub>D</sub>	500	mW
Maximum thermal resistance, Junction to ambient	R <sub>th,JA</sub>	250(typ)	°C/W
Diode junction capacitance @ f=1MHz and applied 5V reverse voltage	C <sub>D</sub>	45 (typ)	pF
Storage temperature range	T <sub>stg</sub>	-65 ~ +175	°C
Operating temperature range	T <sub>J</sub>	-50 ~ +150	°C

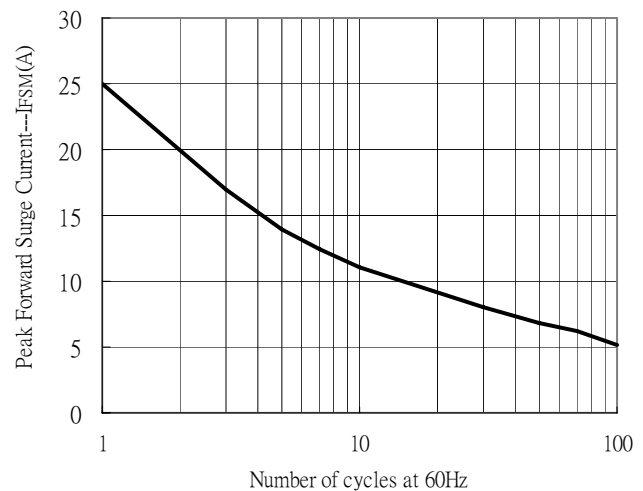
Notes : 1.Pulse test, pulse width=300 μ sec, 2% duty cycle

## Typical Characteristics

**Fig. 1 Forward Current Derating Curve**

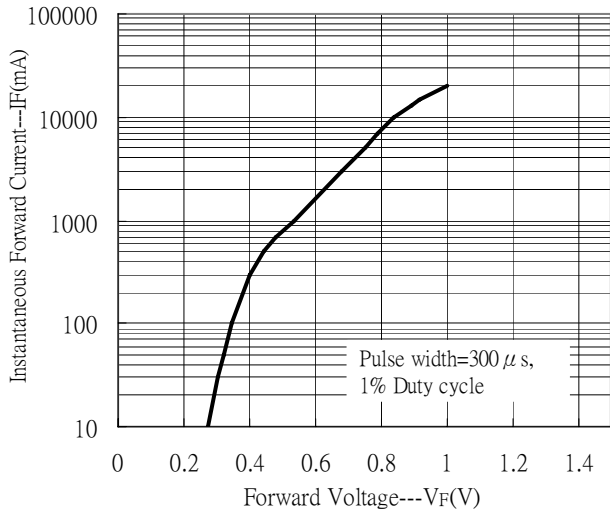


**Fig. 2 Maximum Non-repetitive Peak Forward Surge Current**

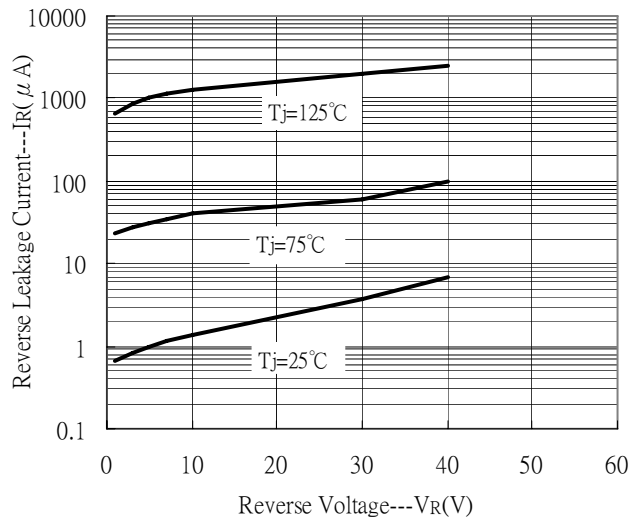


**Typical Characteristics(Cont.)**

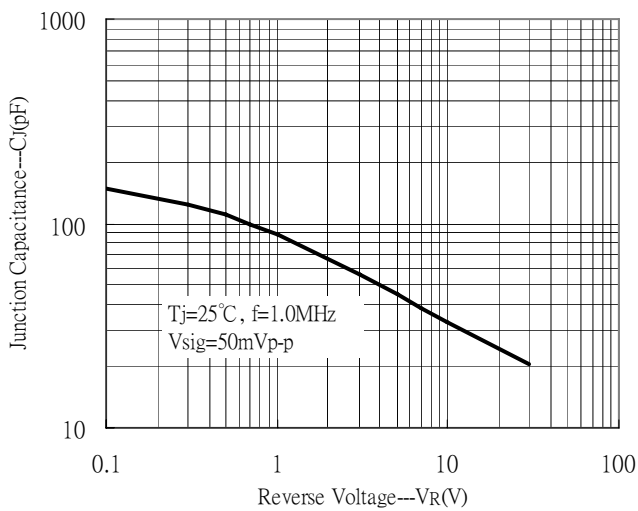
**Fig 3. Forward Characteristics**



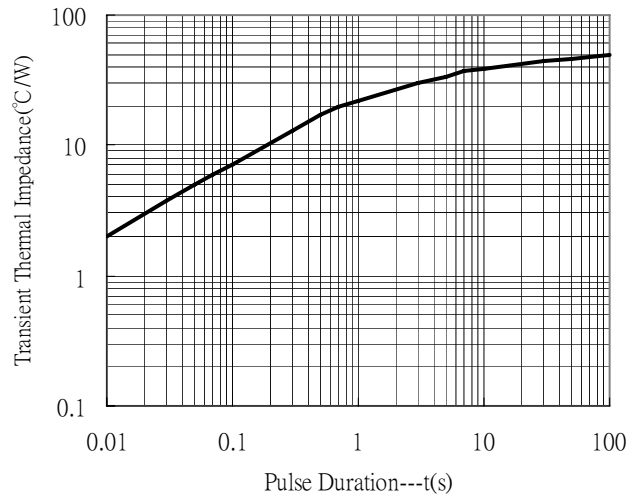
**Fig. 4 Typical Reverse Characteristics**



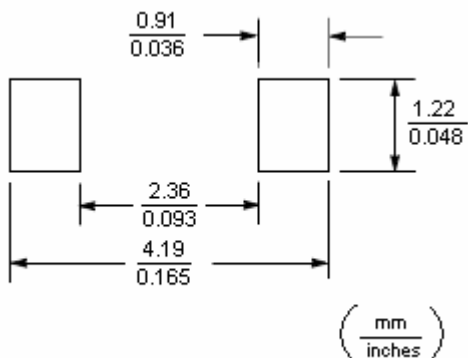
**Fig. 5 Typical Junction Capacitance**



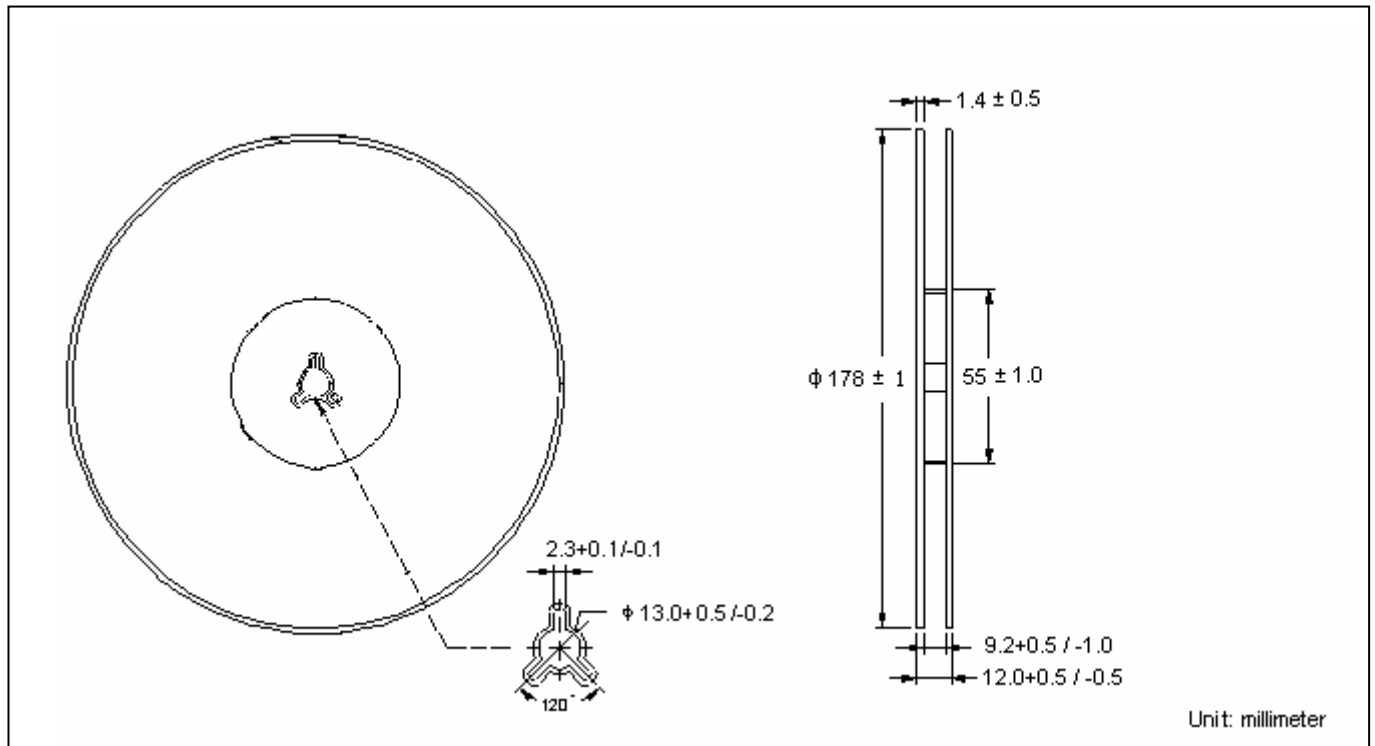
**Fig. 6 Typical Transient Thermal Impedance**



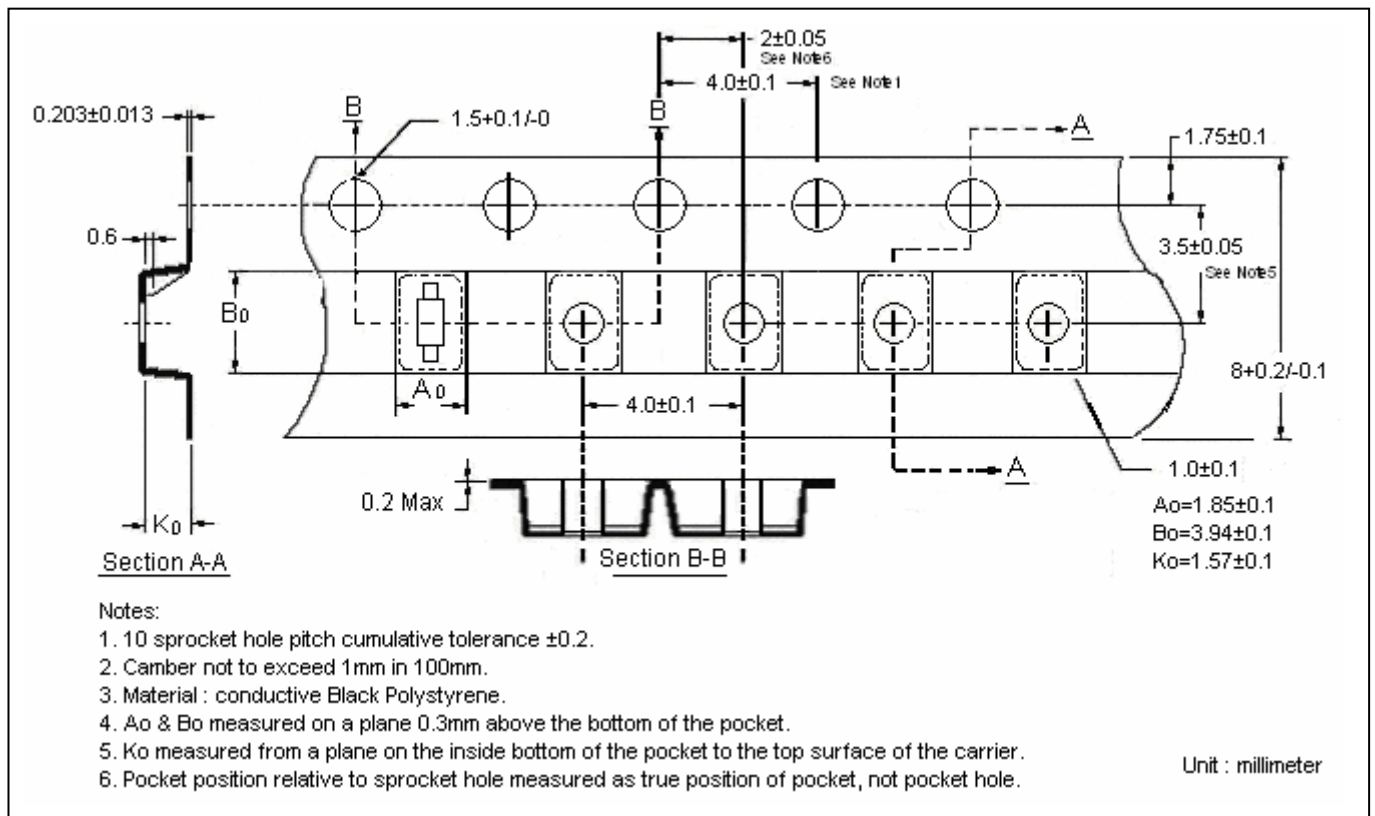
**Recommended Soldering Footprint**



**Reel Dimension**



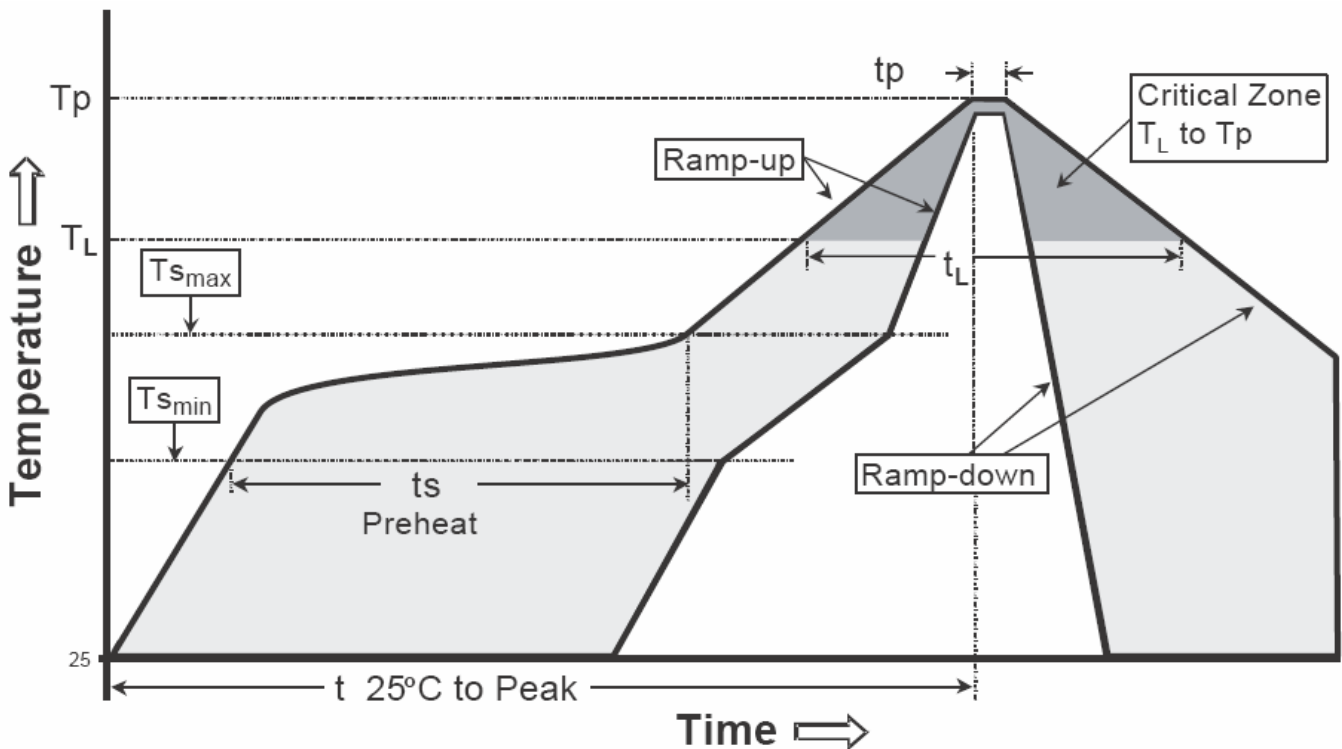
**Carrier Tape Dimension**



**Recommended wave soldering condition**

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

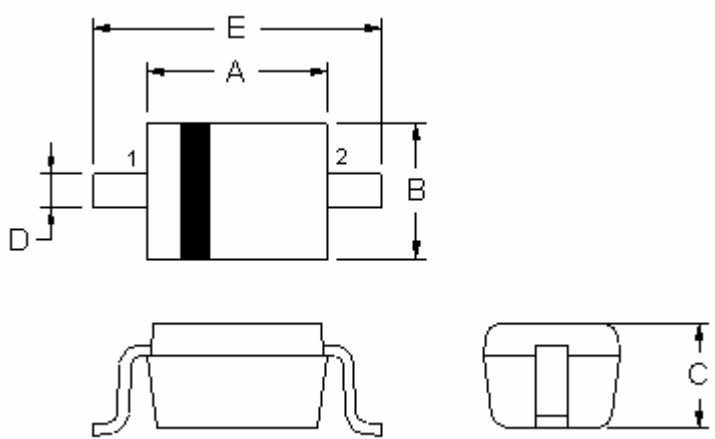
**Recommended temperature profile for IR reflow**



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Ts_max 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 (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:

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

Style: Pin 1.Cathode 2.Anode

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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