400mW SOD-123 Plastic Encapsulated Diodes

1N4148WSH

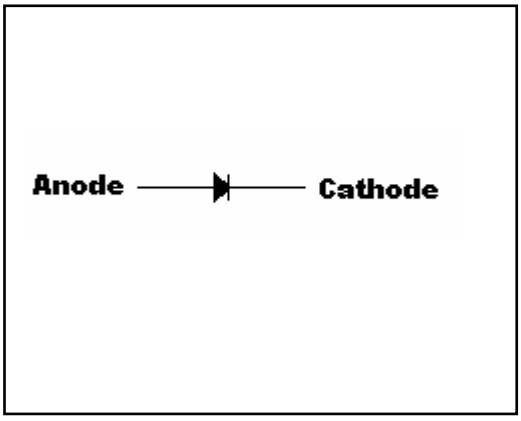
Features:

- Fast switching speed
- Surface mount package suitable for automatic insertion
- For general purpose switching applications
- High conductance

Mechanical Data

- Case : SOD-123 , molded plastic
- Terminals : Solderable per MIL-STD-750 method 2026
- Polarity : Cathode indicated by polarity band.
- Flammability rating : UL94 V-0
- Package weight : approx. 0.01 gram/unit
- Mounting position : Any

Symbol



Outline

SOD-123

Ordering Information

Device	Package	Shipping
1N4148WSH-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(T_A=25℃, unless otherwise noted)

Characteristics	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage	V_{RM}	100	V
Repetitive Peak Reverse Voltage	V_{RRM}	100	V
DC Blocking Voltage	V_R	100	V
RMS Reverse Voltage	V_{RMS}	70	V
Forward Continuous Current	I_{FM}	500	mA
Average Forward Rectified Current	I_O	250	mA
Peak Forward Surge Current @ tp=1.0μs	I_{FSM}	4.0	A
@ tp=1.0 s		2.0	
Power Dissipation	P_D	400	mW
Junction Temperature	Tj	125	°C
Storage Temperature Range	Tstg	-65 to +150	°C

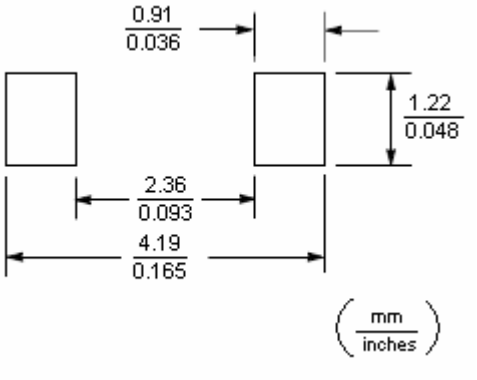
Maximum Thermal Resistance(T_A=25℃)

Parameter	Test Conditions	Symbol	Value	Unit
Junction to Ambient Resistance		$R_{th,JA}$	315	°C/W

Electrical Characteristics (T_A=25°C, unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Forward Voltage	I_F=5mA	V_F	0.62	-	0.72	V
	I_F=10mA		-	-	0.855	
	I_F=100mA		-	-	1.0	
	I_F=150mA		-	-	1.25	
Reverse Current	V_R=20V	I_R	-	-	25	nA
	V_R=100V		-	-	2.5	μA
Reverse Breakdown Voltage	I_R=10μA	$V_{(BR)}$	100	-	-	V
Diode Capacitance	V_R=0, f=1MHz	C_T	-	-	4	pF
Reverse Recovery Time	I_F=I_R=10mA,I_{RR}=0.1×I_R, R_L=100Ω	t_{rr}	-	-	4	ns

Recommended Soldering Footprint



Typical Characteristics

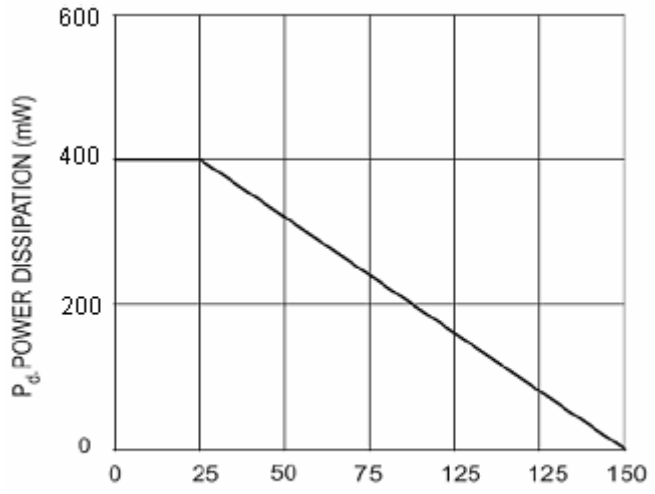


Fig. 1 Forward Current Derating Curve

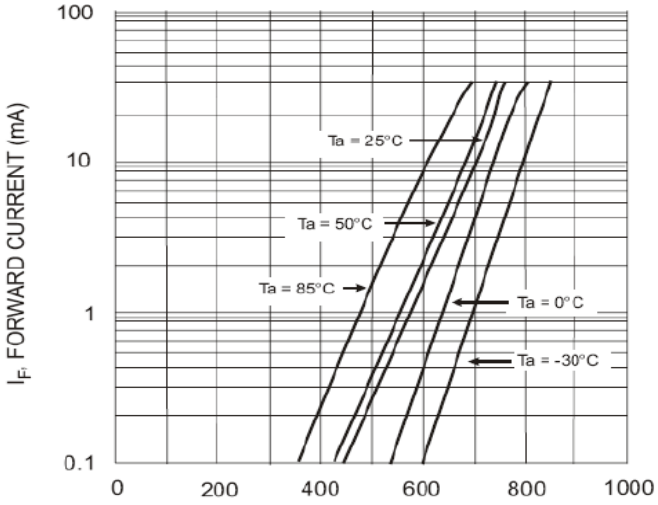


Fig. 2 Typical Forward Characteristics

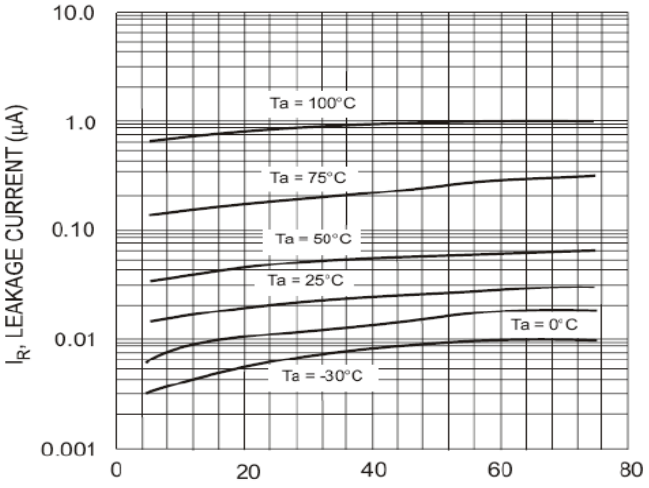


Fig. 3 Typical Reverse Characteristics

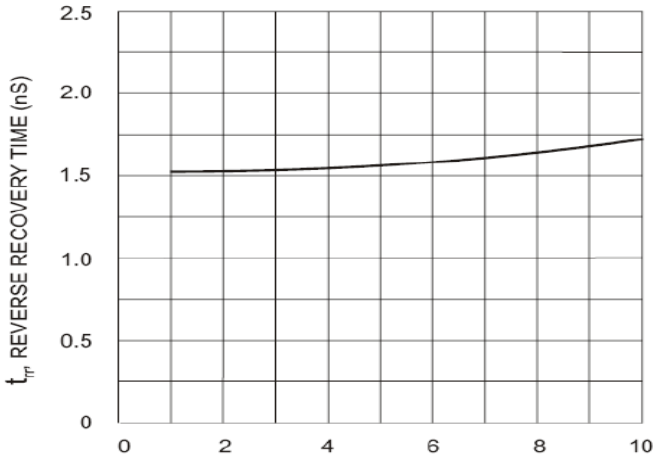


Fig. 4 Reverse Recovery Time vs. Forward Current

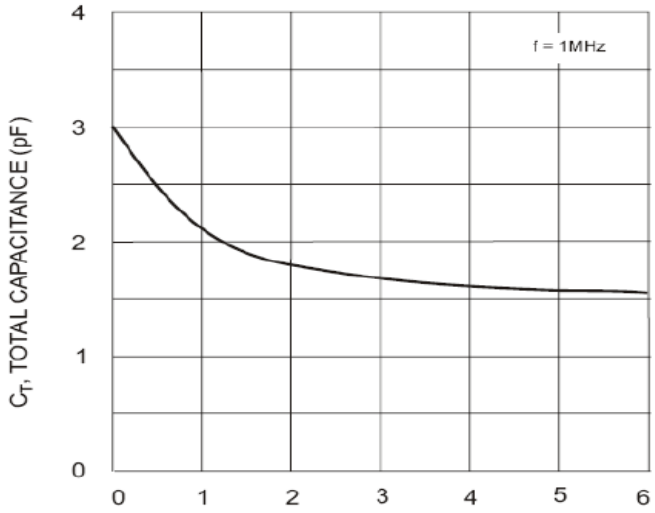
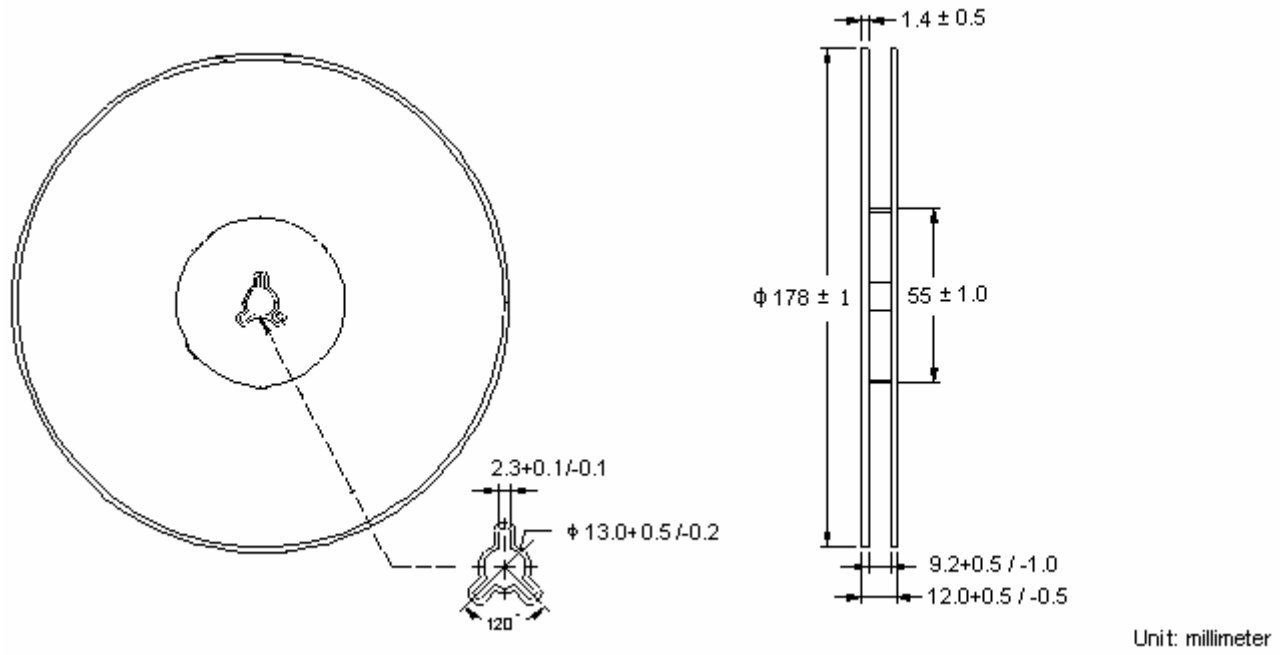
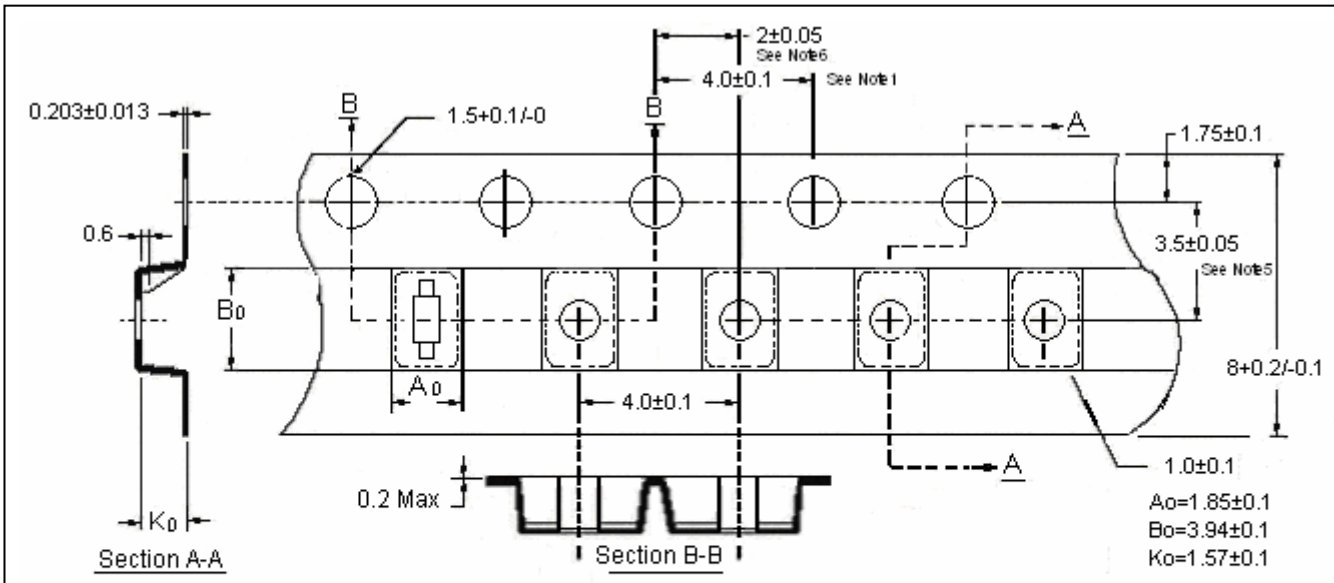


Fig. 5 Total Capacitance vs. Reverse Voltage

Reel Dimension



Carrier Tape Dimension



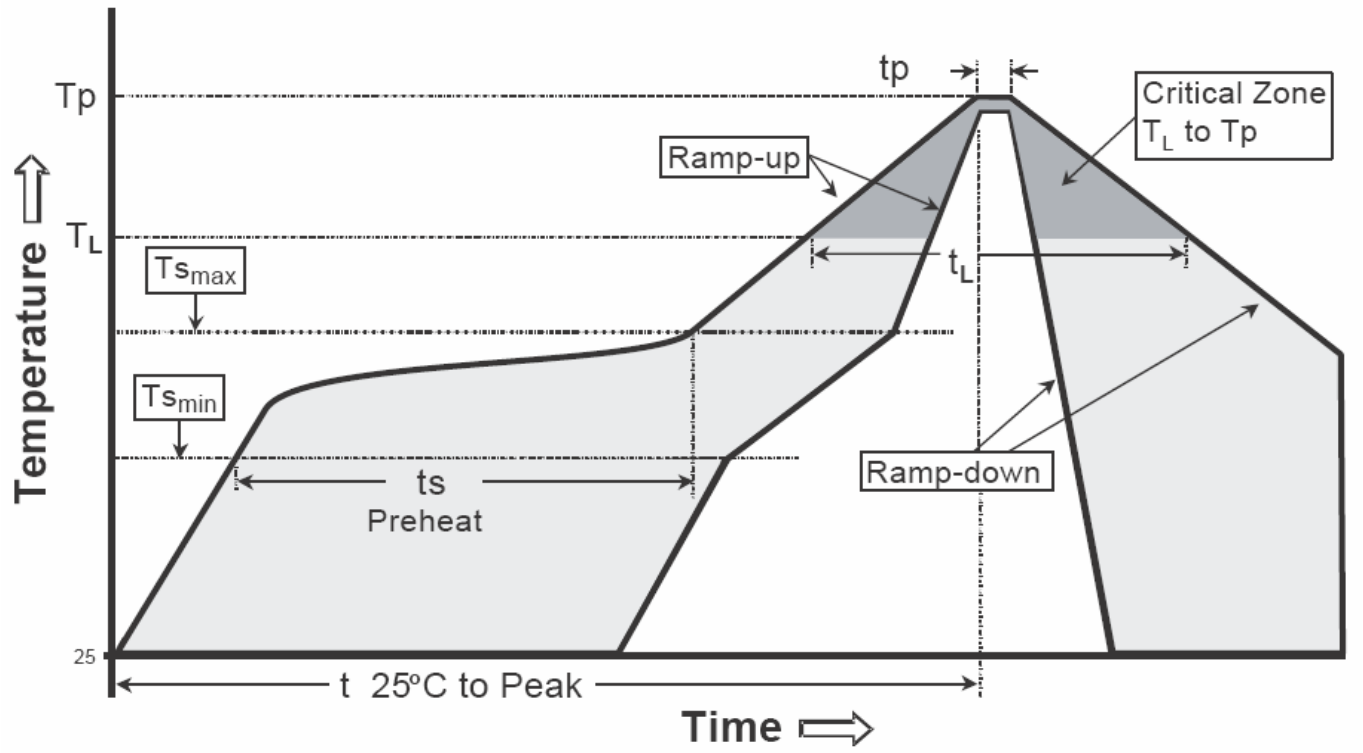
Notes:
1. 10 sprocket hole pitch cumulative tolerance ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material : conductive Black Polystyrene.
4. Ao & Bo measured on a plane 0.3mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
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

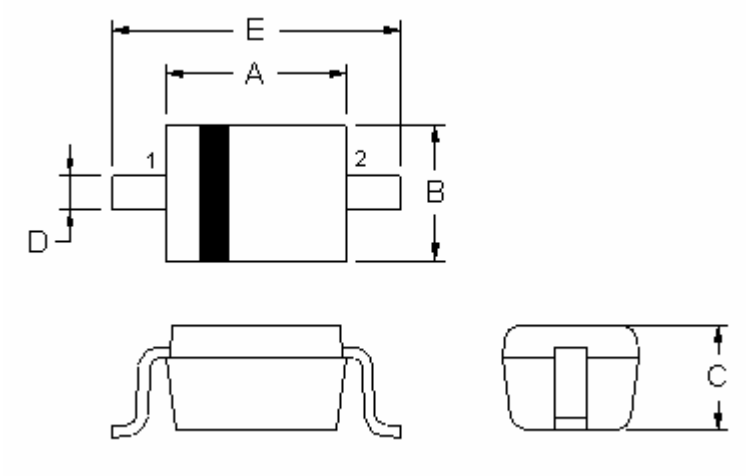
Recommended temperature profile for IR reflow



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 −Temperature Min(Ts min) −Temperature Max(Ts max) −Time(ts min to ts max)	 100°C 150°C 60-120 seconds	 150°C 200°C 60-180 seconds
Time maintained above: −Temperature (TL) − Time (tL)	 183°C 60-150 seconds	 217°C 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



Marking:

Style: Pin 1.Cathode 2.Anode

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

*: Typical

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

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.