

0.5A surface mount Schottky diode

CSOD0540SH

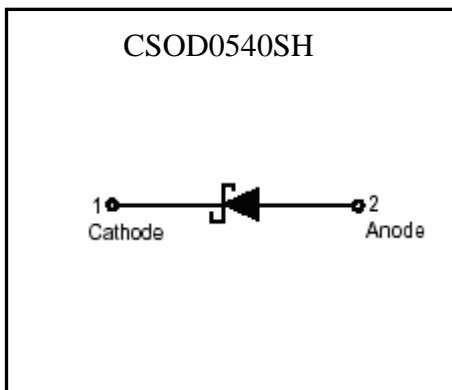
Features

- High current capability, low forward voltage drop
- High surge current capability
- Guardring for over voltage protection
- Low power loss, high efficiency
- Ultra high-speed switching
- Low profile surface mounted package in order to minimize board space
- Pb-free package

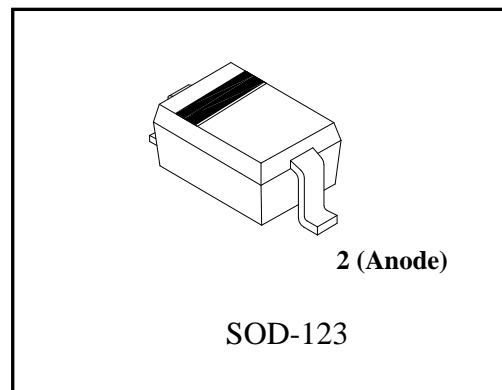
Mechanical data

- Case : Molded plastic, JEDEC SOD-123.
- Epoxy : UL94-V0 rated flame retardant
- Terminals : Plated terminals, solderable per MIL-STD-202 method 208
- Polarity : Indicated by cathode band
- Mounting position : Any
- Weight : approx. 0.009 gram

Symbol

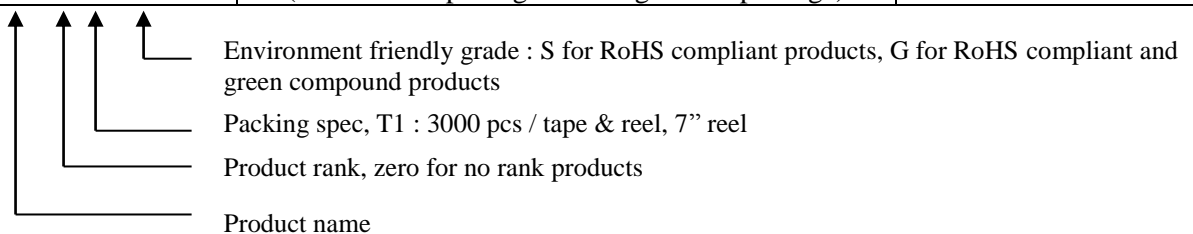


Outline



Ordering Information

Device	Package	Shipping
CSOD0540-0-T1-G	SOD-123 (Pb-free lead plating and halogen-free package)	3000 pcs / tape & reel





Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

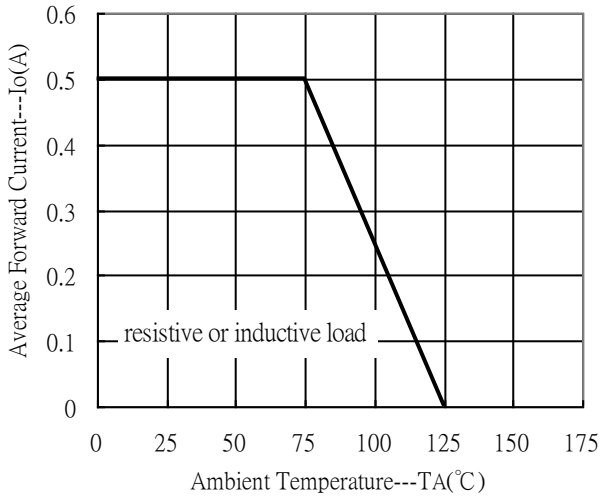
Parameters	Conditions	Symbol	Min	Typ	Max	Units
Repetitive peak reverse voltage		V_{RRM}			40	V
RMS voltage		V_{RMS}			28	V
Continuous reverse voltage		V_R			40	V
Forward rectified current		I_O			0.5	A
	Single phase half wave, 60Hz @ $T_J=25^{\circ}\text{C}$	$I_{F(AV)}$			1	
Forward surge current	8.3ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}			15	A
Thermal resistance	Junction to Ambient	$R_{\theta JA}$		250		$^{\circ}\text{C/W}$
Storage temperature range		T_{stg}	-65		175	$^{\circ}\text{C}$
Operating junction temperature range		T_j	-55		125	$^{\circ}\text{C}$

Characteristics ($T_A=25^{\circ}\text{C}$)

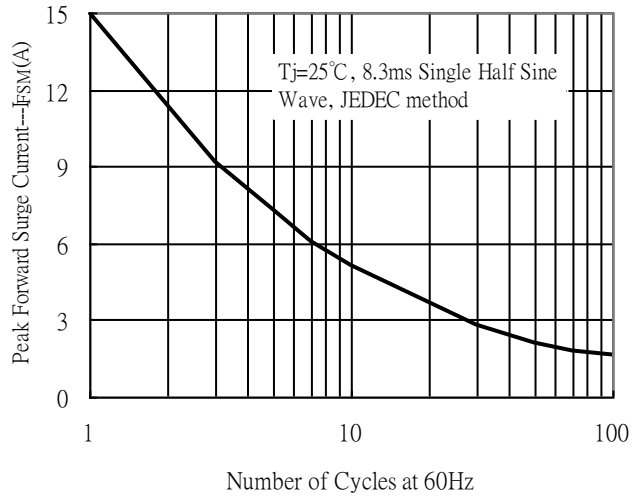
Characteristic	Symbol	Condition	Min.	Typ	Max.	Unit
	V_R	$I_R=600\mu\text{A}$	40	-	-	V
Forward Voltage	$V_F 1$	$I_F=100\text{mA}$	-	-	370	mV
	$V_F 2$	$I_F=500\text{mA}$	-	-	500	
Reverse Leakage Current	$I_R 1$	$V_R=20\text{V}$	-	-	100	μA
	$I_R 2$	$V_R=40\text{V}$	-	-	500	μA
	$I_R 3$	$V_R=40\text{V}, T_A=75^{\circ}\text{C}$	-	-	10	mA
Junction Capacitance	C_J	$V_R=4\text{V}, f=1\text{MHz}$	-	18.3	-	pF

Typical Characteristics

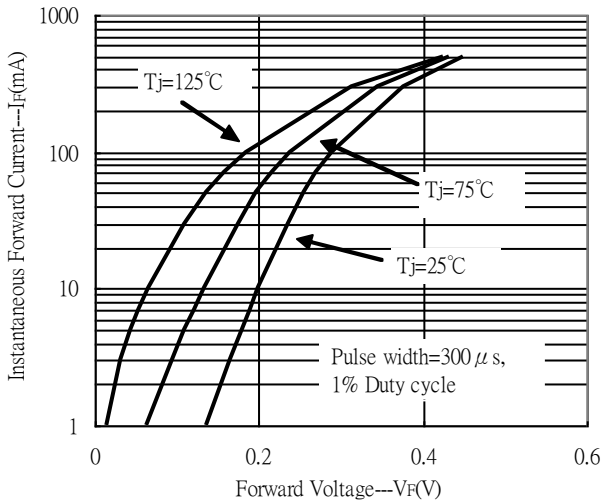
Forward Current Derating Curve



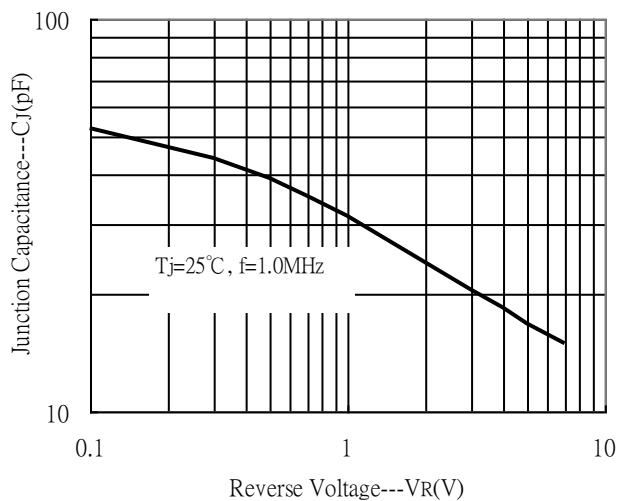
Maximum Non-Repetitive Forward Surge Current



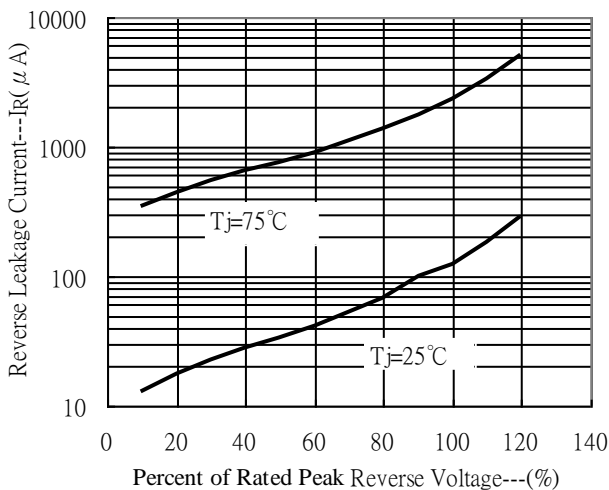
Forward Current vs Forward Voltage



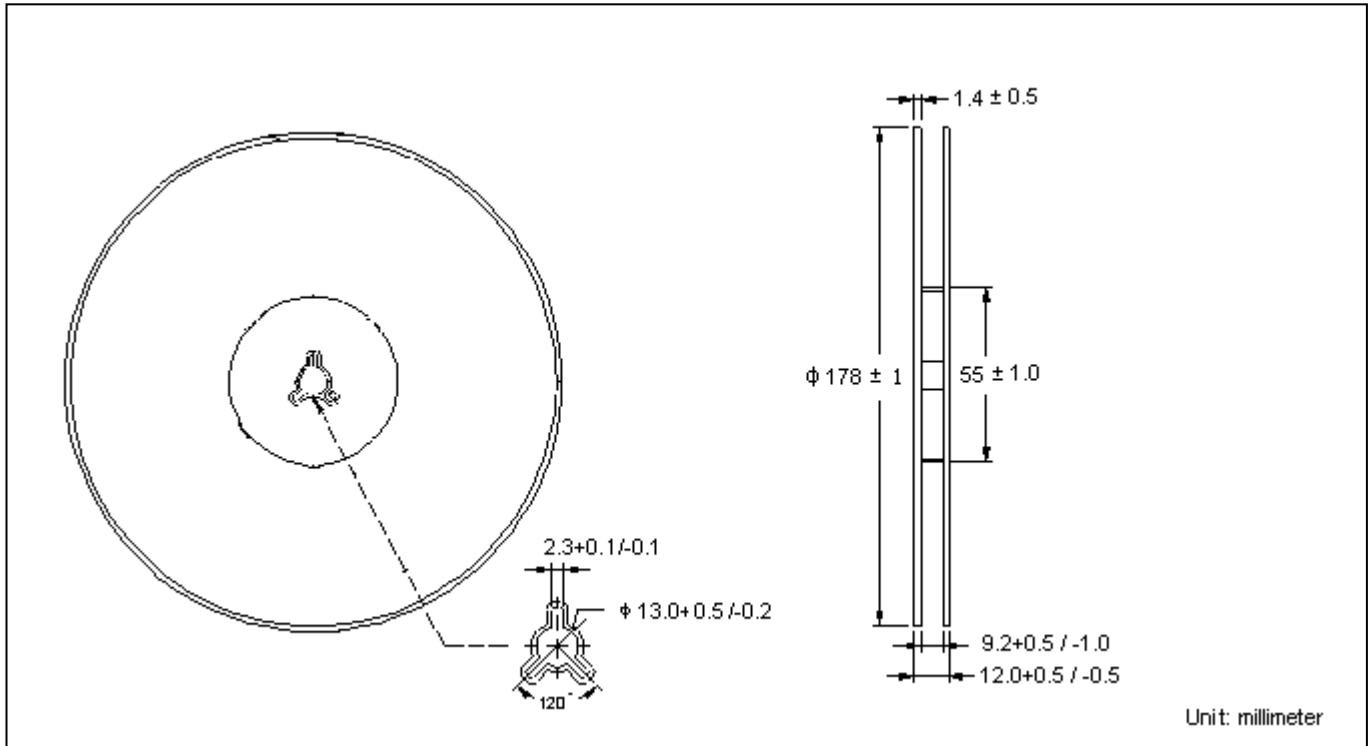
Junction Capacitance vs Reverse Voltage



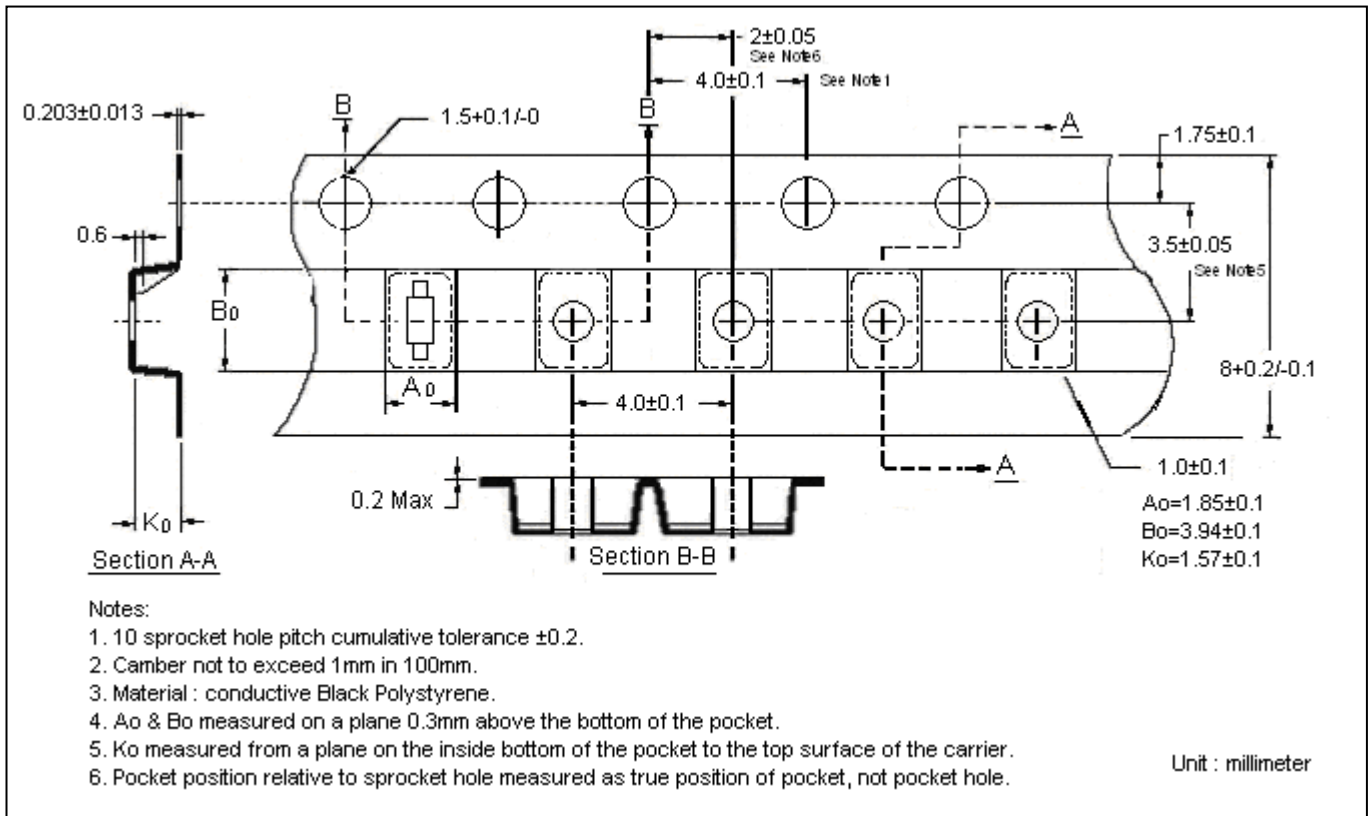
Reverse Leakage Current vs Reverse Voltage



Reel Dimension



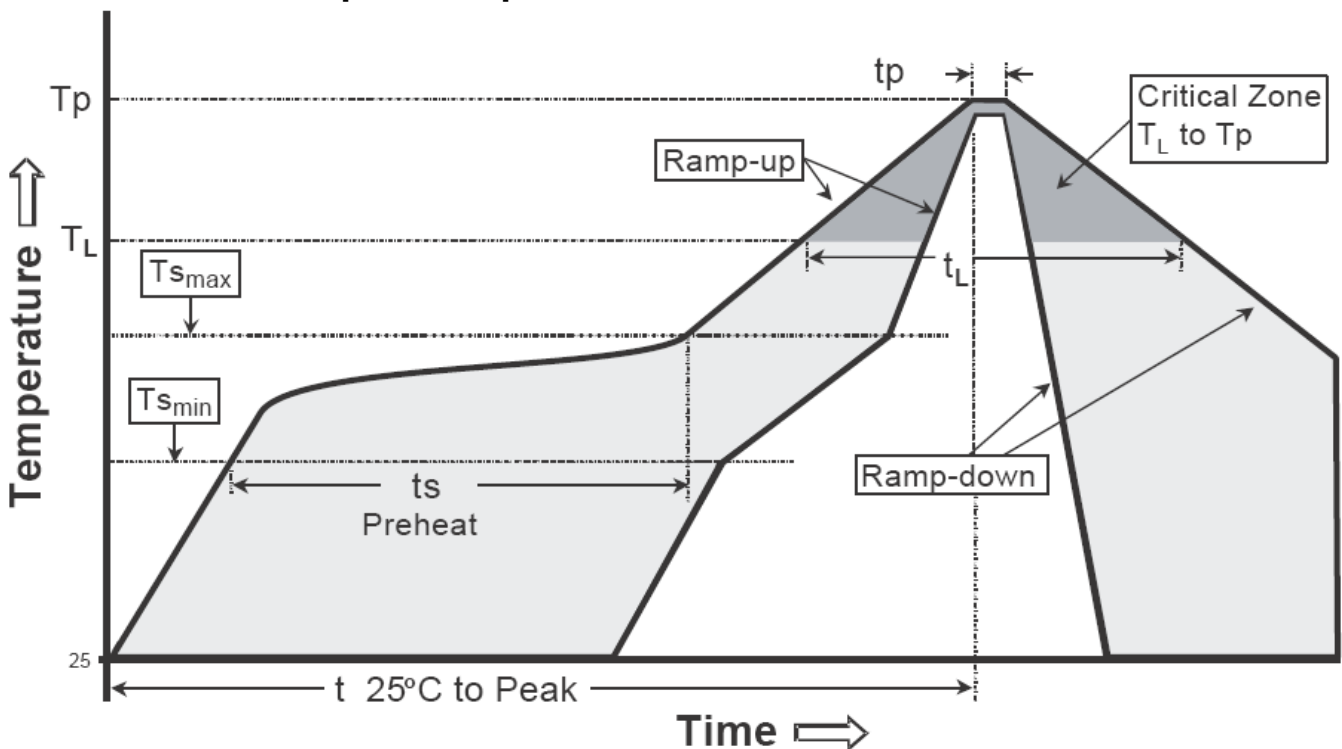
Carrier Tape Dimension



Recommended wave soldering condition

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

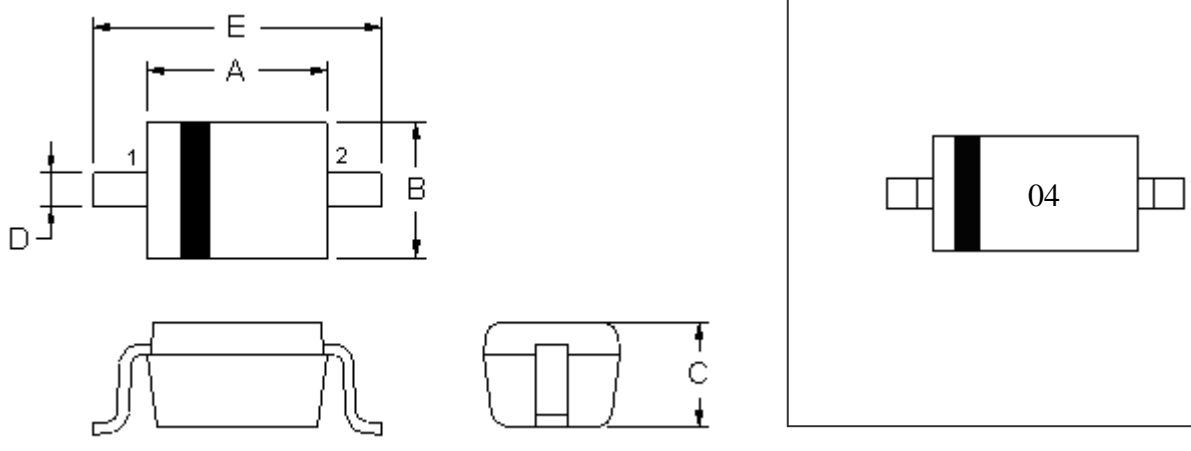
Recommended temperature profile for IR reflow



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



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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