

## 0.5A surface mount Schottky diode

# CSOD0540SH

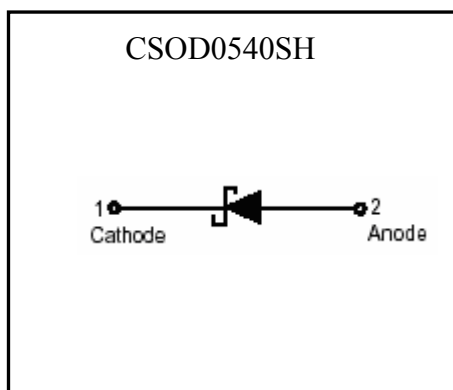
### Features

- 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

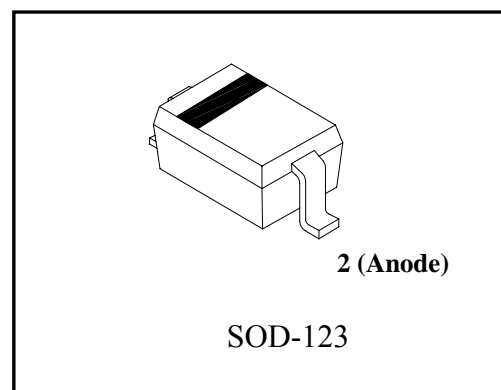
### Mechanical data

- 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. 0.04 gram

### Symbol



### Outline





**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		$^{\circ}\text{C}/\text{W}$
Storage temperature range		$T_{stg}$	-65		175	$^{\circ}\text{C}$
Operating junction temperature range		$T_j$	-55		125	$^{\circ}\text{C}$

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

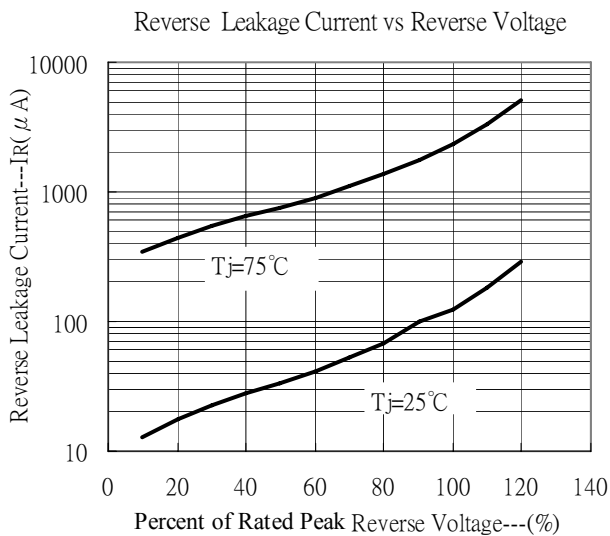
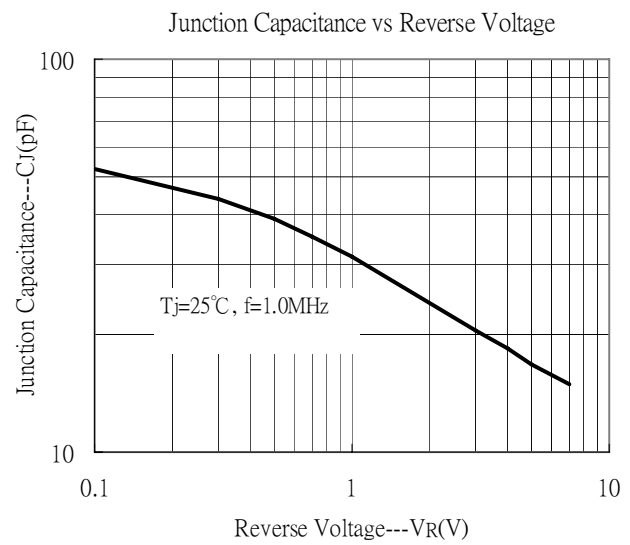
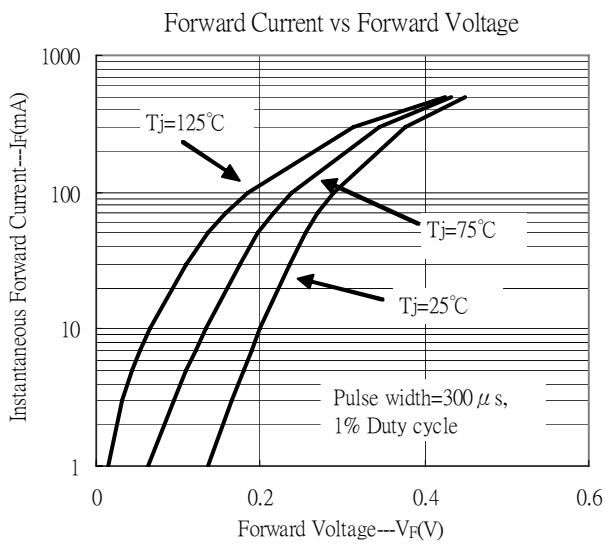
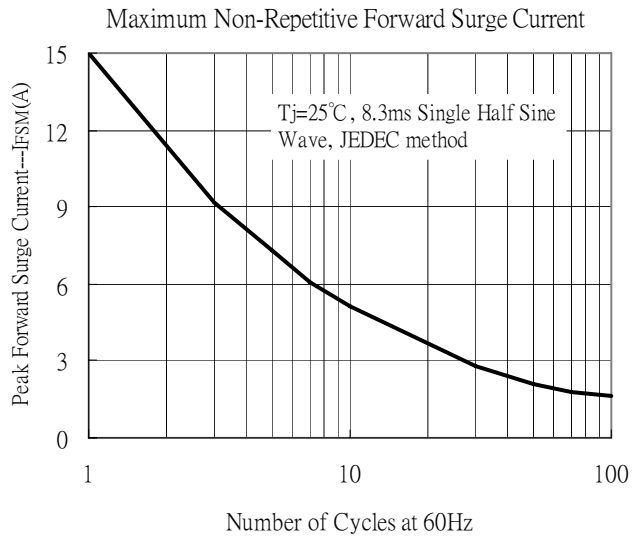
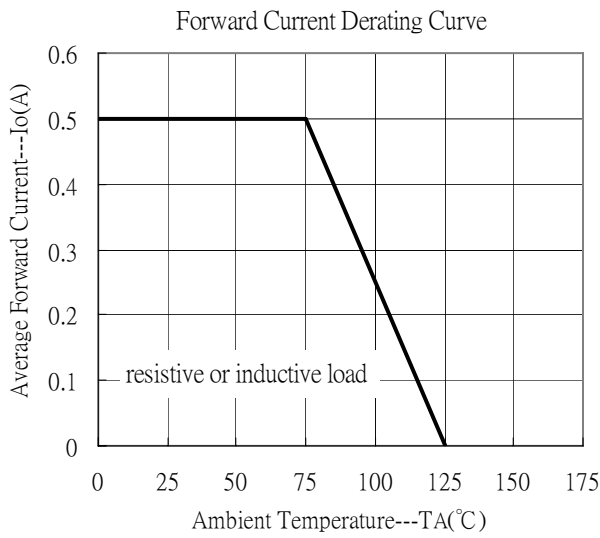
Characteristic	Symbol	Condition	Min.	Typ	Max.	Unit
	$V_R$	$I_R=600\mu\text{A}$	40	-	-	V
Forward Voltage	$V_F 1$	$I_F=100\text{mA}$	-	-	370	mV
	$V_F 2$	$I_F=500\text{mA}$	-	-	500	
Reverse Leakage Current	$I_R 1$	$V_R=20\text{V}$	-	-	100	$\mu\text{A}$
	$I_R 2$	$V_R=40\text{V}$	-	-	500	$\mu\text{A}$
	$I_R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

**Ordering Information**

Device	Package	Shipping
CSOD0540SH	SOD-123 (Pb-free package)	3000 pcs / Tape & Reel



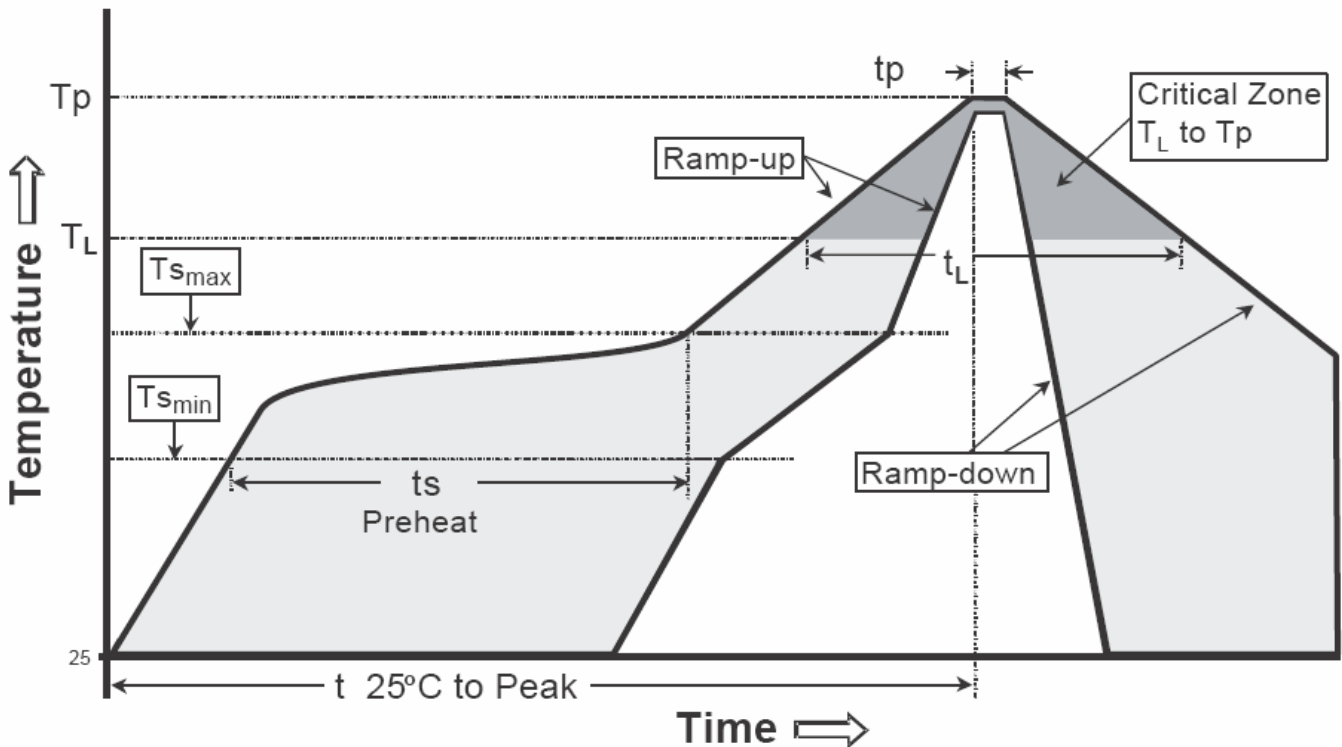
### Characteristic Curves



**Recommended wave soldering condition**

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

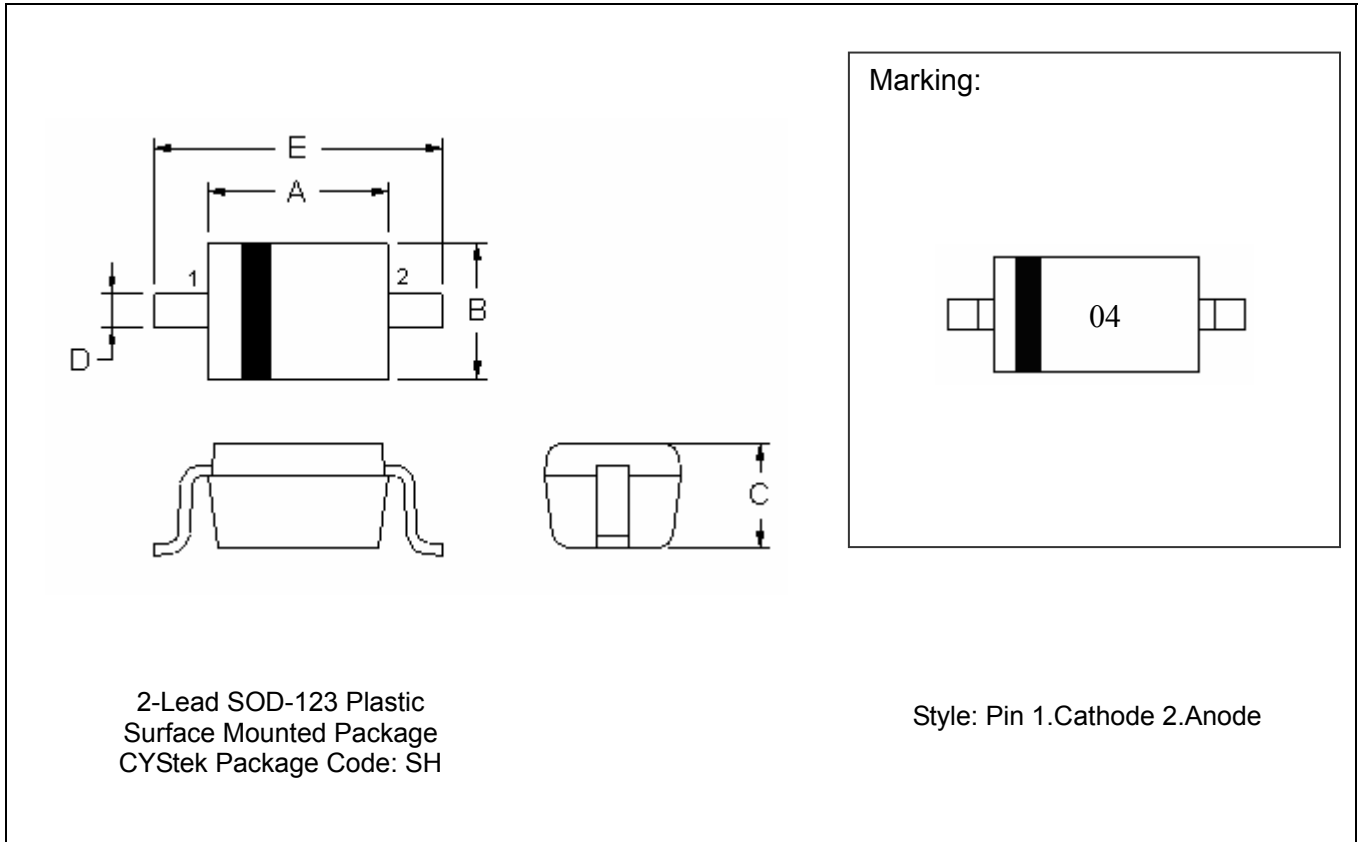
**Recommended temperature profile for IR reflow**



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T <sub>smax</sub> to T <sub>p</sub> )	3°C/second max.	3°C/second max.
Preheat		
-Temperature Min(T <sub>s min</sub> )	100°C	150°C
-Temperature Max(T <sub>s max</sub> )	150°C	200°C
-Time(t <sub>s min</sub> to t <sub>s max</sub> )	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (T <sub>L</sub> )	183°C	217°C
- Time (t <sub>L</sub> )	60-150 seconds	60-150 seconds
Peak Temperature(T <sub>p</sub> )	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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