

0.5A surface mount Schottky diode

RB0540C2

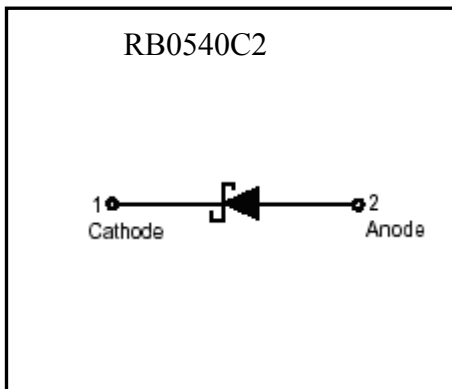
Features

- 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

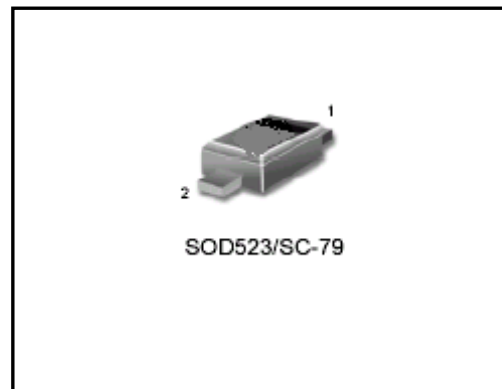
Mechanical data

- Case : Molded plastic, SC-79/SOD523.
- Epoxy : UL94-V0 rated flame retardant
- Terminals : Plated terminals, solderable per MIL-STD-750 method 2026.
- Polarity : Indicated by cathode band.
- Mounting position : Any.

Symbol

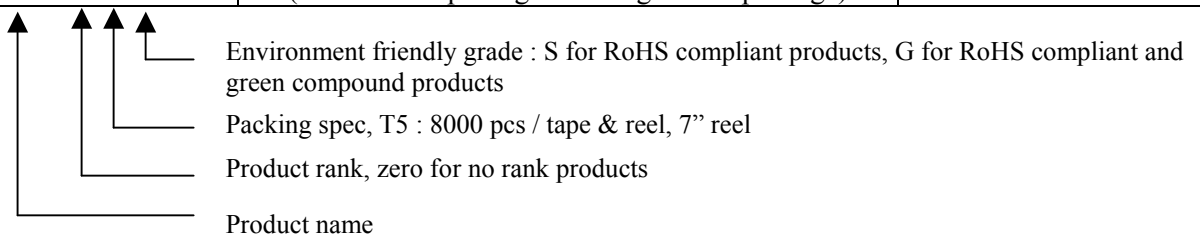


Outline



Ordering Information

Device	Package	Shipping
RB0540C2-0-T5-G	SOD-523 (Pb-free lead plating and halogen-free package)	8000 pcs / tape & reel





Absolute Maximum Ratings (TA=25°C, unless otherwise noted)

Parameters	Conditions	Symbol	Min	Typ	Max	Units
Repetitive peak reverse voltage		VRRM			40	V
RMS voltage		VRMS			28	V
Continuous reverse voltage		VR			40	V
Forward rectified current		IO			0.5	A
	Single phase half wave, 60Hz @Tj=25°C	IF(AV)			1	
Forward surge current	8.3ms single half sine-wave superimposed on rated load (JEDEC method)	IFSM			15	A
Total Device Dissipation	TA=25°C (Note)	PD			200	mW
Thermal resistance	Junction to Ambient (Note)	RθJA			625	°C/W
Storage temperature range		Tstg	-65		175	°C
Operating junction temperature range		Tj	-55		125	°C

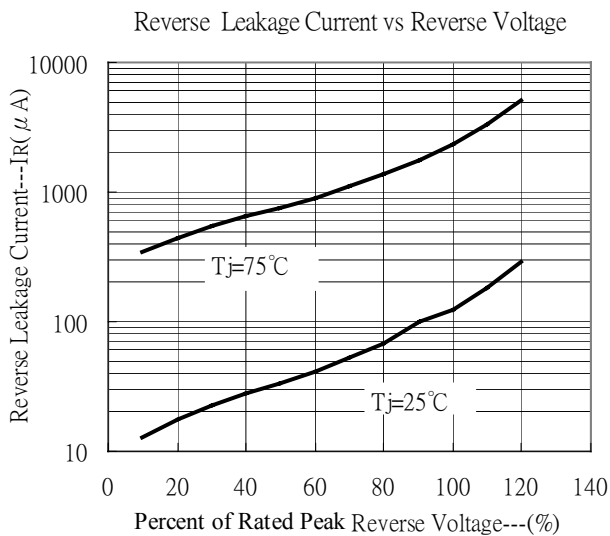
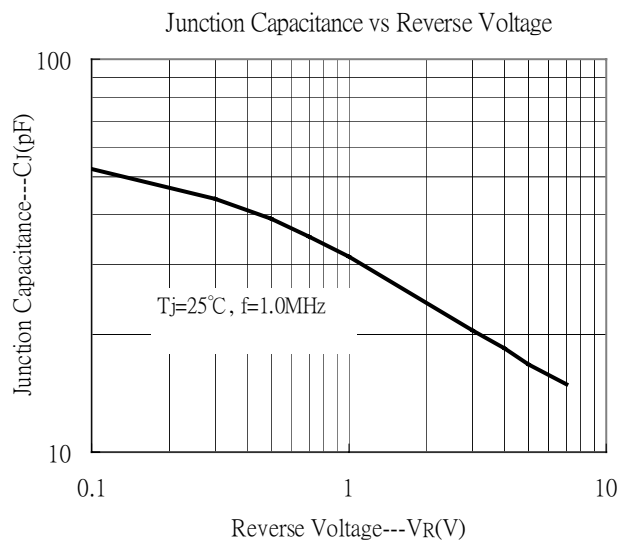
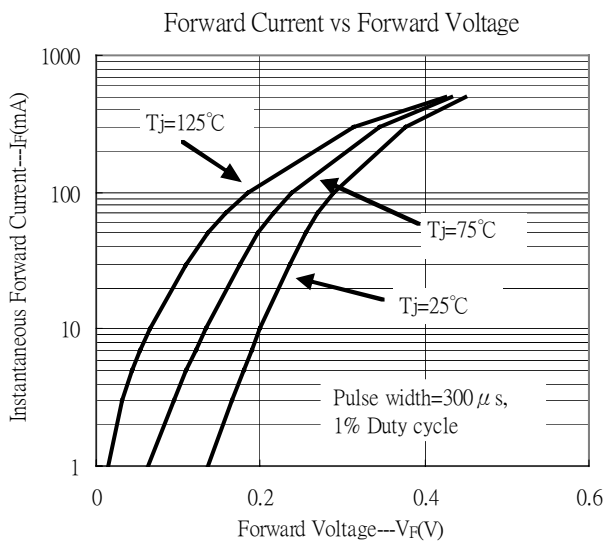
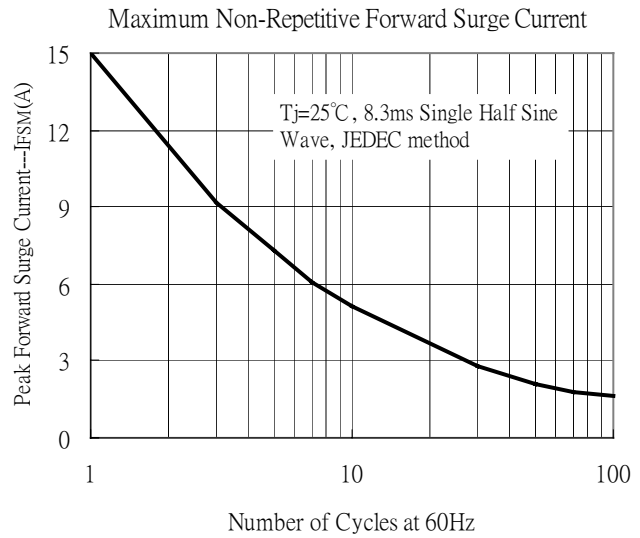
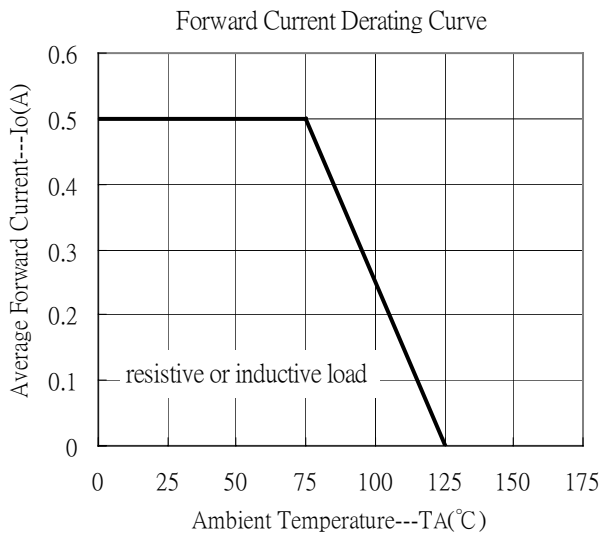
Note : When device mounted on FR-5 PCB with minimum pad.

Characteristics (TA=25°C)

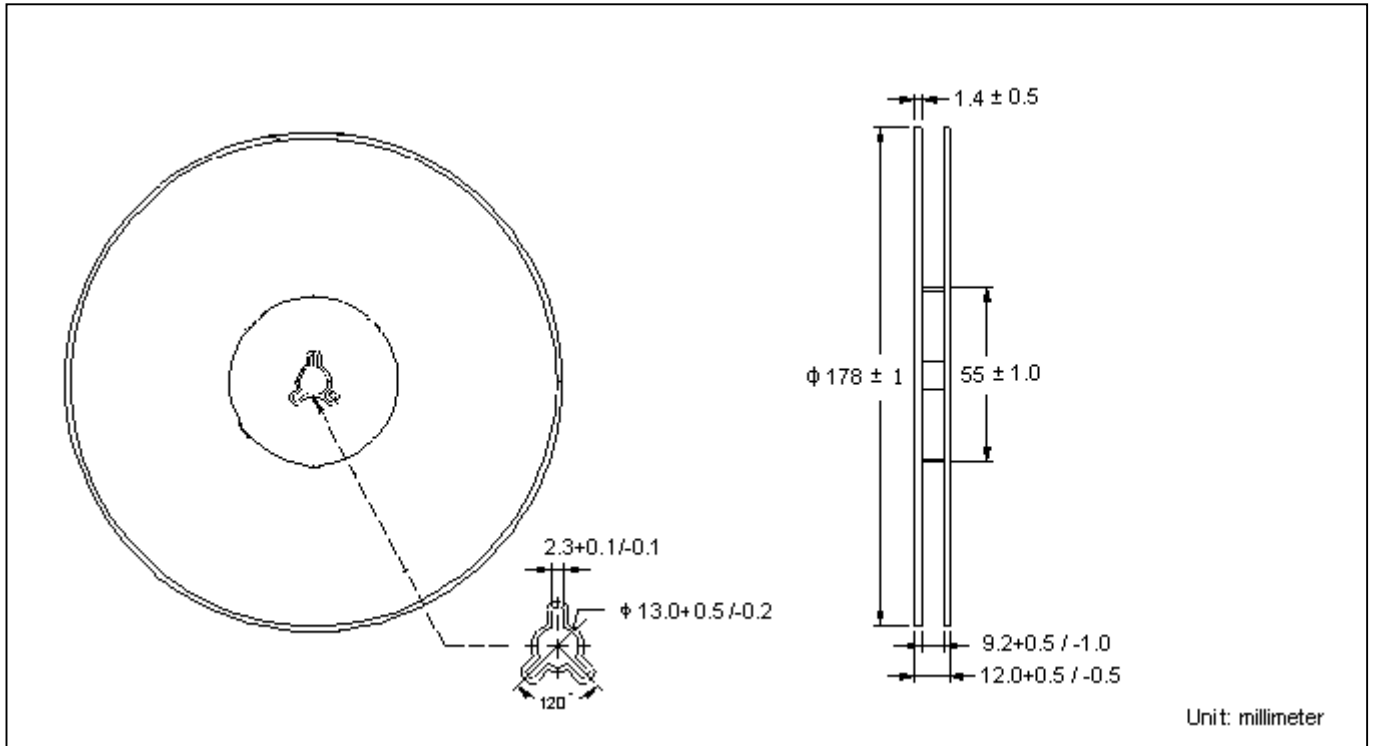
Characteristic	Symbol	Condition	Min.	Typ	Max.	Unit
	VR	IR=600μA	40	-	-	V
Forward Voltage	VF 1	IF=100mA	-	-	370	mV
	VF 2	IF=500mA	-	-	500	
Reverse Leakage Current	IR 1	VR=20V	-	-	100	μA
	IR 2	VR=40V	-	-	500	μA
	IR 3	VR=40V, TA=75°C	-	-	10	mA
Capacitance Between Terminals	CT	VR=4V, f=1MHz	-	18.3	-	pF



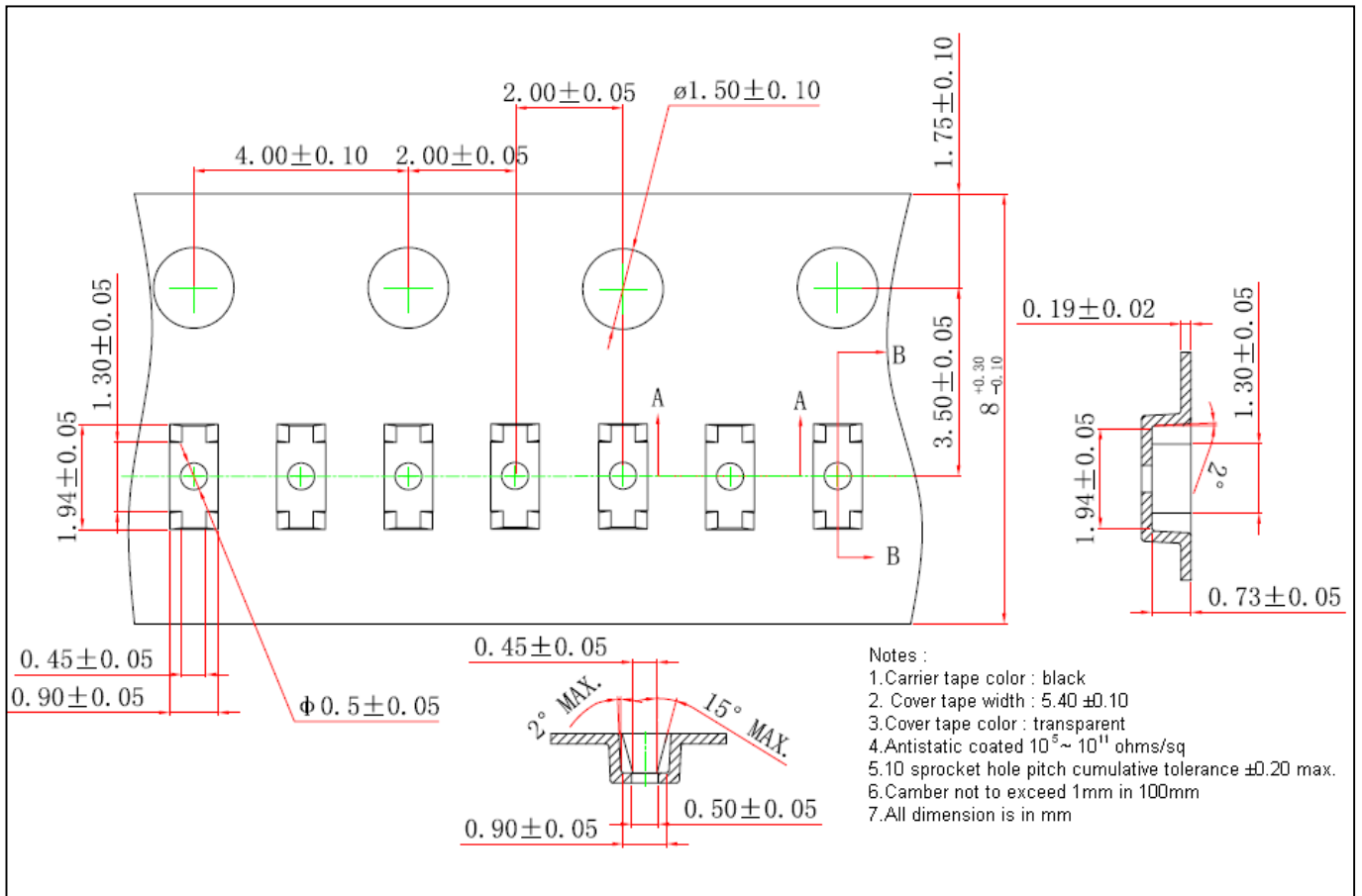
Characteristic Curves



Reel Dimension



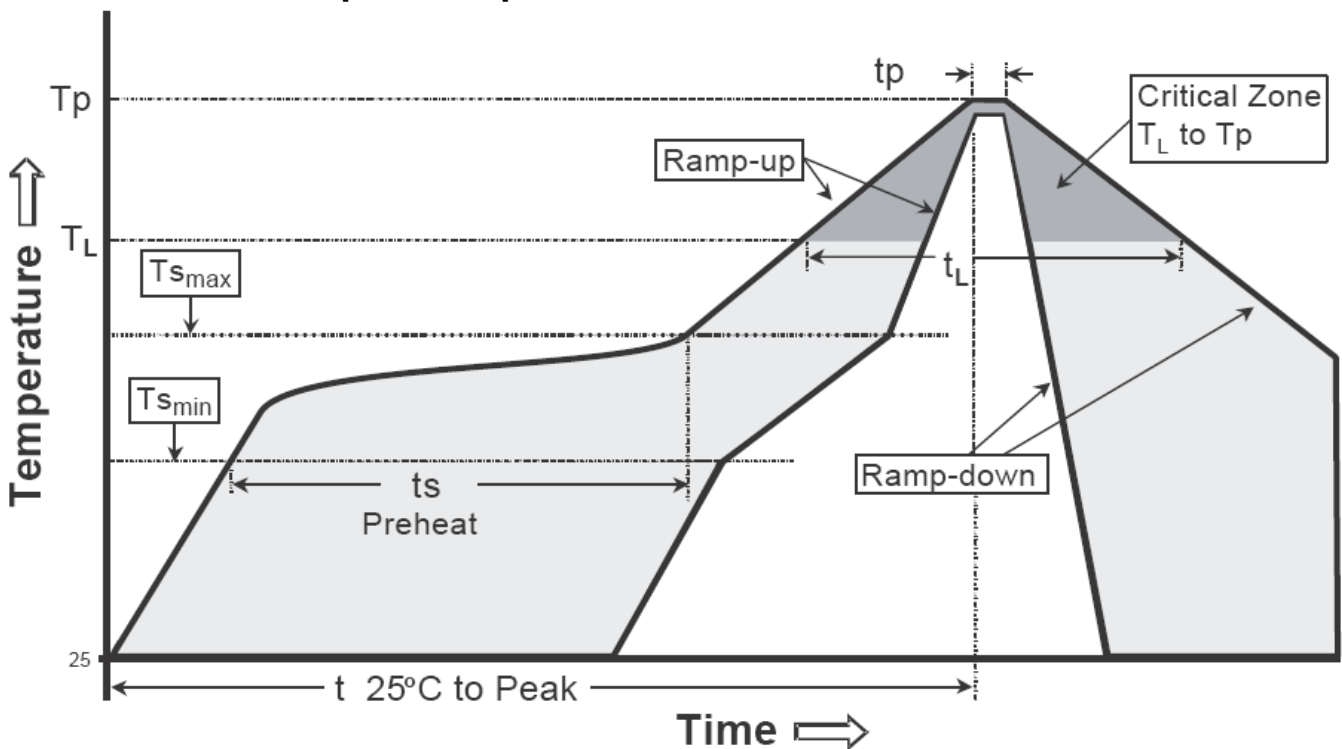
Carrier Tape Dimension



Recommended wave soldering condition

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

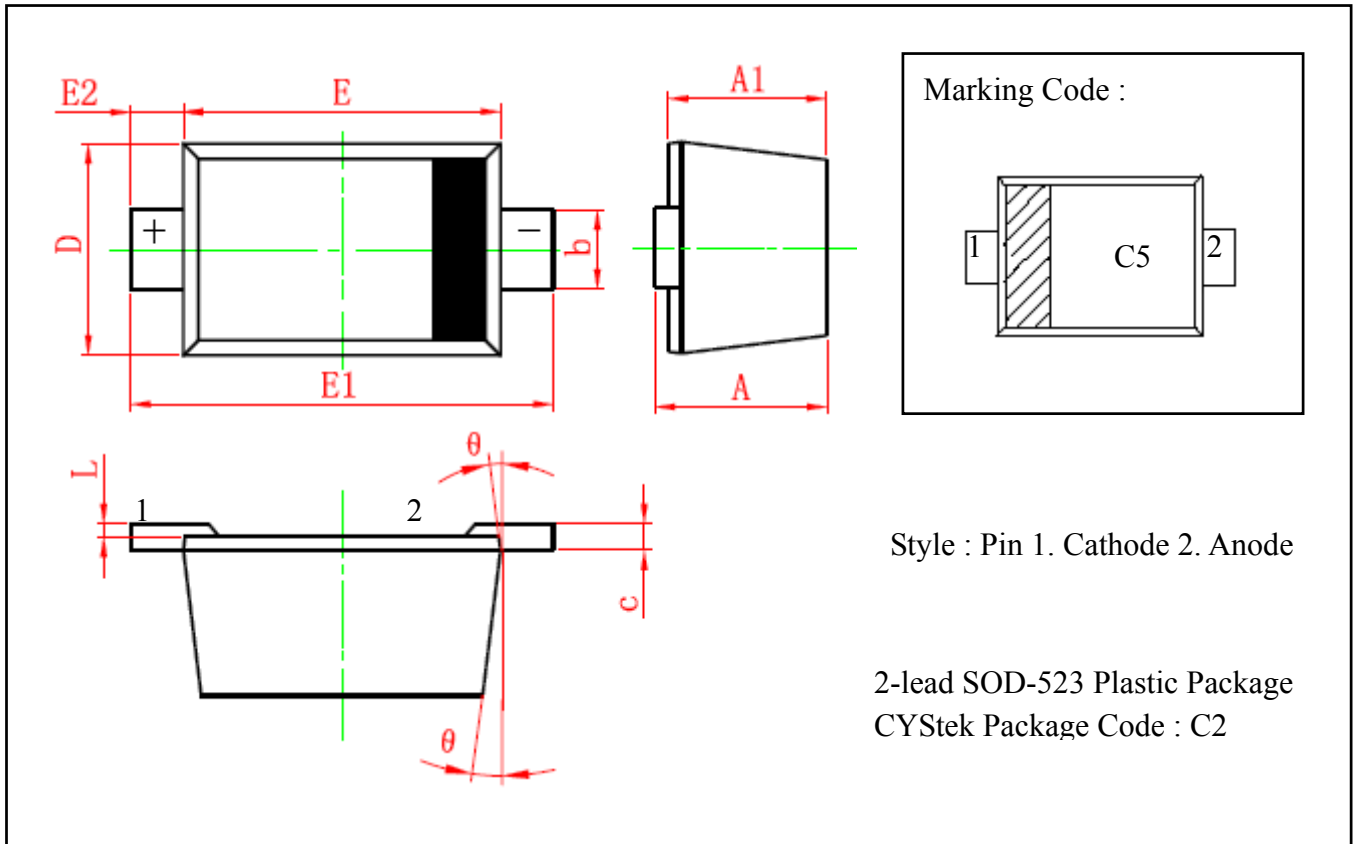
Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax 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 (TL)	183°C	217°C
- Time (tL)	60-150 seconds	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-523 Dimension



*: Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.510	0.770	0.020	0.031	E	1.100	1.300	0.043	0.051
A1	0.500	0.700	0.020	0.028	E1	1.500	1.700	0.059	0.067
b	0.250	0.350	0.010	0.014	E2	0.200	REF	0.008	REF
c	0.080	0.150	0.003	0.006	L	0.010	0.070	0.001	0.003
D	0.750	0.850	0.030	0.033	θ	7° REF		7° REF	

Notes: 1. Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
 2. 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.

Important Notice:

- All rights are reserved. Reproduction in whole or in part is prohibited without the prior written approval of CYStek.
- CYStek reserves the right to make changes to its products without notice.
- CYStek **semiconductor products are not warranted to be suitable for use in Life-Support Applications, or systems.**
- CYStek assumes no liability for any consequence of customer product design, infringement of patents, or application assistance.