

0.5A surface mount Schottky diode

RB0540C2

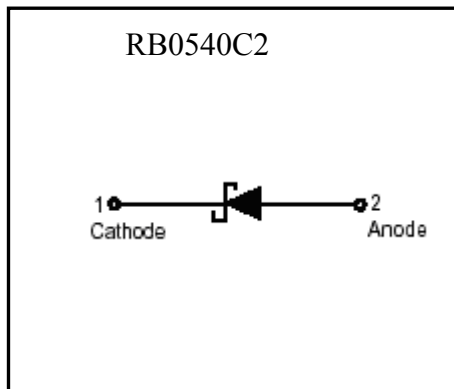
Features

- 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

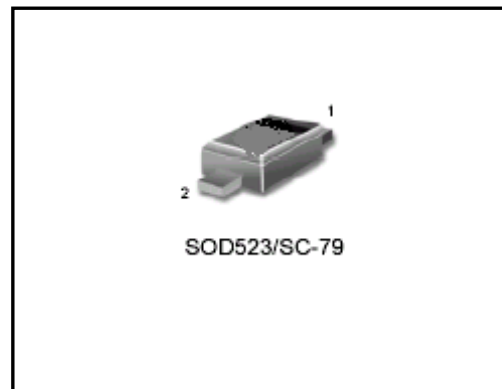
Mechanical data

- 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

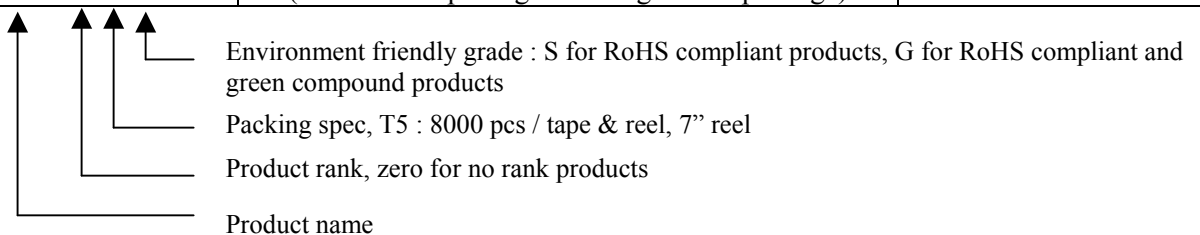


Outline



Ordering Information

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



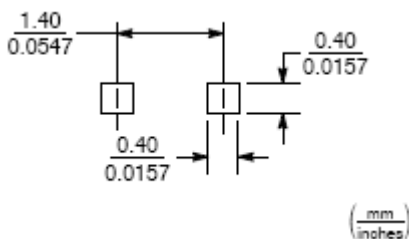
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

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
Total Device Dissipation	$T_A=25^{\circ}\text{C}$ (Note)	P_D			200	mW
Thermal resistance	Junction to Ambient (Note)	$R_{\theta JA}$			625	$^{\circ}\text{C}/\text{W}$
Storage temperature range		T_{stg}	-65		175	$^{\circ}\text{C}$
Operating junction temperature range		T_J	-55		125	$^{\circ}\text{C}$

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

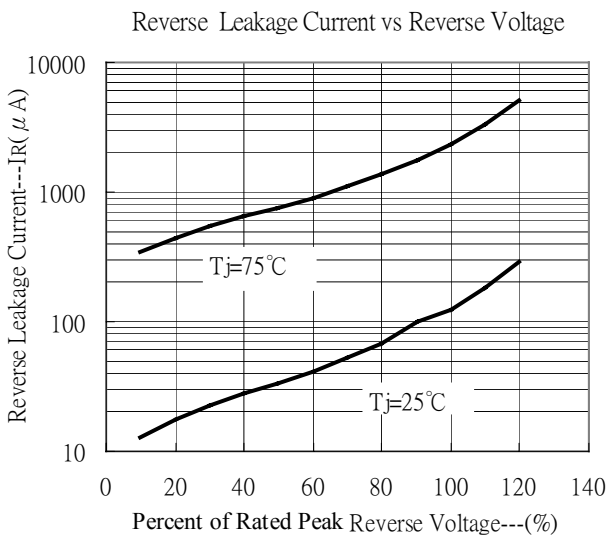
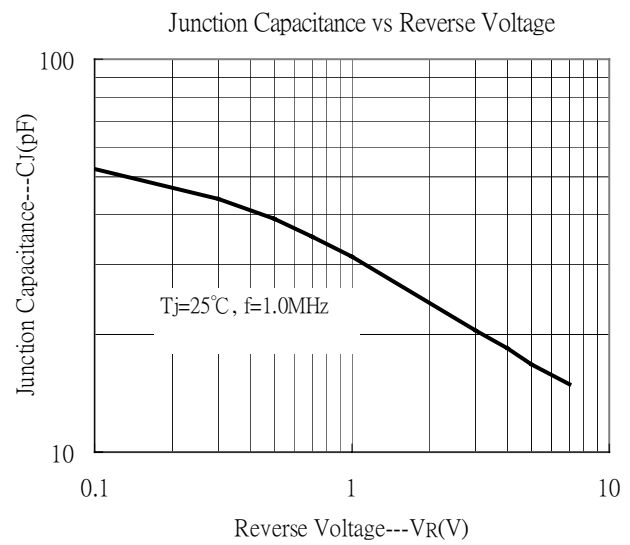
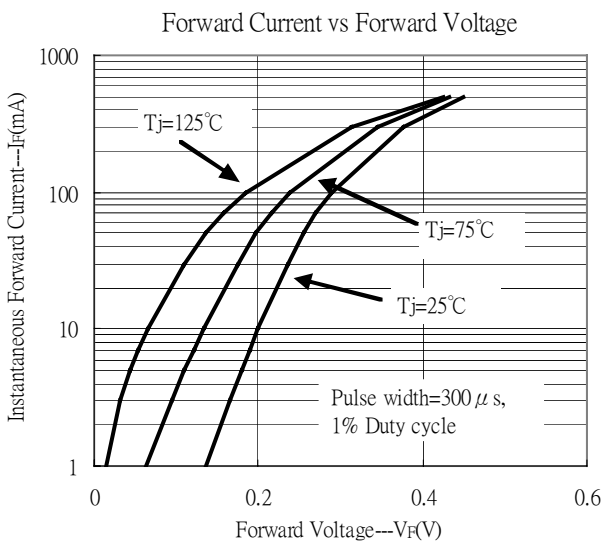
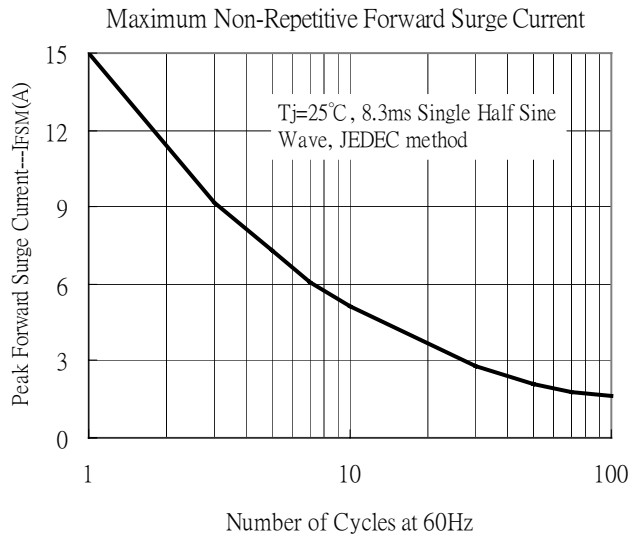
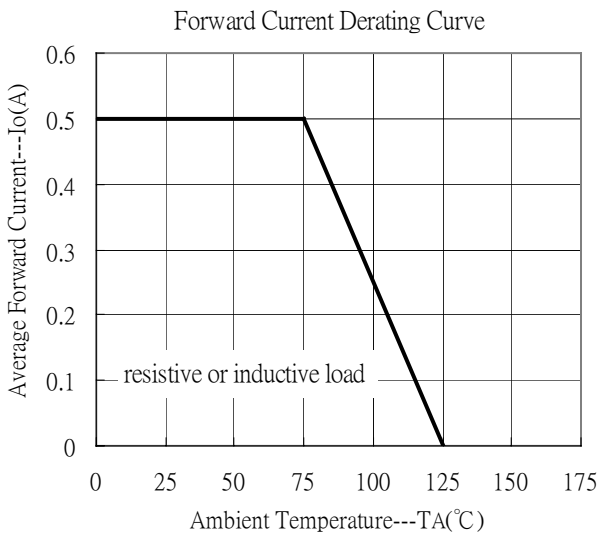
Characteristics ($T_A=25^{\circ}\text{C}$)

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
Capacitance Between Terminals	C_T	$V_R=4\text{V}, f=1\text{MHz}$	-	18.3	-	pF

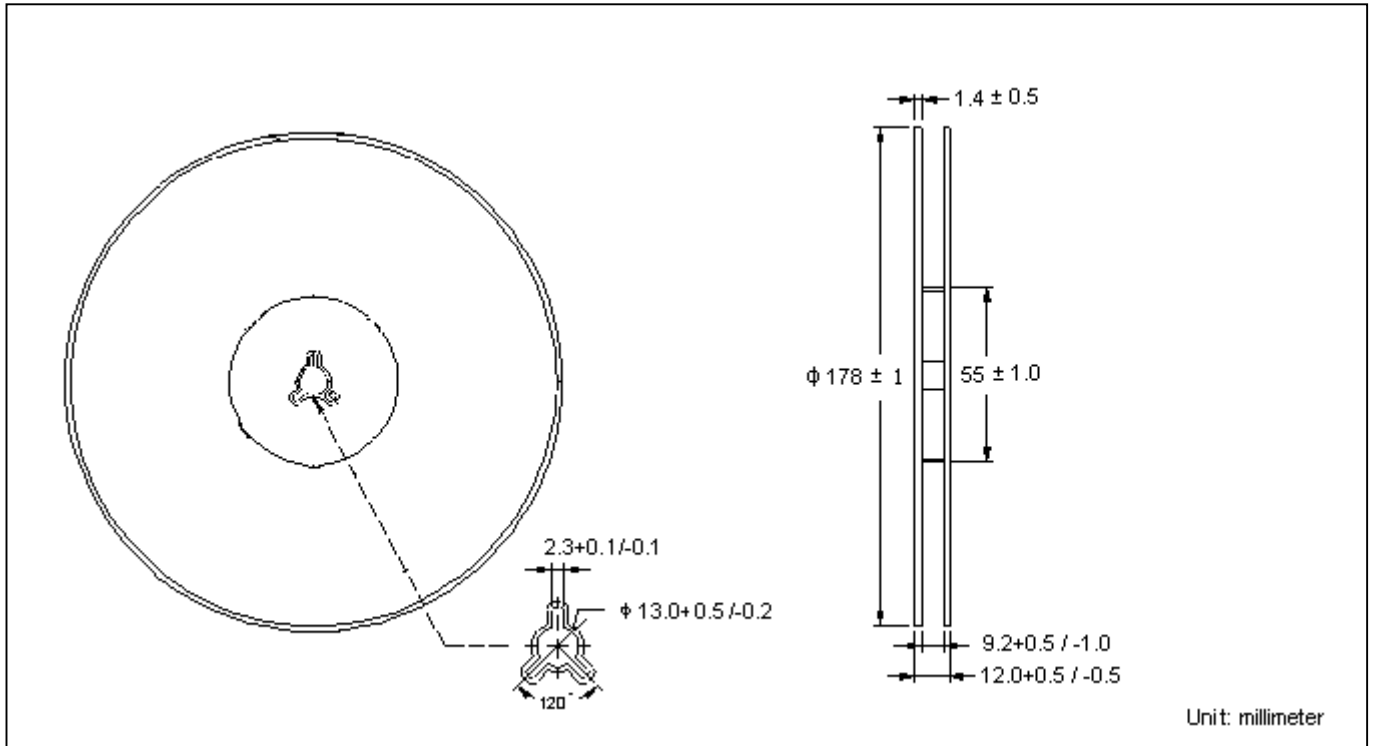
Recommended Footprint




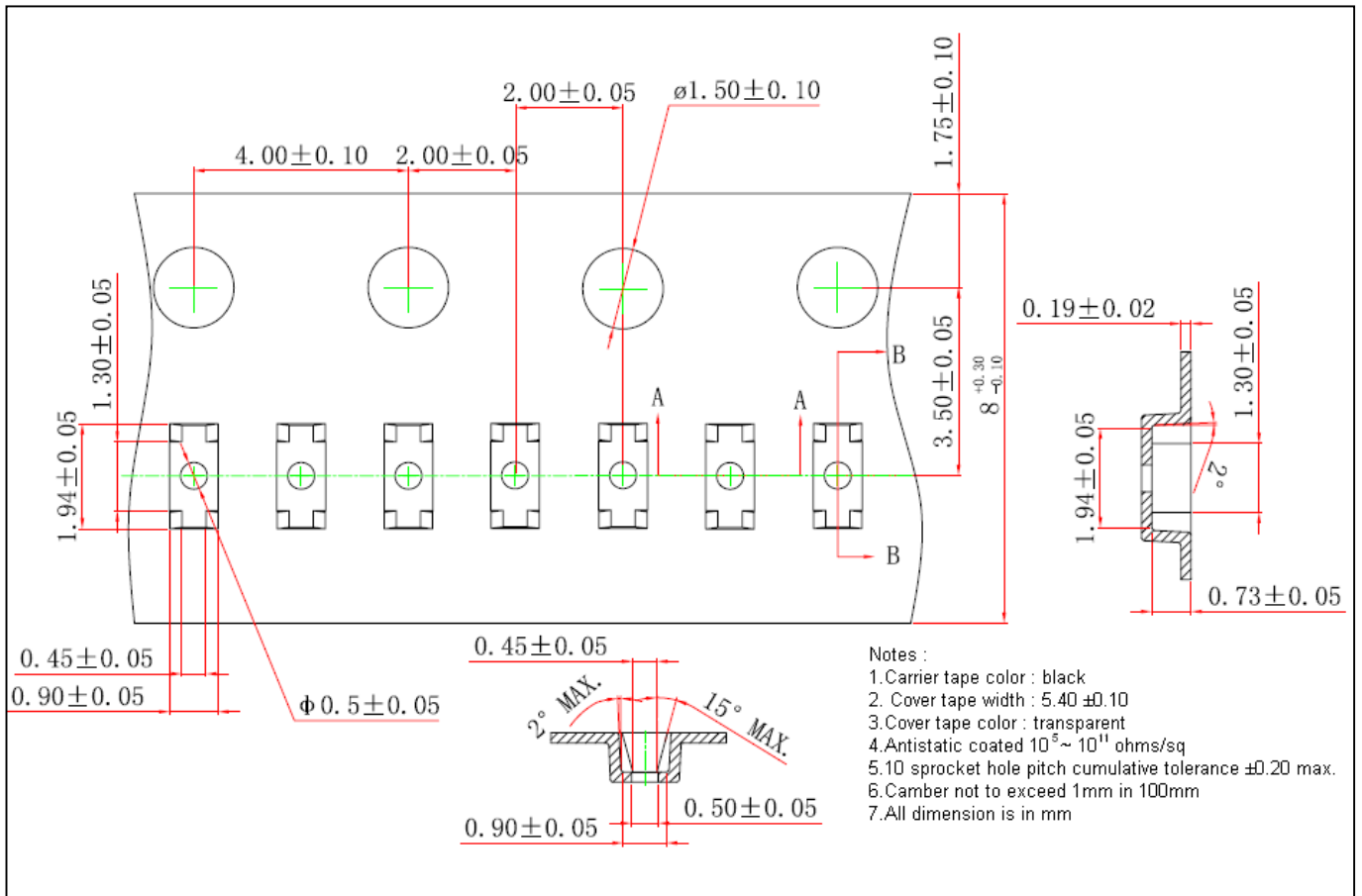
Typical Characteristics



Reel Dimension



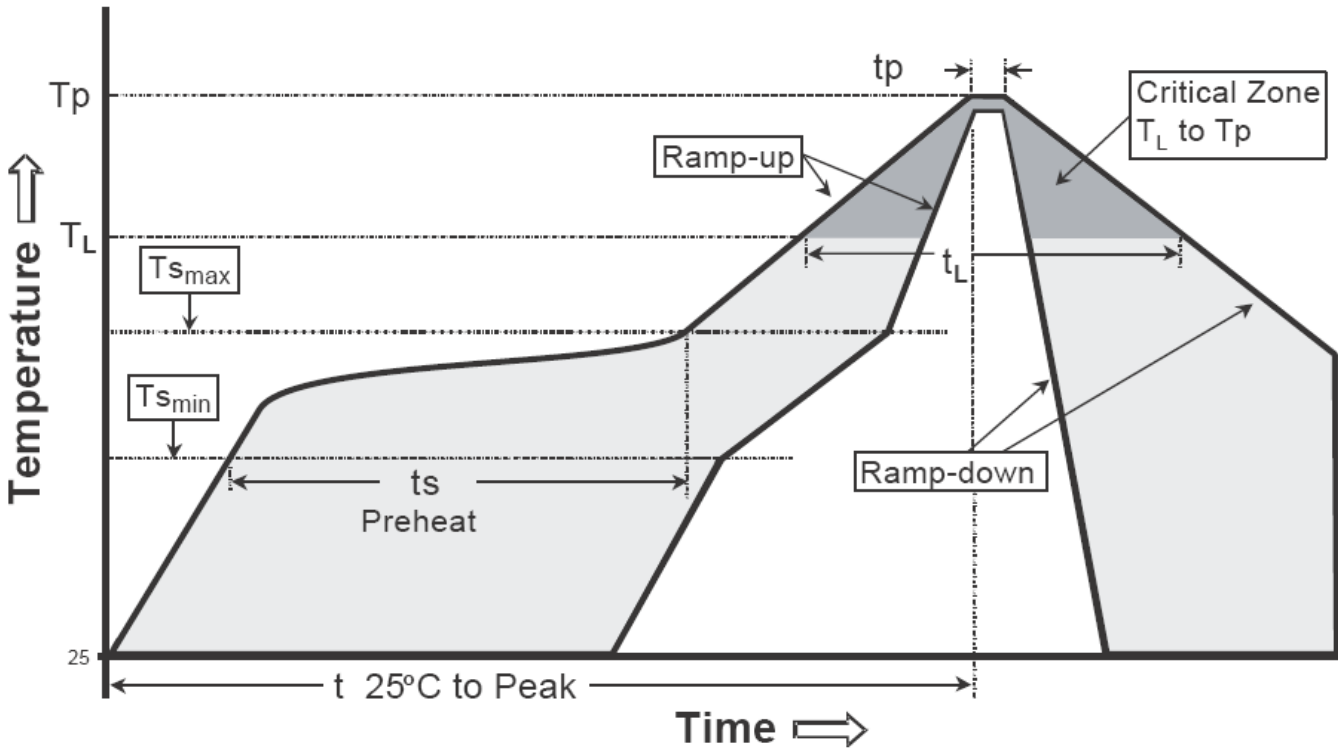
Carrier Tape Dimension



Recommended wave soldering condition

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

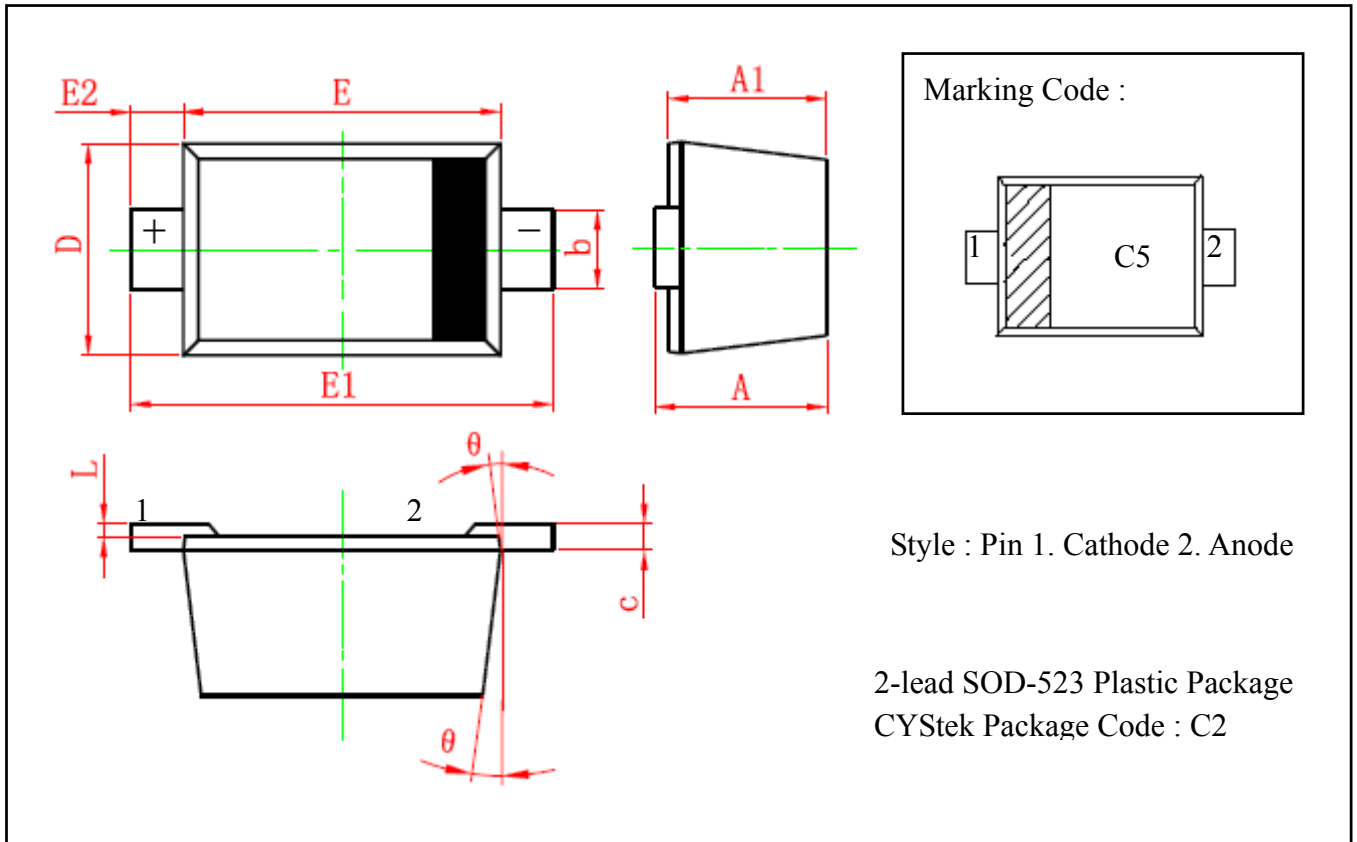
Recommended temperature profile for IR reflow



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 :1. All temperatures refer to topside of the package, measured on the package body surface.
 2.For devices mounted on FR-4 PCB of 1.6mm or equivalent grade PCB. If other grade PCB is used, care should be taken to match the coefficients of thermal expansion between components and PCB. If they are not matched well, the solder joints may crack or the bodies of the parts may crack or shatter as the assembly cools.

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.

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