0.2A surface mount Schottky diode

BAT54C2

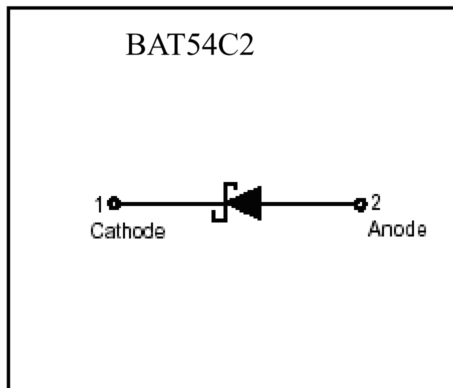
Features

- 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

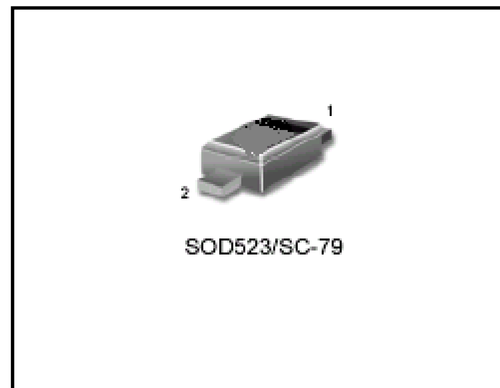
Mechanical data

- 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

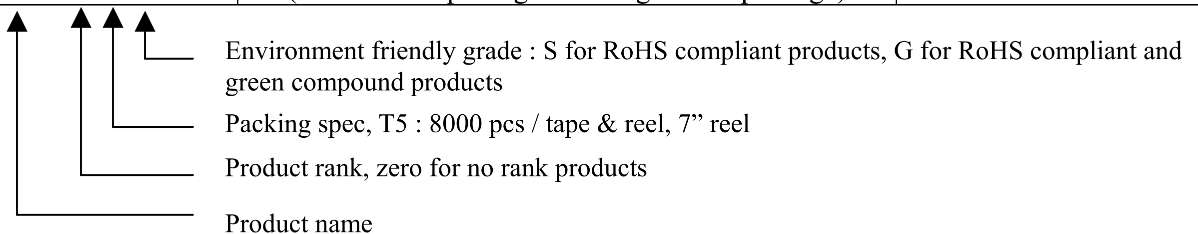


Outline



Ordering Information

Device	Package	Shipping
BAT54C2-0-T5-G	SOD-523 (Pb-free lead plating and halogen-free package)	8000 pcs / tape & reel



Absolute Maximum Ratings (T_A=25℃, unless otherwise noted)

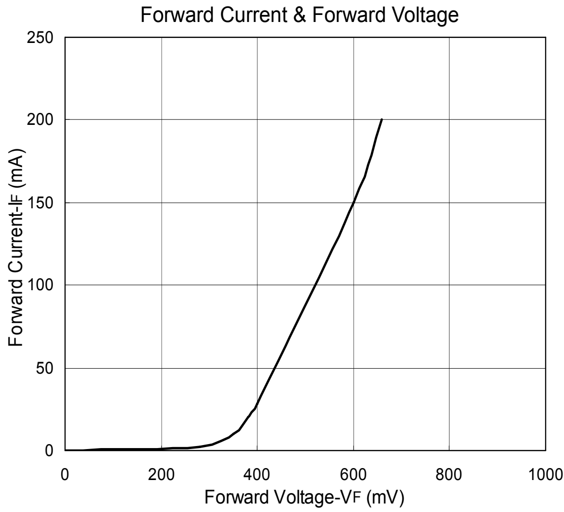
Parameters	Conditions	Symbol	Value	Units
Repetitive peak reverse voltage		V_{RRM}	30	V
RMS voltage		V_{RMS}	21	
Continuous reverse voltage		V_R	30	
Forward rectified current		I_F	0.2	A
Repetitive Peak Forward Current		I_{FM}	0.3	
Non-repetitive Peak Forward Current		I_{FSM}	0.6	
Total Device Dissipation	T_A=25°C (Note)	P_D	200	mW
Thermal resistance	Junction to Ambient (Note)	$R_{\theta JA}$	625	°C/W
Storage temperature range		Tstg	-65 ~ +175	°C
Operating junction temperature range		Tj	-65 ~ +150	°C

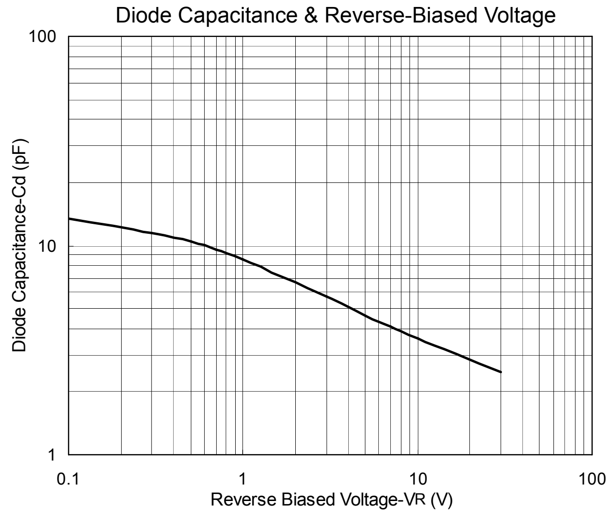
Note : When device mounted on FR-5 PCB with minimum pad.

Characteristics (T_A=25°C)

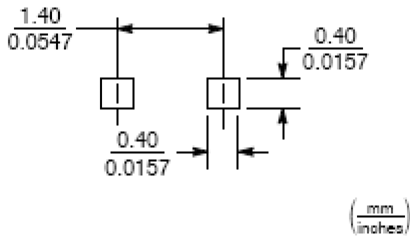
Characteristic	Symbol	Condition	Min.	Typ	Max.	Unit
Reverse Breakdown Voltage	V_{BR}	I_R=100μA	30	-	-	V
Forward Voltage	V_F 1	I_F=0.1mA	-	-	240	mV
	V_F 2	I_F=1mA	-	-	320	
	V_F 3	I_F=10mA	-	-	400	
	V_F 4	I_F=30mA	-	-	500	
	V_F 5	I_F=100mA	-	-	800	
Reverse Leakage Current (Note 2)	I_R	V_R=30V	-	-	2	μA
Diode Capacitance	C_D	V_R=1V, f=1MHz	-	-	10	pF
Reverse Recovery Time	trr	I_F=I_R=10mA R_L=100Ω measured at I_R=1mA	-	-	5	ns

Typical Characteristics

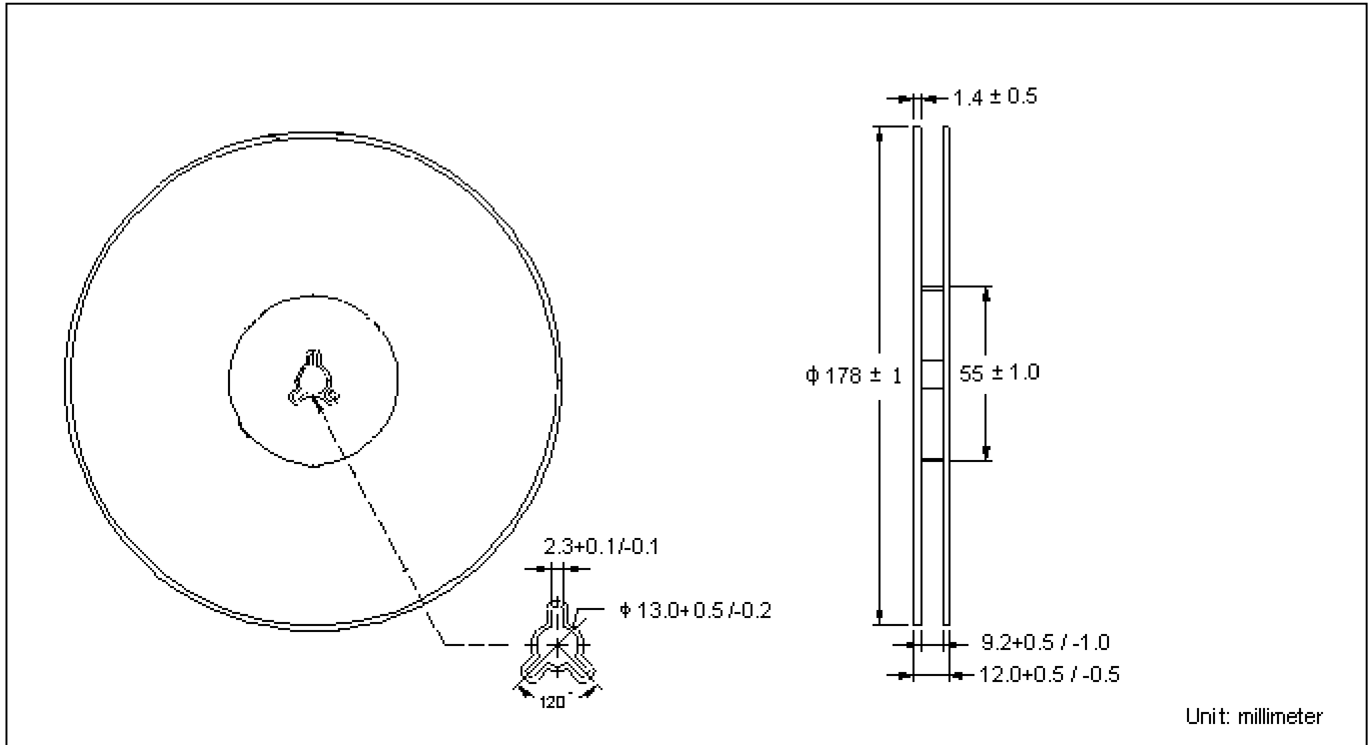




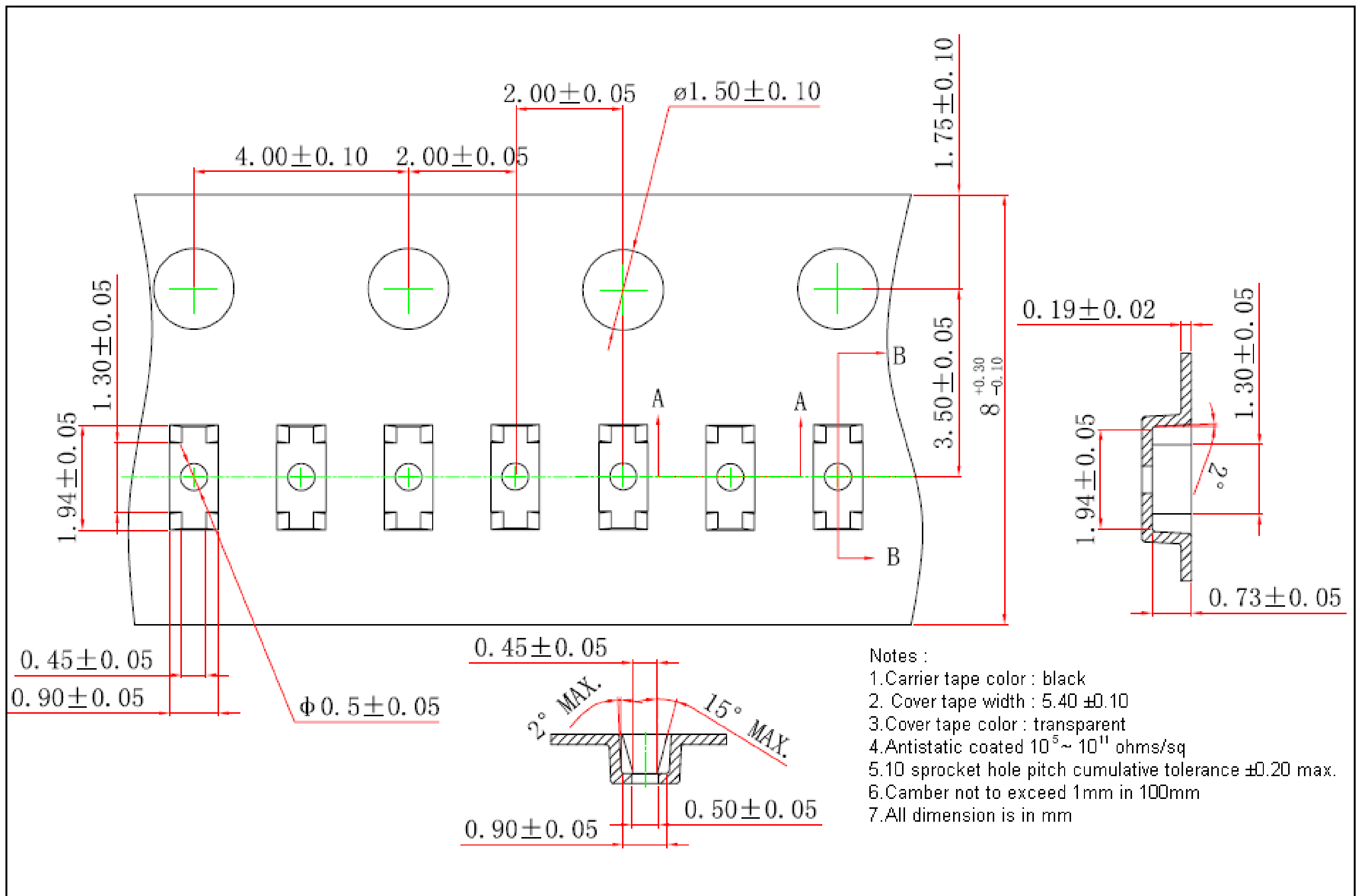
Recommended Footprint



Reel Dimension



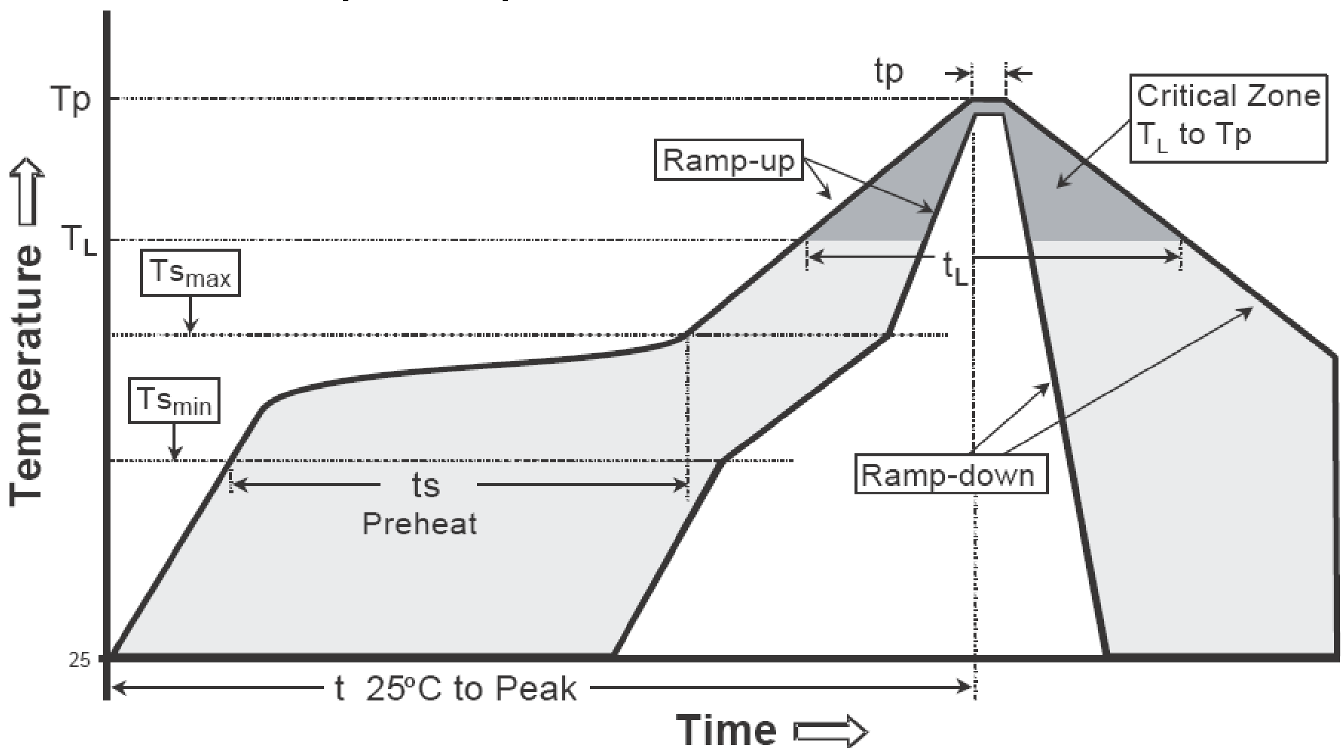
Carrier Tape Dimension



Recommended wave soldering condition

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

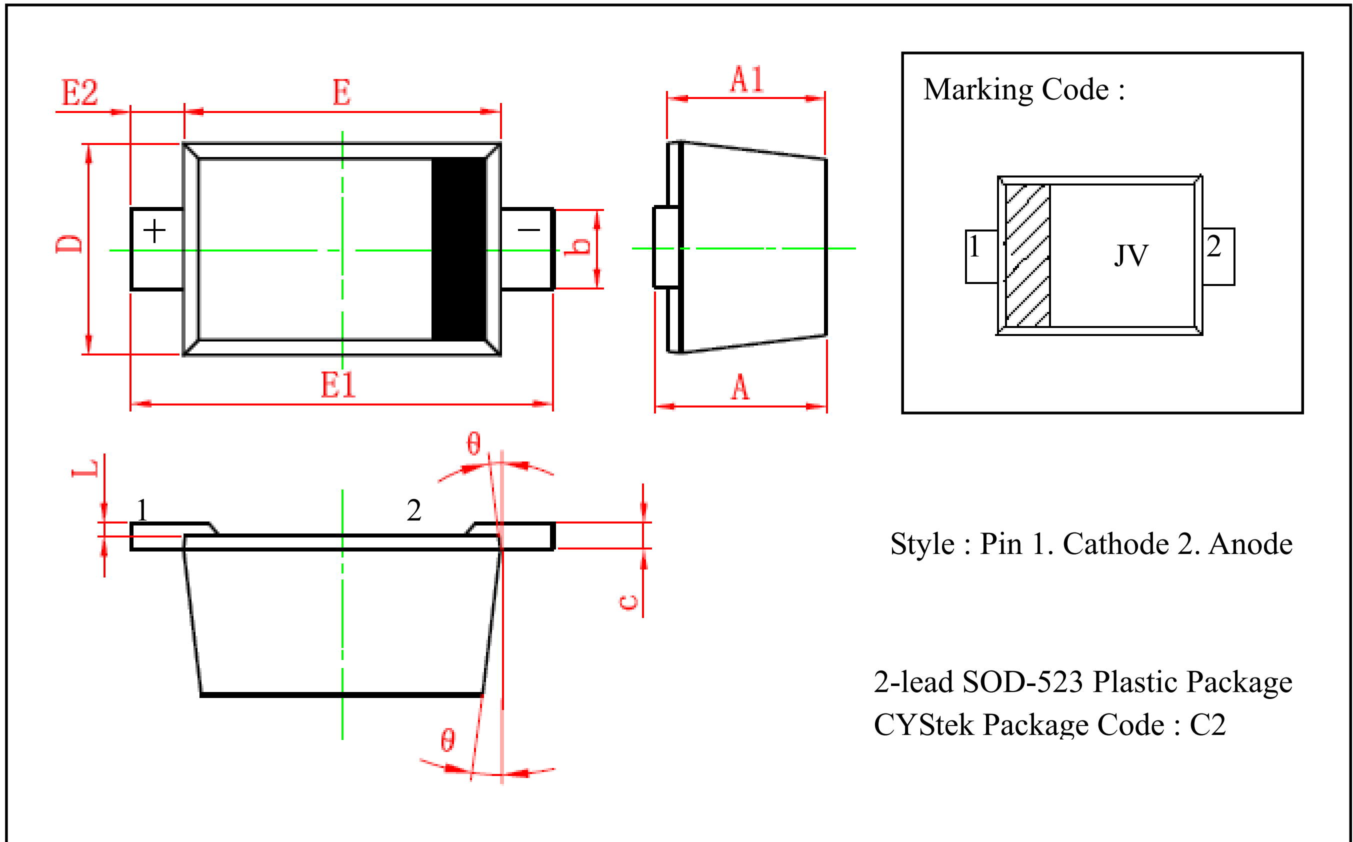
Recommended temperature profile for IR reflow



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(T_S min) −Temperature Max(T_S 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 (T_L) − Time (t_L)	183°C 60-150 seconds	217°C 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-523 Dimension



*: Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.	Min.	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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