

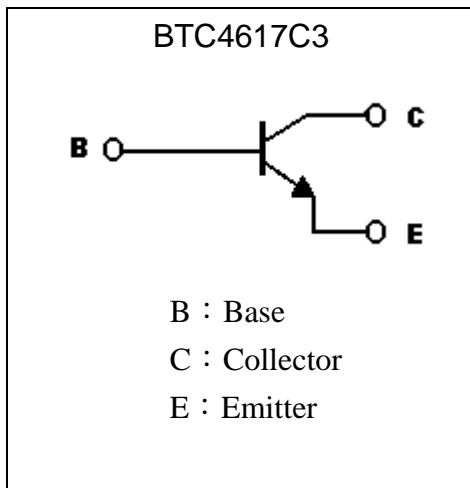
General Purpose NPN Epitaxial Planar Transistor

BTC4617C3

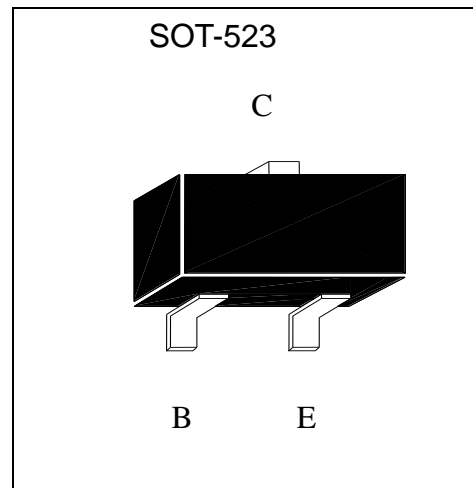
Description

- The BTC4617C3 is designed for use in driver stage of AF amplifier and low speed switching.
- Complementary to BTA1774C3.
- Pb-free lead plating and halogen-free package.

Symbol

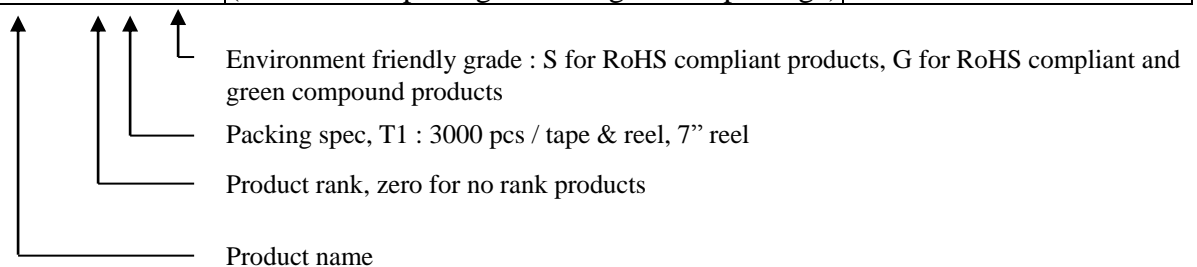


Outline



Ordering Information

Device	Package	Shipping
BTC4617C3-X-T1-G	SOT-523 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel



**Absolute Maximum Ratings** ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current	I_C	150	mA
Power Dissipation @ $T_A=25^{\circ}\text{C}$	P_D	150	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	833.3	$^{\circ}\text{C}/\text{W}$
Operating Junction Temperature Range	T_j	-55~+150	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55~+150	$^{\circ}\text{C}$

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

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	60	-	-	V	$I_C=50\mu\text{A}$
BV_{CEO}	50	-	-	V	$I_C=1\text{mA}$
BV_{EBO}	7	-	-	V	$I_E=50\mu\text{A}$
I_{CBO}	-	-	100	nA	$V_{CB}=60\text{V}$
I_{EBO}	-	-	100	nA	$V_{EB}=7\text{V}$
* $V_{CE(sat)}$	-	-	0.5	V	$I_C=50\text{mA}, I_B=5\text{mA}$
h_{FE}	270	-	560	-	$V_{CE}=6\text{V}, I_C=1\text{mA}$
f_T	-	180	-	MHz	$V_{CE}=12\text{V}, I_C=2\text{mA}, f=30\text{MHz}$
Cob	-	2	3.5	pF	$V_{CB}=12\text{V}, I_E=0\text{A}, f=1\text{MHz}$

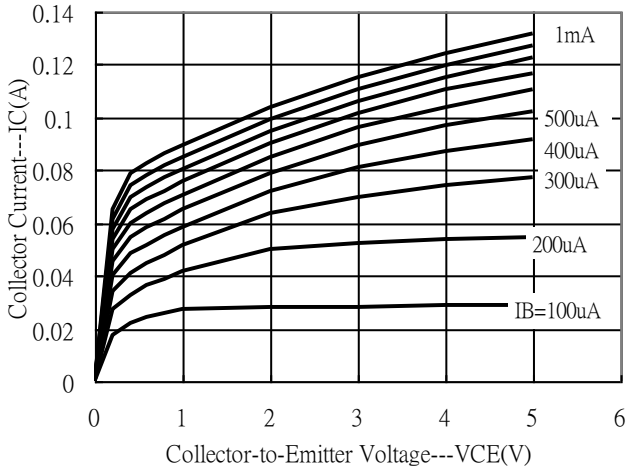
*Pulse Test: Pulse Width $\leq 380\mu\text{s}$, Duty Cycle $\leq 2\%$ **Marking Code and Classification of h_{FE}**

Rank	S
h_{FE} Range	270-560
Marking	BS

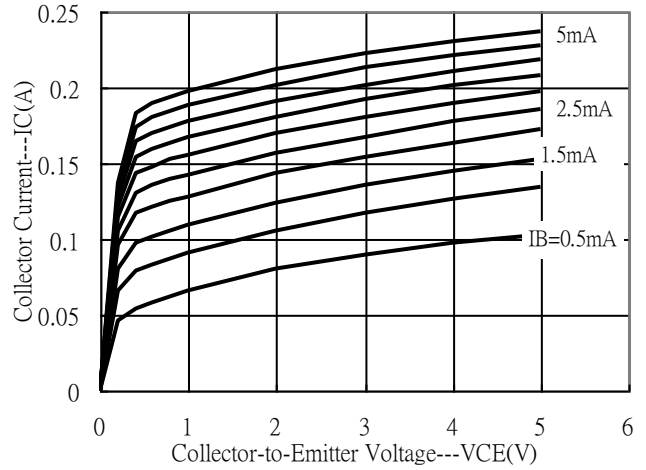


Typical Characteristics

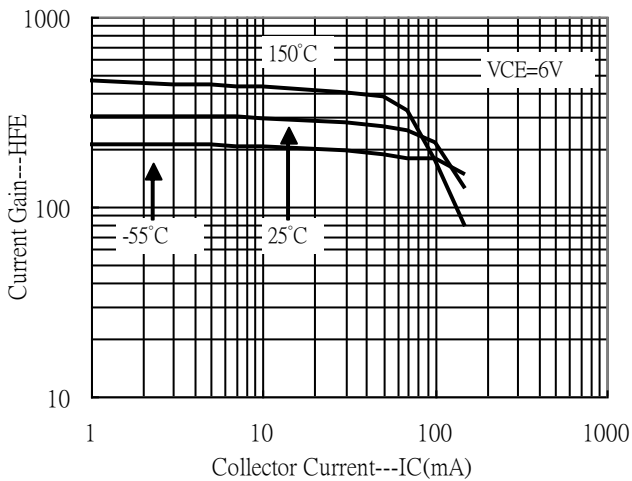
Emitter Grounded Output Characteristics



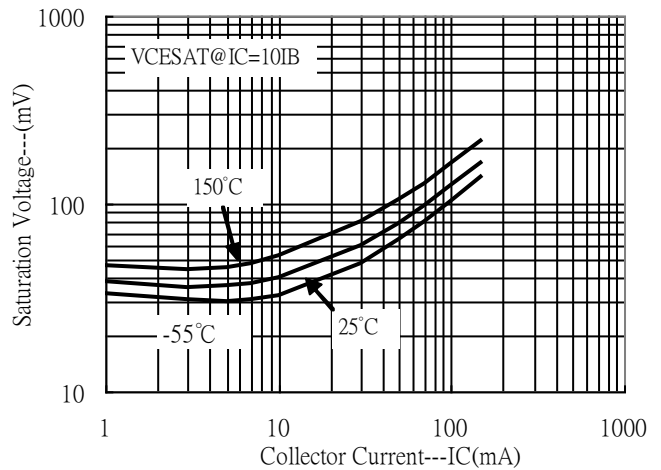
Emitter Grounded Output Characteristics



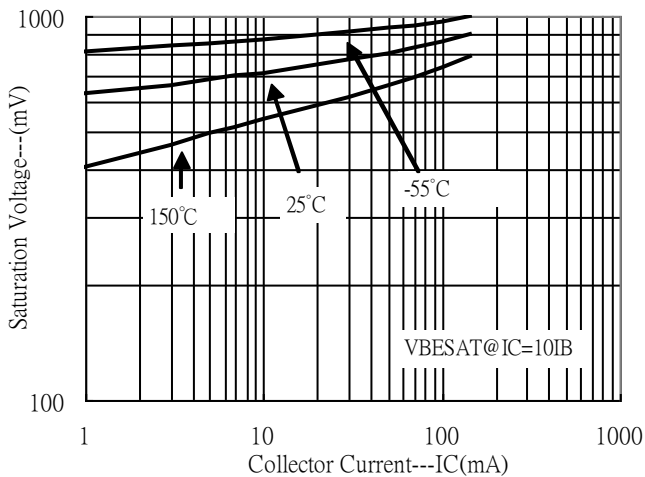
Current Gain vs Collector Current



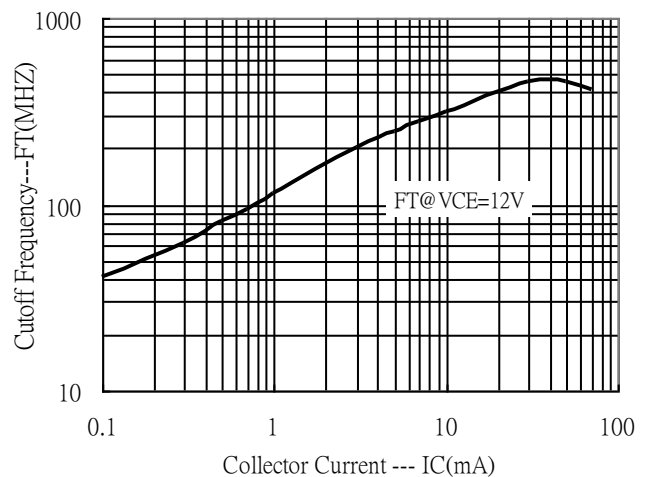
Saturation Voltage vs Collector Current



Saturation Voltage vs Collector Current



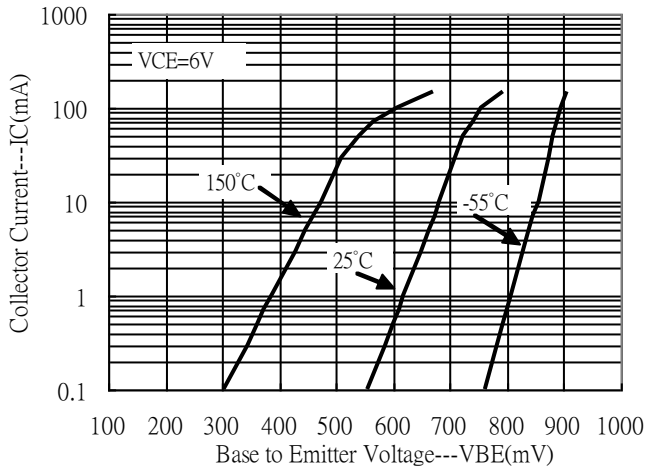
Cutoff Frequency vs Collector Current



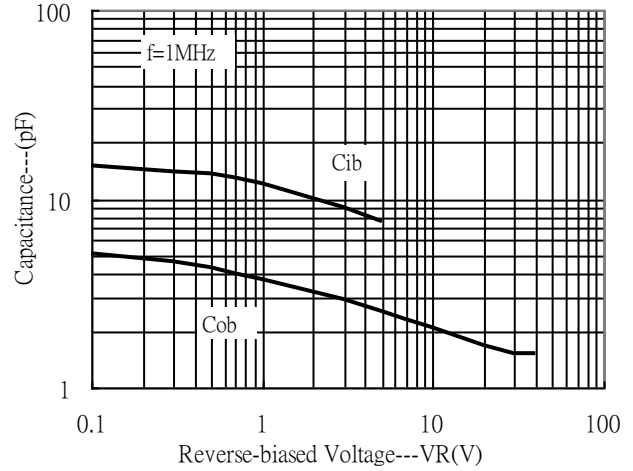


Typical Characteristics(Cont.)

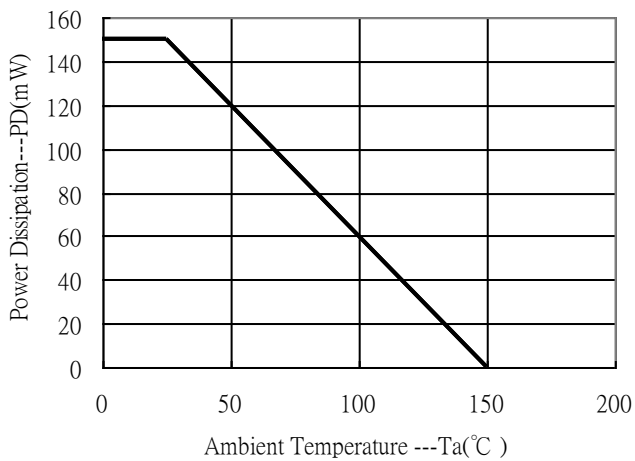
On Voltage vs Collector Current



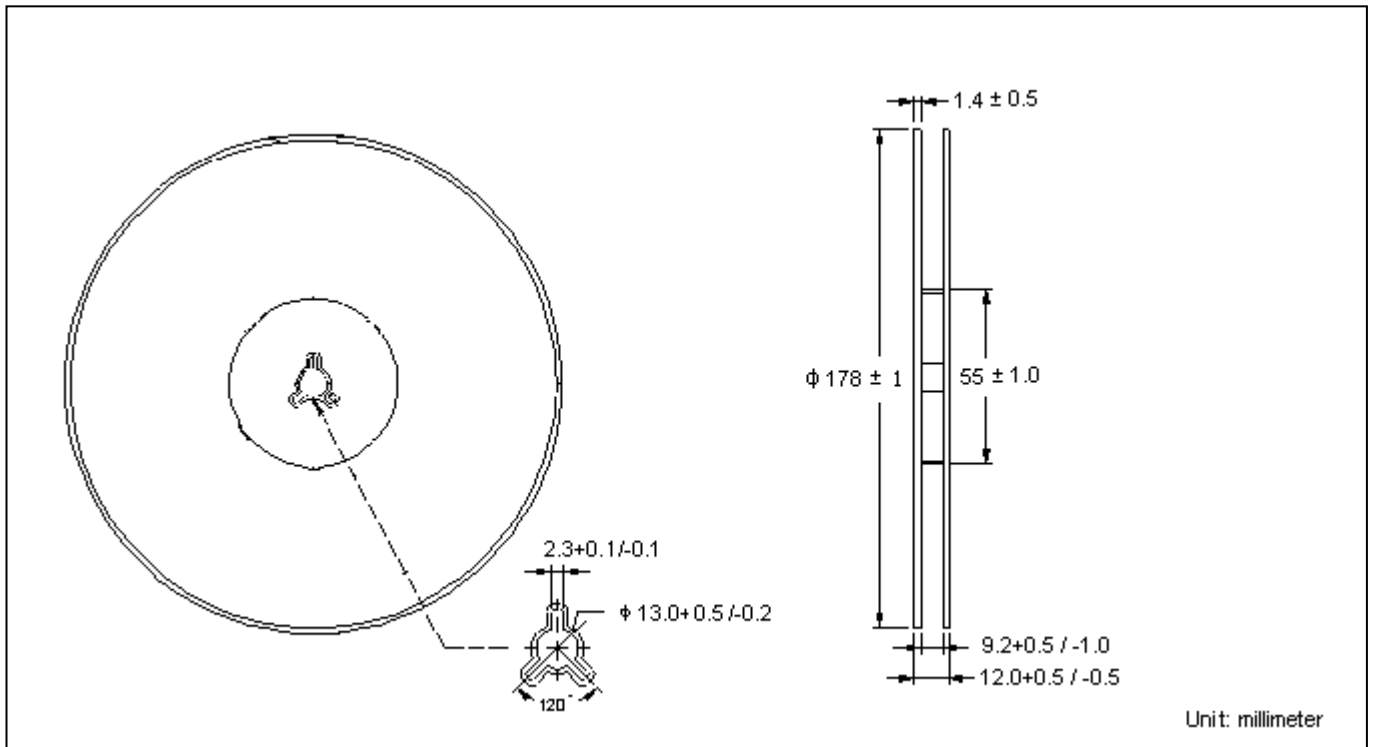
Capacitance vs Reverse-biased Voltage



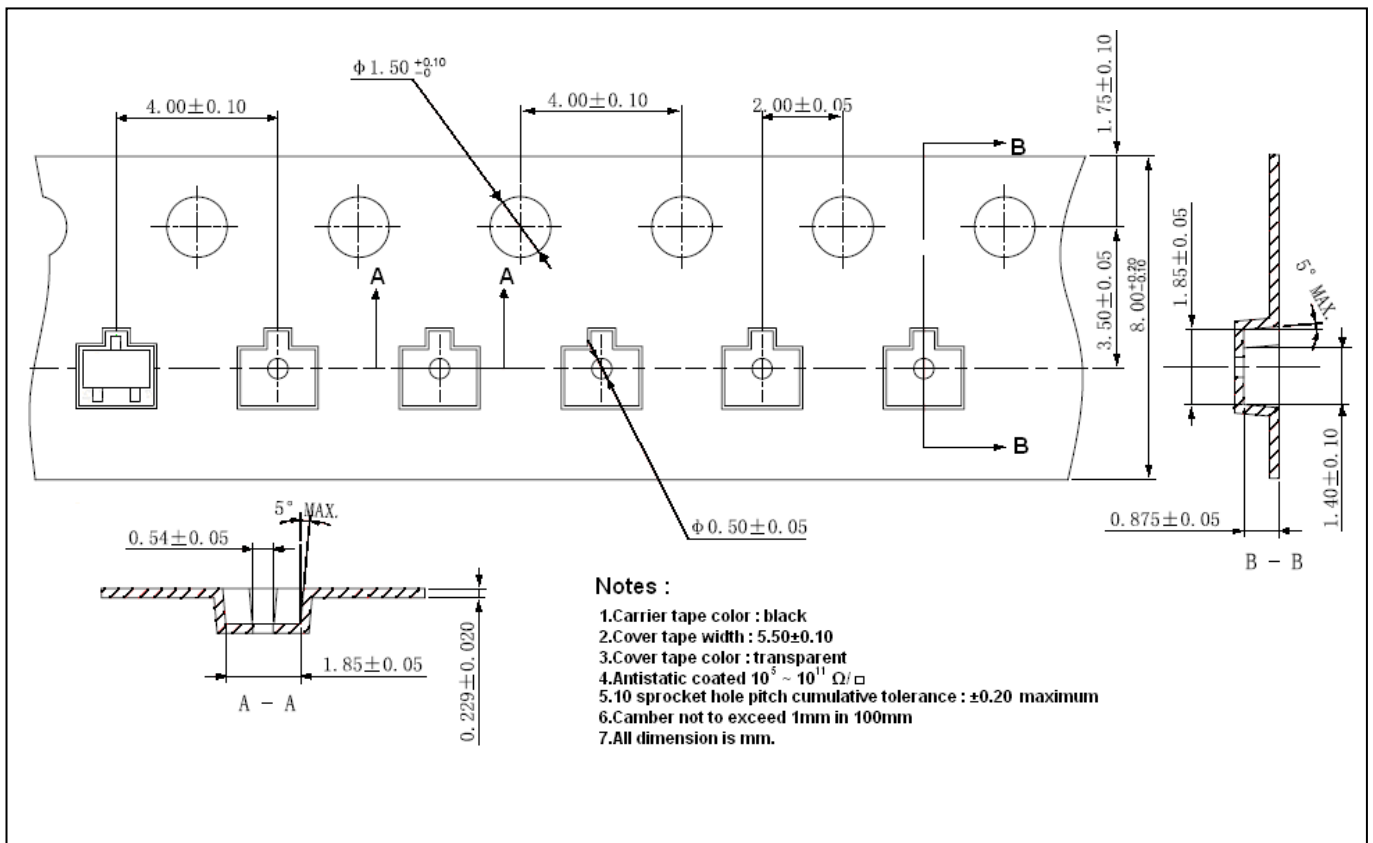
Power Derating Curve



Reel Dimension



Carrier Tape Dimension

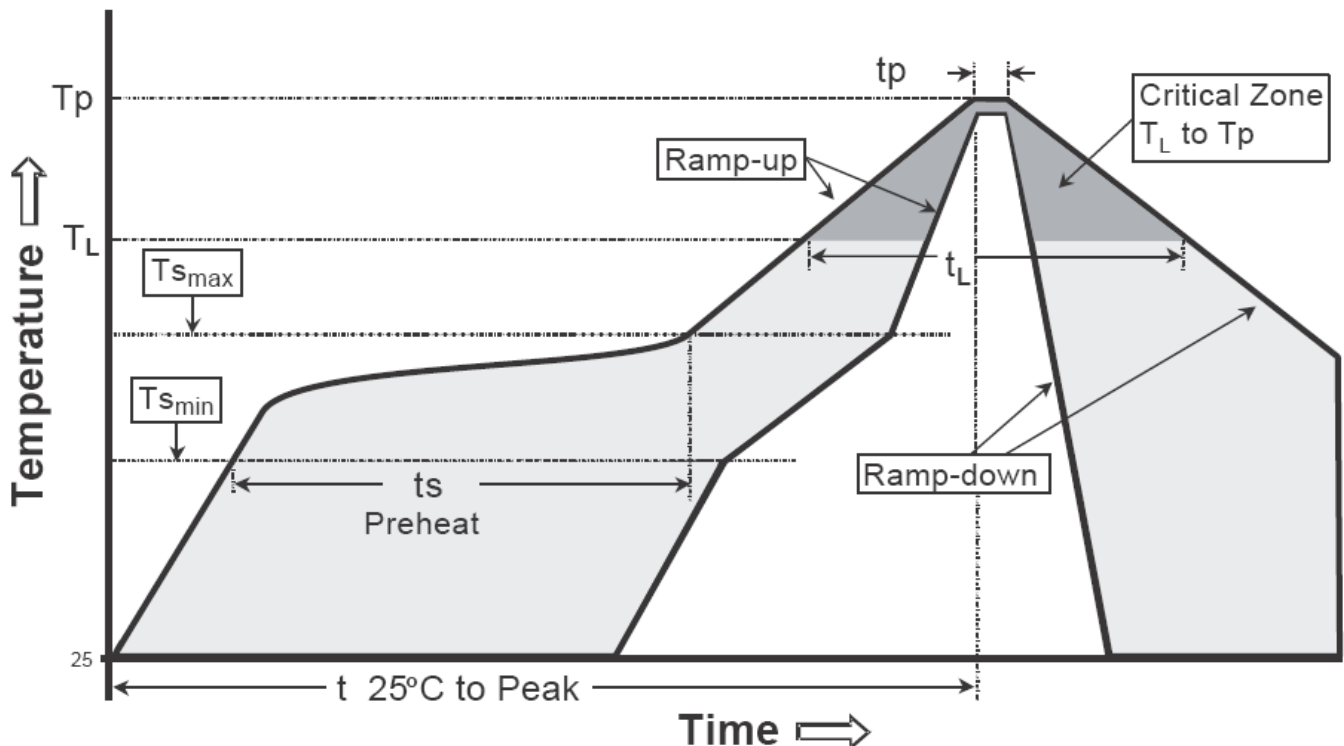




Recommended wave soldering condition

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

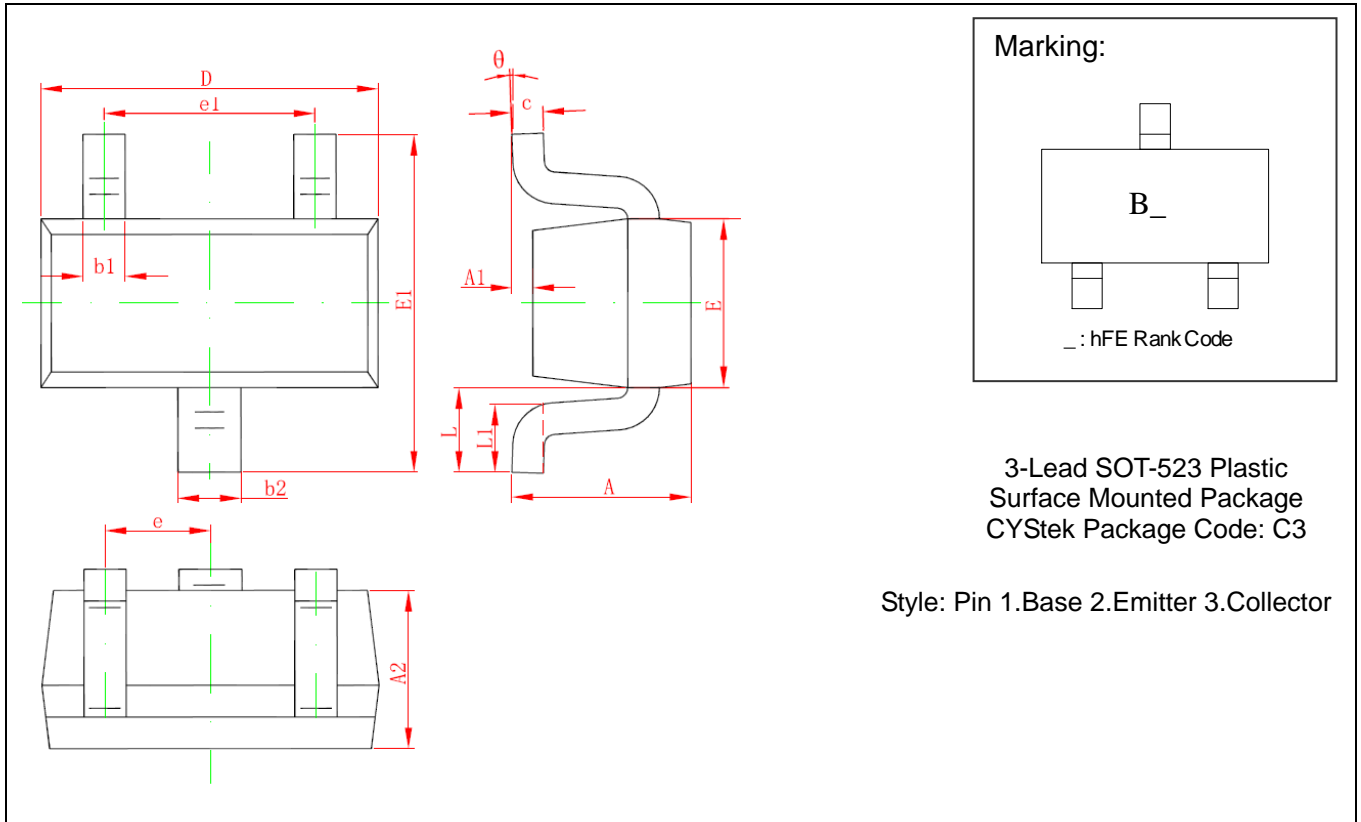
Recommended temperature profile for IR reflow



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 (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.

SOT-523 Dimension



*: Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035	E	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004	E1	1.450	1.750	0.057	0.069
A2	0.700	0.800	0.028	0.031	e	0.500	TYP	0.020	TYP
b1	0.150	0.250	0.006	0.010	e1	0.900	1.100	0.035	0.043
b2	0.250	0.350	0.010	0.014	L	0.400	REF	0.016	REF
c	0.100	0.200	0.004	0.008	L1	0.260	0.460	0.010	0.018
D	1.500	1.700	0.059	0.067	θ	0°	8°	0°	8°

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