General Purpose PNP Epitaxial Planar Transistor

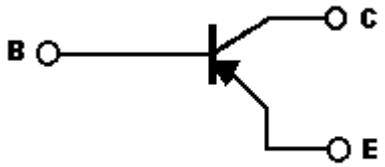
BTA1774C3

Description

- The BTA1774C3 is designed for use in driver stage of AF amplifier and general purpose amplification.
- High HFE and excellent linearity
- Complementary to BTC4617C3.
- Pb-free lead plating and halogen-free package

Symbol

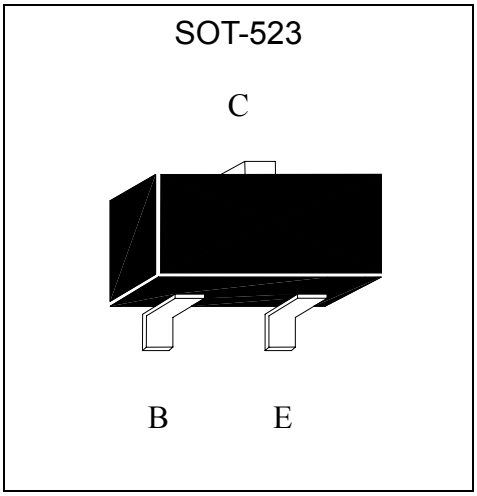
BTA1774C3



B：Base
C：Collector
E：Emitter

Outline

SOT-523



Ordering Information

Device	Package	Shipping
BTA1774C3-0-T1-G	SOT-523 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

Environment friendly grade : S for RoHS compliant products, G for RoHS compliant and green compound products

Packing spec, T1 : 3000 pcs / tape & reel, 7” reel

Product rank, zero for no rank products

Product name

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-50	V
Emitter-Base Voltage	V_{EBO}	-6	V
Collector Current	I_C	-150	mA
Power Dissipation	P_D	150	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	833.3	°C/W
Operating Junction Temperature Range	Tj	-55~+150	°C
Storage Temperature Range	Tstg	-55~+150	°C

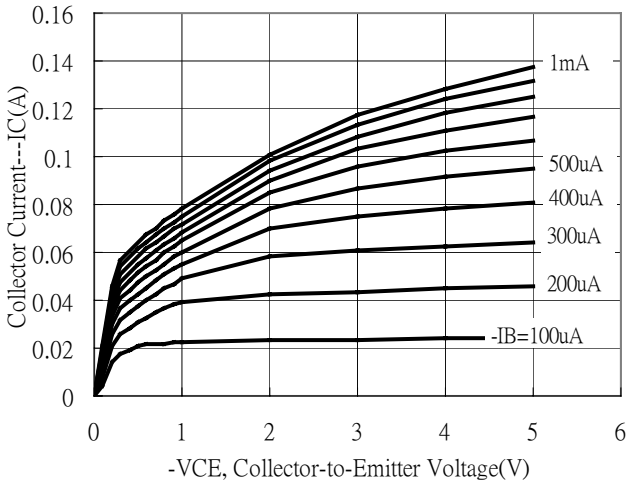
Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	-60	-	-	V	I_C=-50μA
BV_{CEO}	-50	-	-	V	I_C=-1mA
BV_{EBO}	-6	-	-	V	I_E=-50μA
I_{CBO}	-	-	-0.1	μA	V_{CB}=-60V
I_{EBO}	-	-	-0.1	μA	V_{EB}=-6V
*$V_{CE(sat)}$	-	-	-0.5	V	I_C=-50mA, I_B=-5mA
h_{FE}	180	-	560	-	V_{CE}=-6V, I_C=-1mA
f_T	-	140	-	MHz	V_{CE}=-12V, I_C=-2mA, f=30MHz
Cob	-	4	5	pF	V_{CB}=-12V, I_E=0, f=1MHz

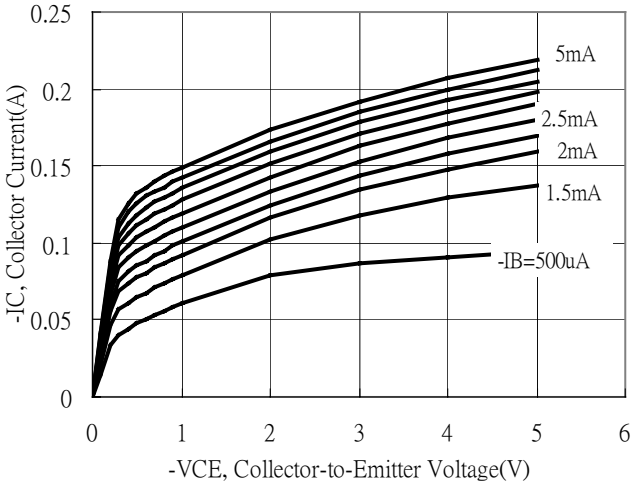
*Pulse Test: Pulse Width ≤380μs, Duty Cycle≤2%

Typical Characteristics

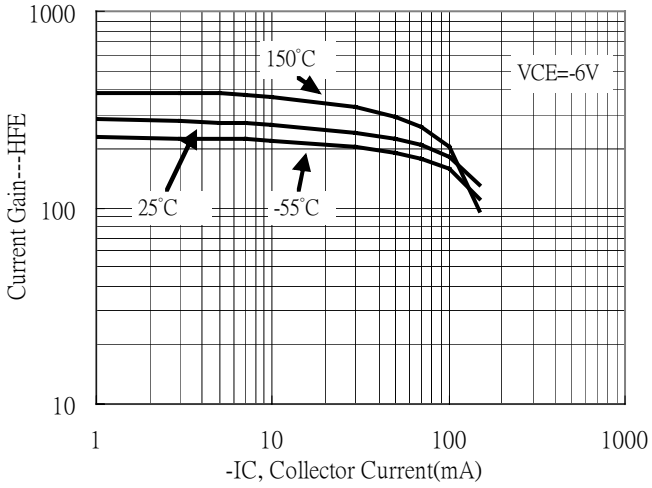
Emitter Grounded Output Characteristics



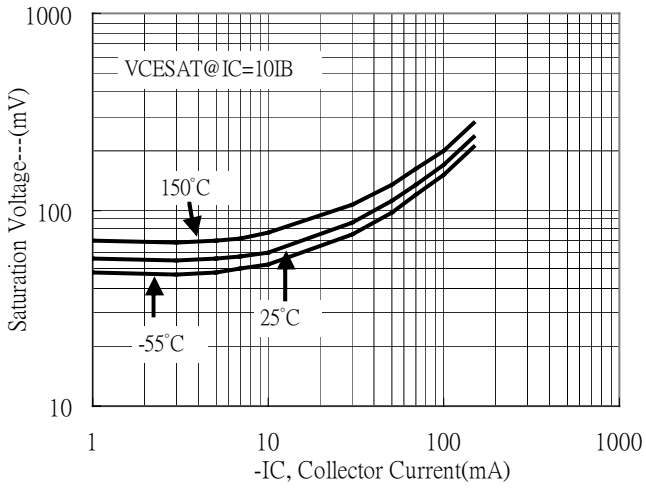
Emitter Grounded Output Characteristics



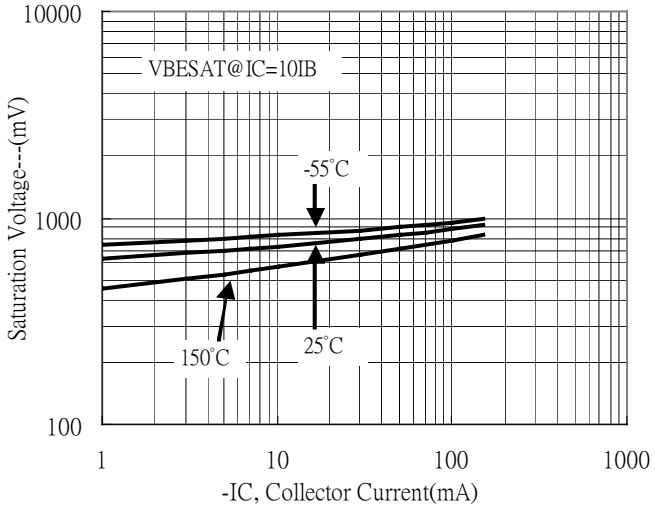
Current Gain vs Collector Current



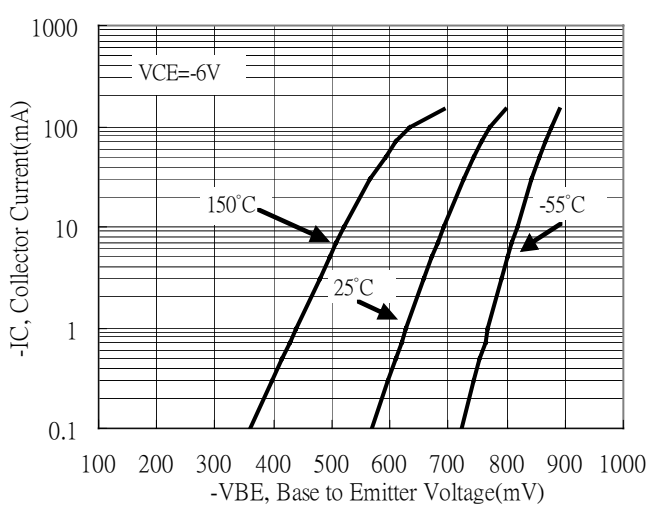
Saturation Voltage vs Collector Current



Saturation Voltage vs Collector Current

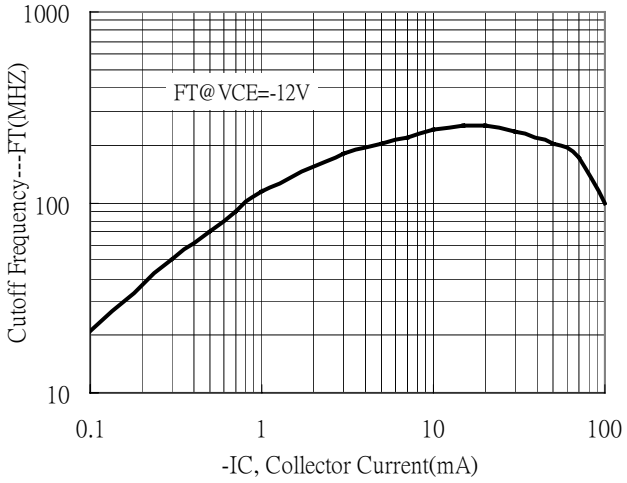


On Voltage vs Collector Current

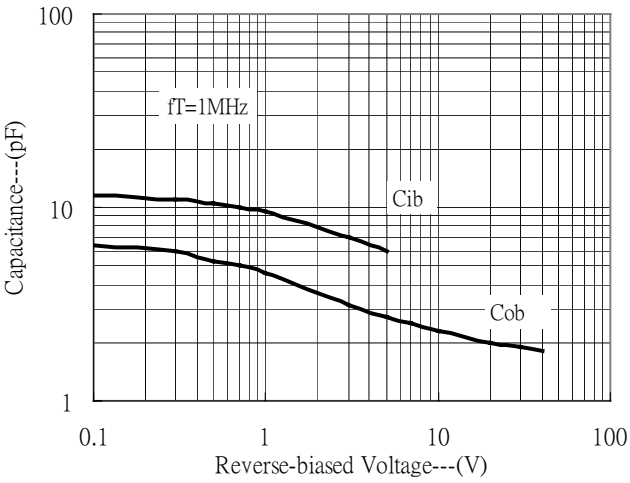


Typical Characteristics

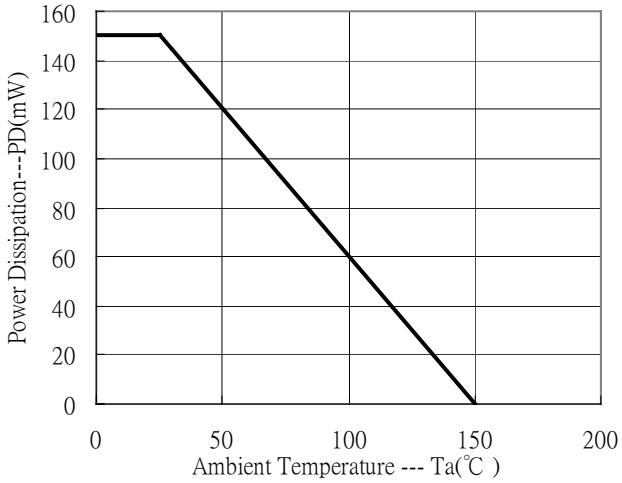
Cutoff Frequency vs Collector Current



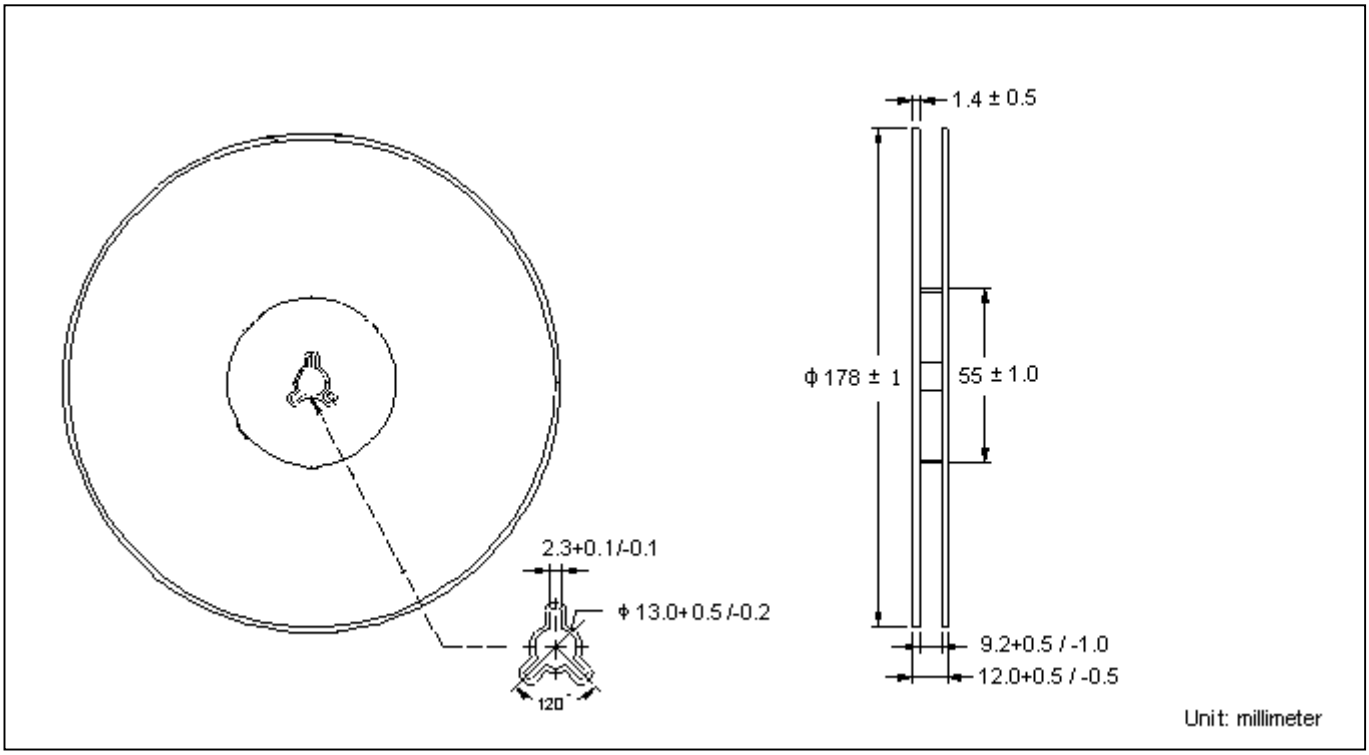
Capacitance Characteristics



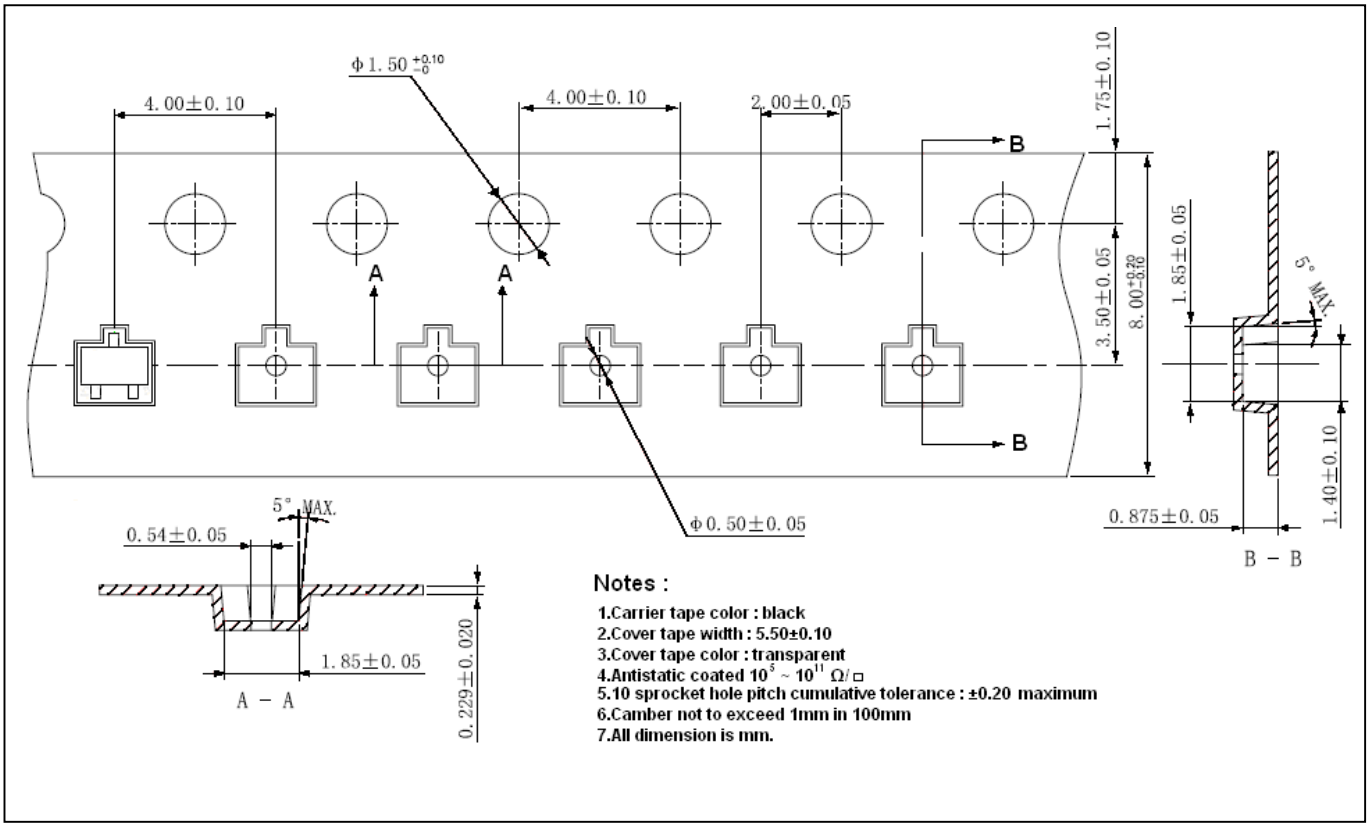
Power Derating Curve



Reel Dimension



Carrier Tape Dimension



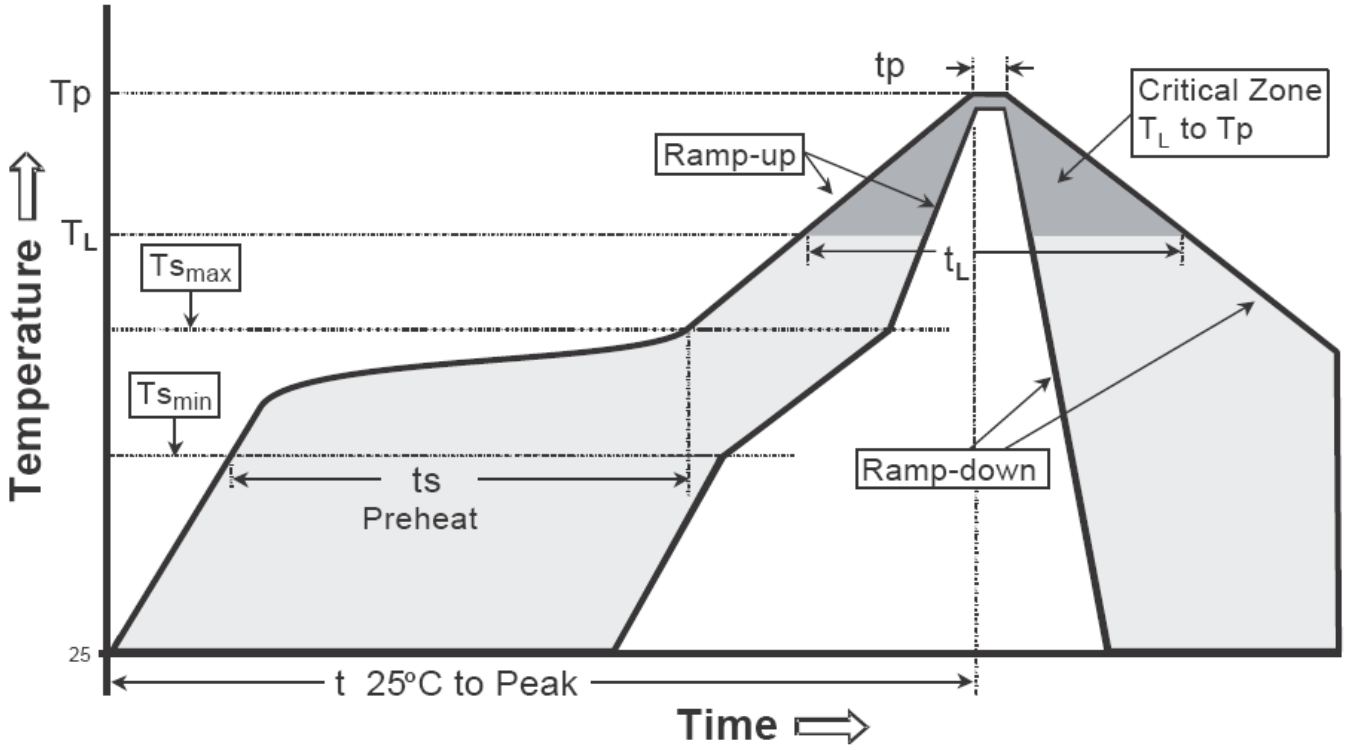
Notes :

1.Carrier tape color : black
2.Cover tape width : 5.50±0.10
3.Cover tape color : transparent
4.Antistatic coated 10^5 ~ 10^{11} Ω/□
5.10 sprocket hole pitch cumulative tolerance : ±0.20 maximum
6.Camber not to exceed 1mm in 100mm
7.All dimension is mm.

Recommended wave soldering condition

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

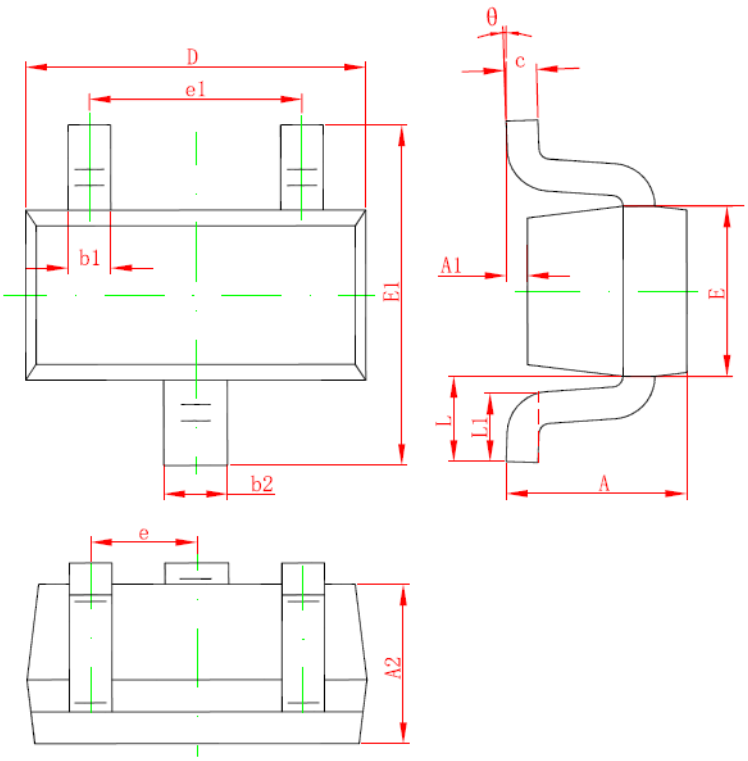
Recommended temperature profile for IR reflow



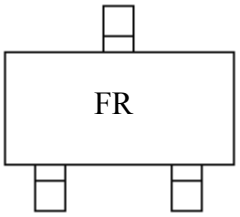
Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(T_S min) −Temperature Max(T_S max) −Time($t_{s\ min}$ to $t_{s\ max}$)	 100°C 150°C 60-120 seconds	 150°C 200°C 60-180 seconds
Time maintained above: −Temperature (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.

SOT-523 Dimension



Marking:



3-Lead SOT-523 Plastic
Surface Mounted Package
CYStek Package Code: C3

Style: Pin 1.Base 2.Emitter 3.Collector

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