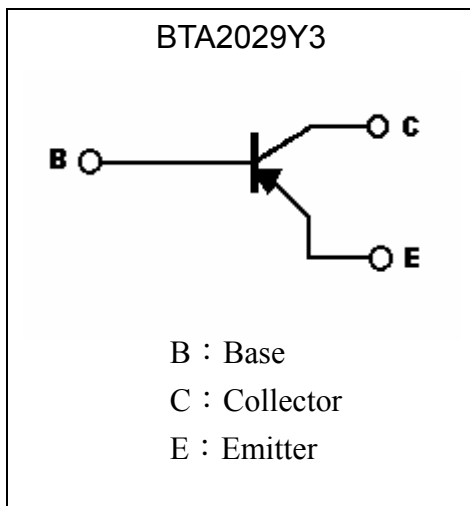
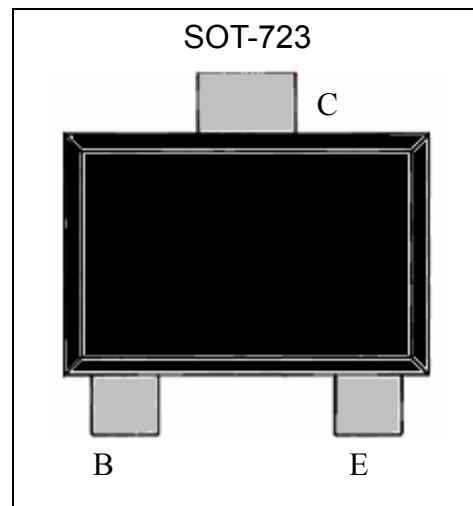


General Purpose PNP Epitaxial Planar Transistor

BTA2029Y3

Description

- The BTA2029Y3 is designed for use in driver stage of AF amplifier and general purpose amplification.
- High H_{FE} and excellent linearity
- Complementary to BTC5658Y3.
- Pb-free package

Symbol

Outline

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

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CB0}	-60	V
Collector-Emitter Voltage	V_{CEO}	-50	V
Emitter-Base Voltage	V_{EB0}	-6	V
Collector Current	I_C	-150	mA
Power Dissipation	P_d	150	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	833.3	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55~+150	$^{\circ}\text{C}$



Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BVCBO	-60	-	-	V	IC=-50μA
BVCEO	-50	-	-	V	IC=-1mA
BVEBO	-6	-	-	V	IE=-50μA
ICBO	-	-	-0.1	μA	VCB=-60V
IEBO	-	-	-0.1	μA	VEB=-6V
*VCE(sat)	-	-	-0.5	V	IC=-50mA, IB=-5mA
hFE	180	-	560	-	VCE=-6V, IC=-1mA
fT	-	140	-	MHz	VCE=-12V, IC=-2mA, f=30MHz
Cob	-	4	5	pF	VCB=-12V, IE=0, f=1MHz

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

Marking Code and Classification of hFE

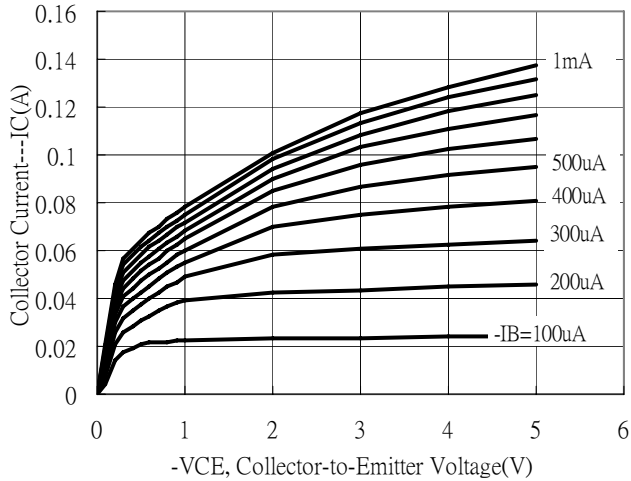
Rank	R	S
hFE Range	180-390	270-560
Marking	FR	FS

Ordering Information

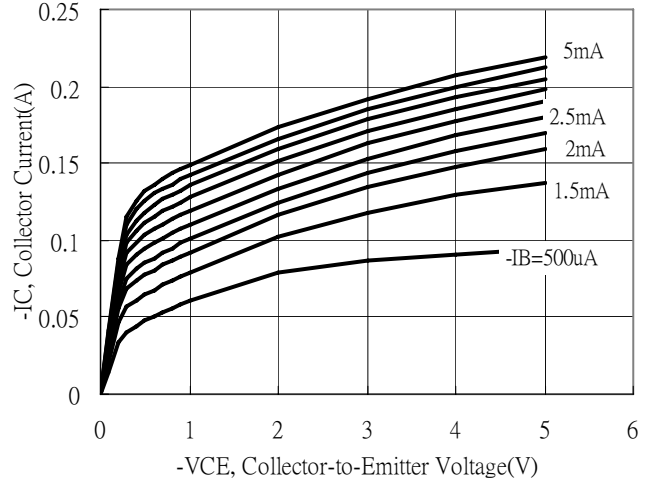
Device	Package	Shipping
BTA2029Y3	SOT-723 (Pb-free)	8000 pcs / Tape & Reel

Typical Characteristics

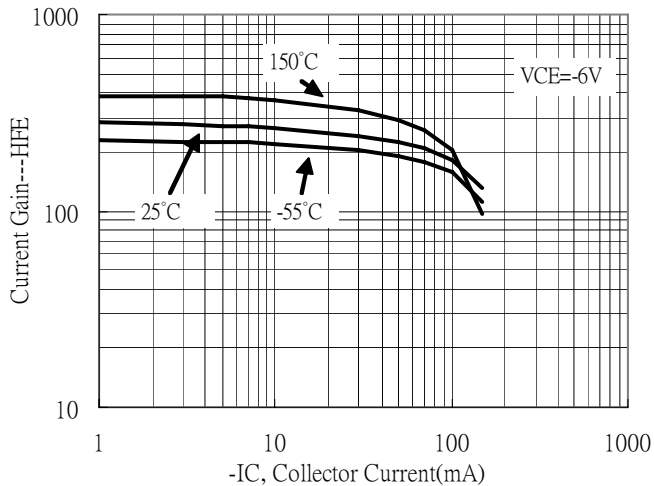
Emitter Grounded Output Characteristics



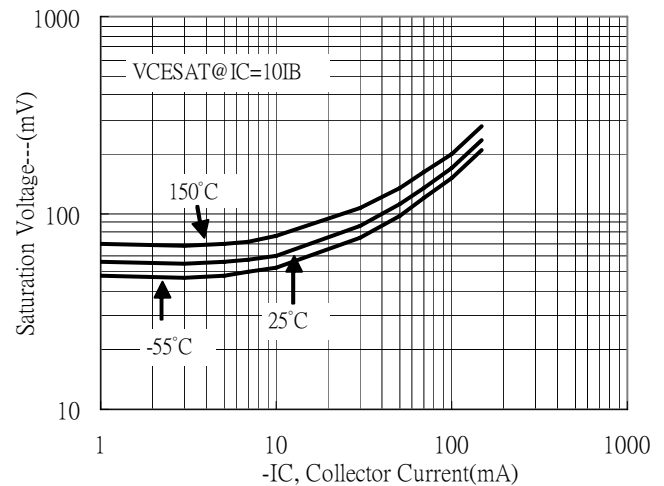
Emitter Grounded Output Characteristics



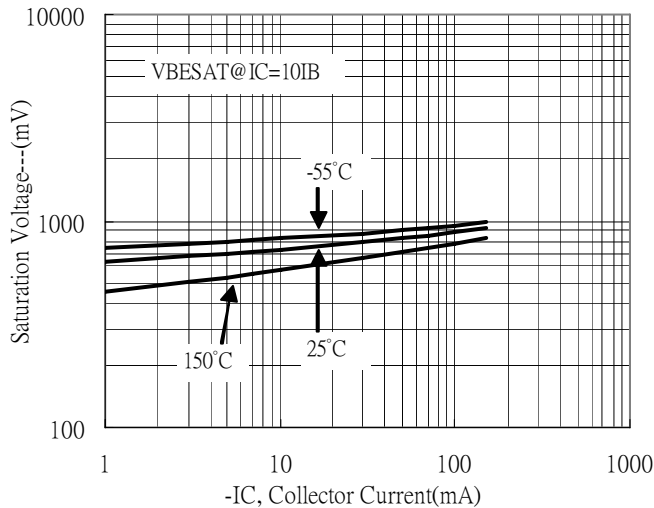
Current Gain vs Collector Current



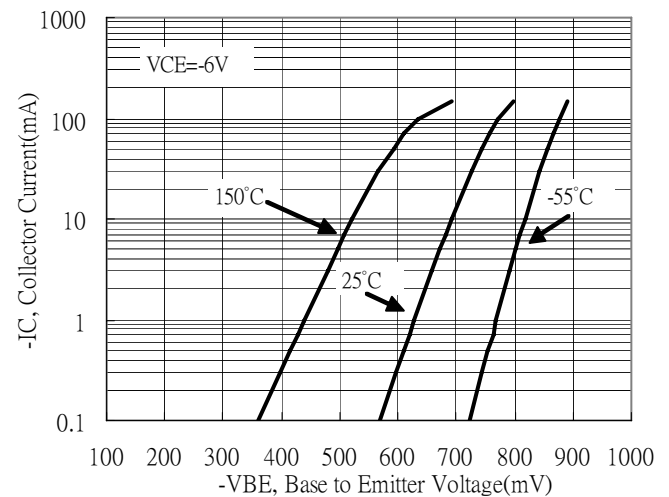
Saturation Voltage vs Collector Current



Saturation Voltage vs Collector Current

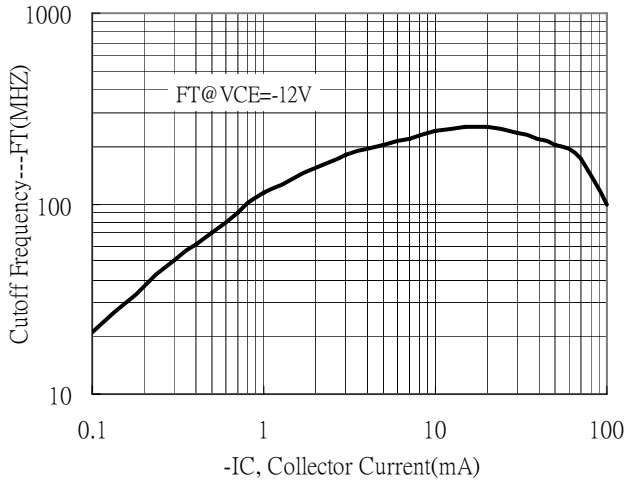


On Voltage vs Collector Current

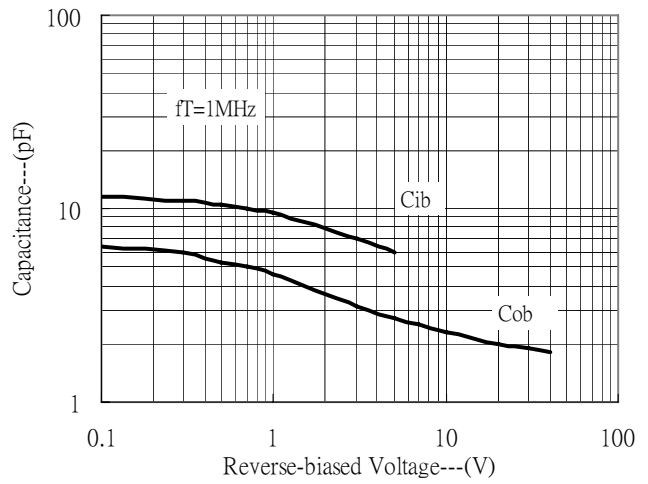


Typical Characteristics

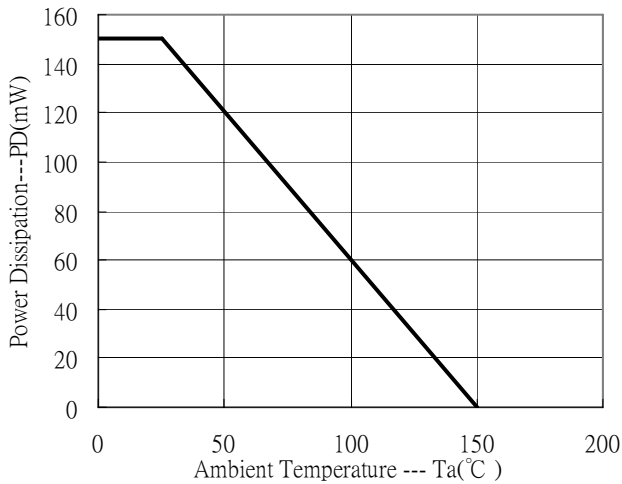
Cutoff Frequency vs Collector Current



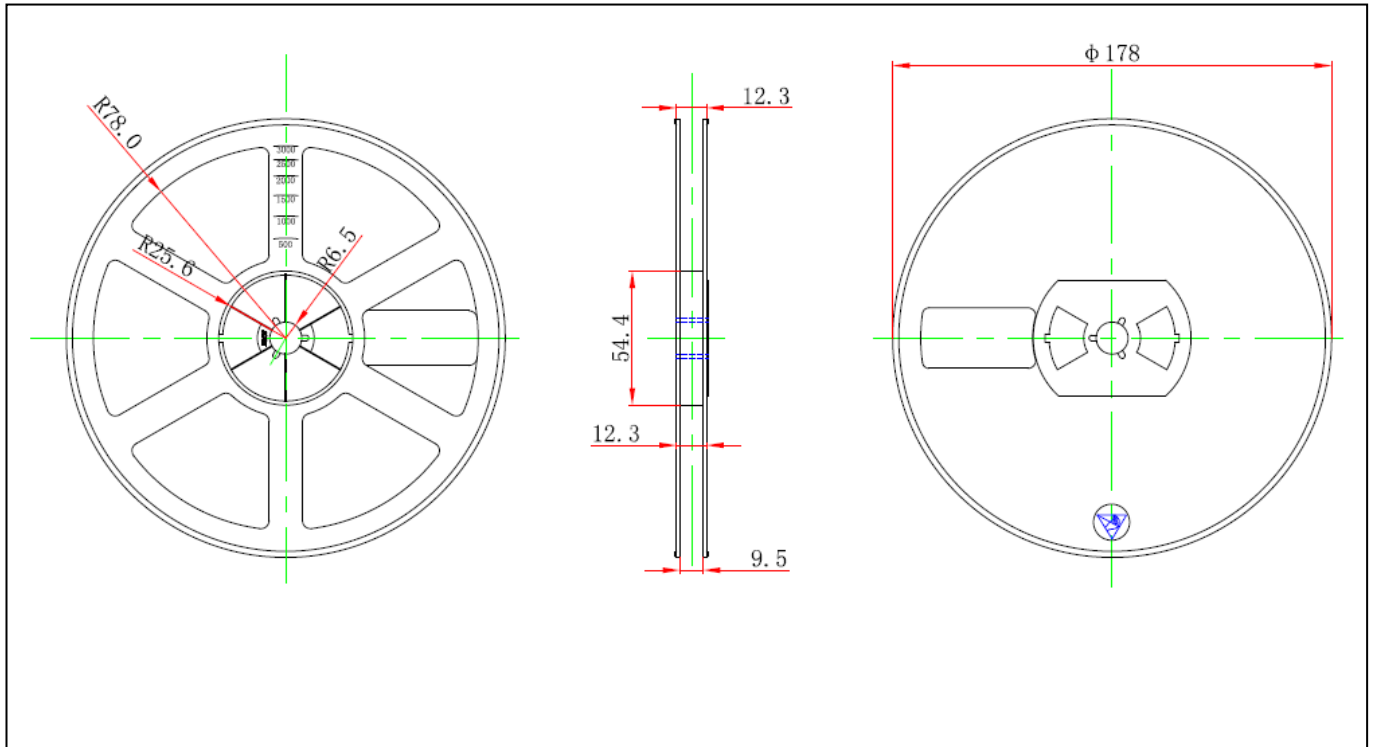
Capacitance Characteristics



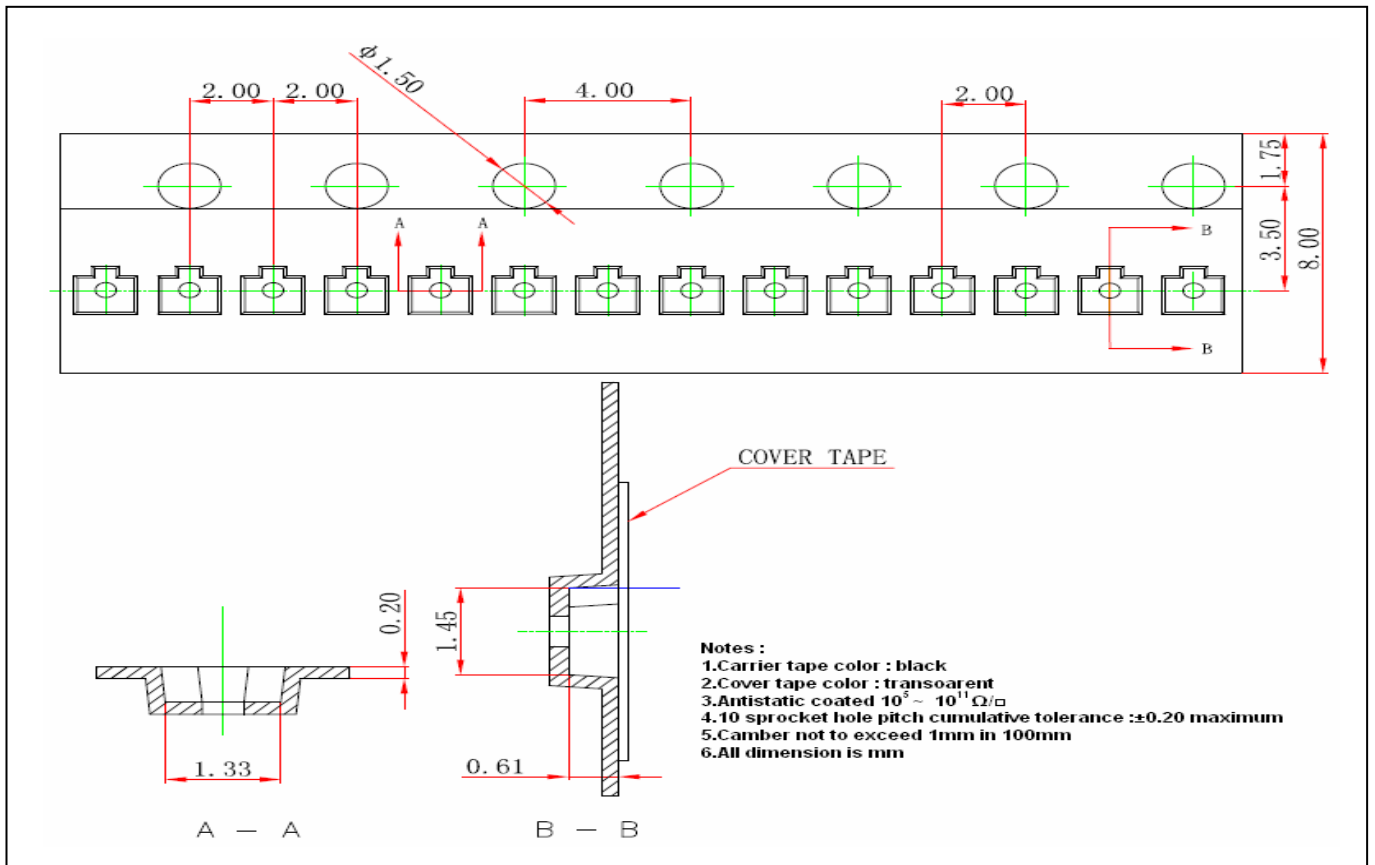
Power Derating Curve



Reel Dimension



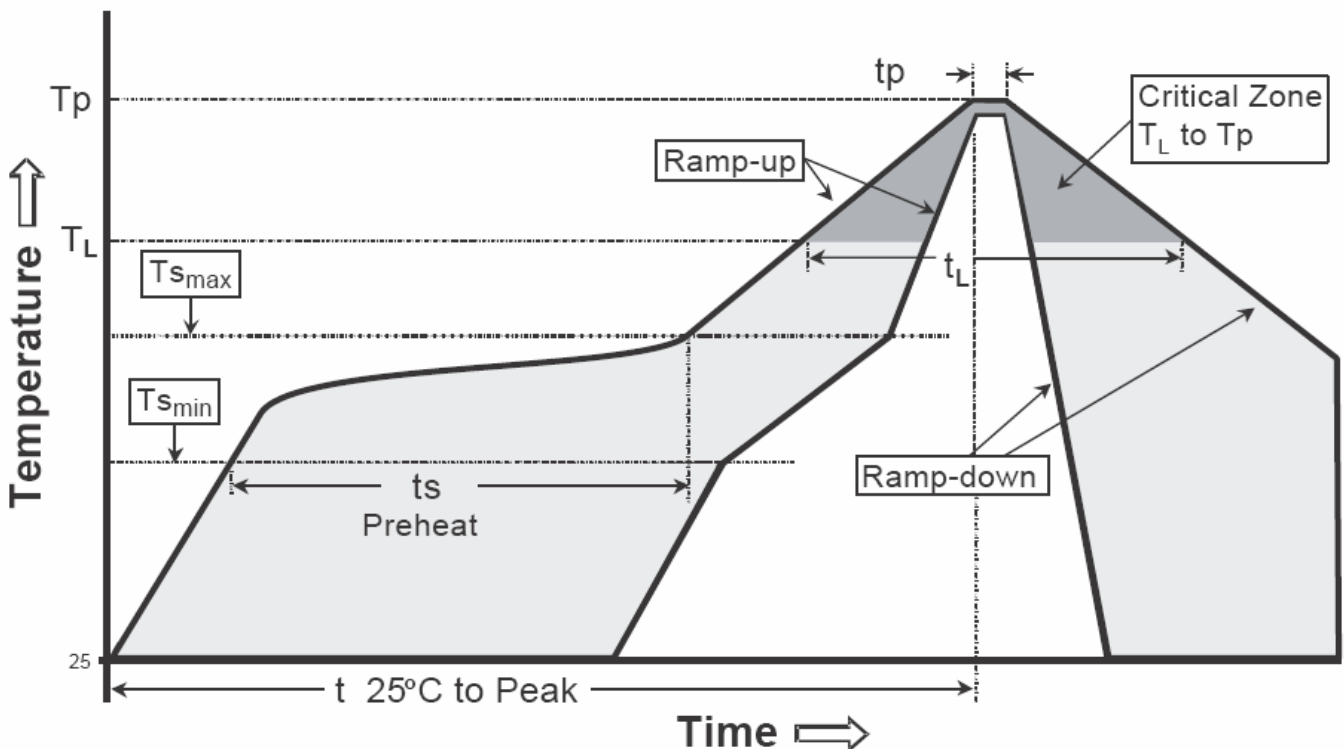
Carrier Tape Dimension



Recommended wave soldering condition

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

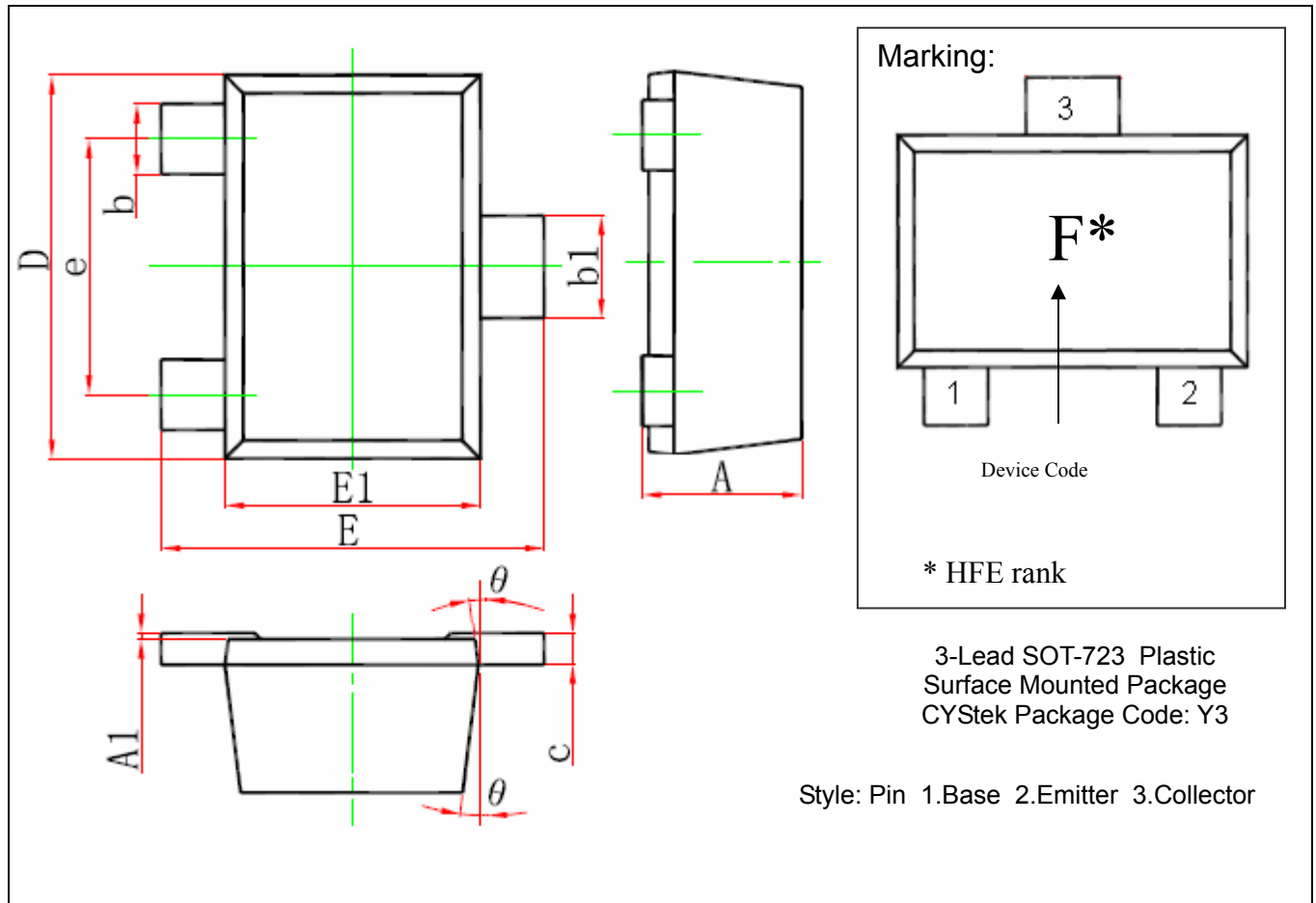
Recommended temperature profile for IR reflow



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 : All temperatures refer to topside of the package, measured on the package body surface.

SOT-723 Dimension



*Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.000	0.500	0.000	0.020	D	1.150	1.250	0.045	0.049
A1	0.000	0.050	0.000	0.002	E	1.150	1.250	0.045	0.049
b	0.170	0.270	0.007	0.011	E1	0.750	0.850	0.030	0.033
b1	0.270	0.370	0.011	0.015	e	0.800*		0.031*	
c	0.000	0.150	0.000	0.006	θ	7° REF		7° REF	

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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