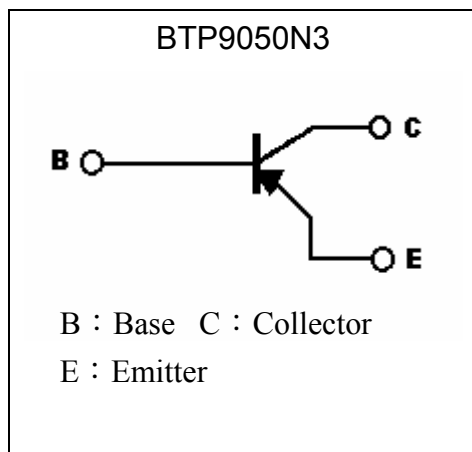
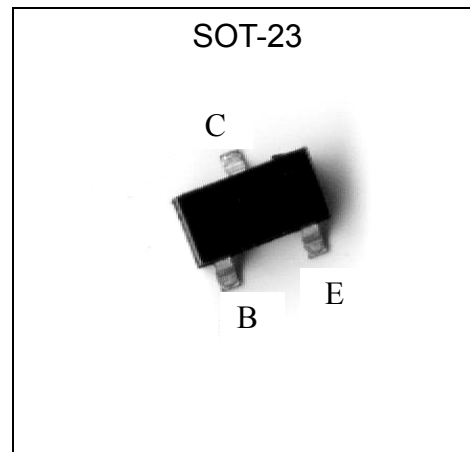


High Voltage PNP Epitaxial Planar Transistor

BTP9050N3

Description

- High breakdown voltage. ($BV_{CEO} = -500V$)
- Low saturation voltage, typical $V_{CE(sat)} = -0.11V$ at $I_C/I_B = -20mA/-2mA$.
- Complementary to BTNA45N3
- Pb-free lead plating and halogen-free package

Symbol

Outline

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

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	-500	V
Collector-Emitter Voltage	V_{CEO}	-500	V
Emitter-Base Voltage	V_{EBO}	-7	V
Collector Current(DC)	I_C	-150	mA
Peak Collector Current , single pulse, pulse width $t_p < 1ms$	I_{CM}	-500	mA
Peak Base Current, single pulse, pulse width $t_p < 1ms$	I_{BM}	-200	mA
Power Dissipation	P_D	300 (Note)	mW
Operating Junction and Storage Temperature Range	$T_j ; T_{stg}$	-55~+150	$^\circ C$

Note : Device mounted on a FR-4 PCB, single sided copper, tin plated and standard footprint.



Thermal Characteristics

Parameter	Symbol	Limit	Unit
Thermal Resistance, Junction-to-Ambient, in free air (Note)	Rth,j-a	417	°C/W
Thermal Resistance, Junction-to-Solder point	Rth,j-sp	70	

Note : Device mounted on a FR-4 PCB, single sided copper, tin plated and standard footprint.

Characteristics (Ta=25°C)

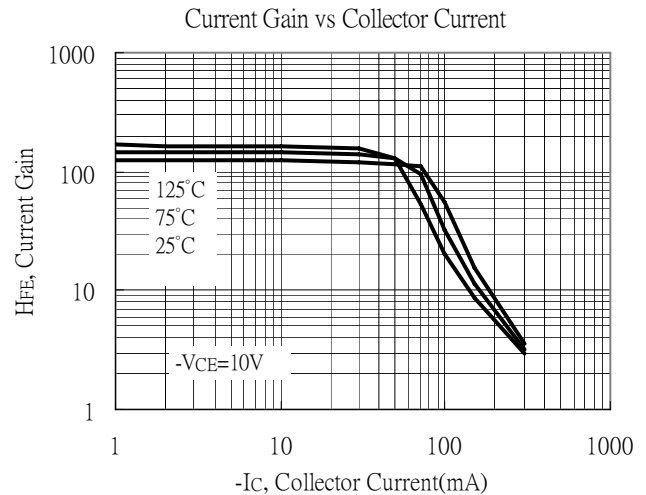
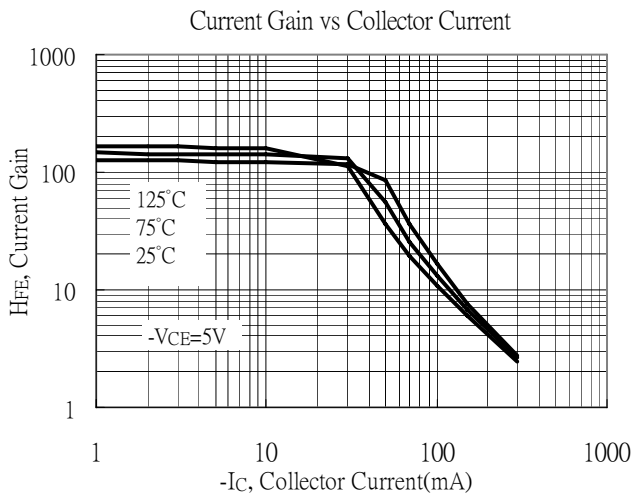
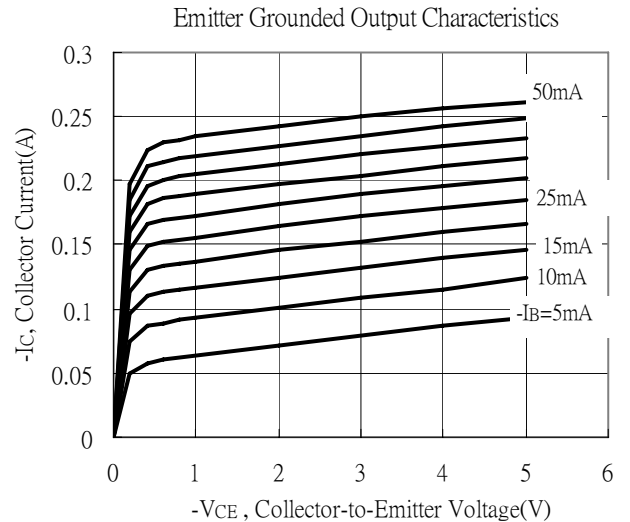
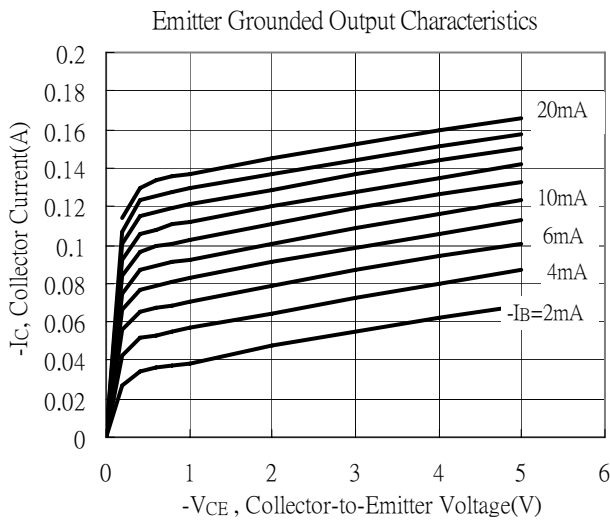
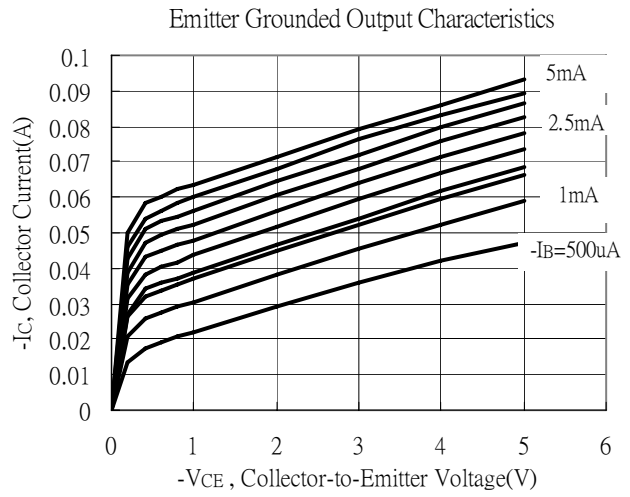
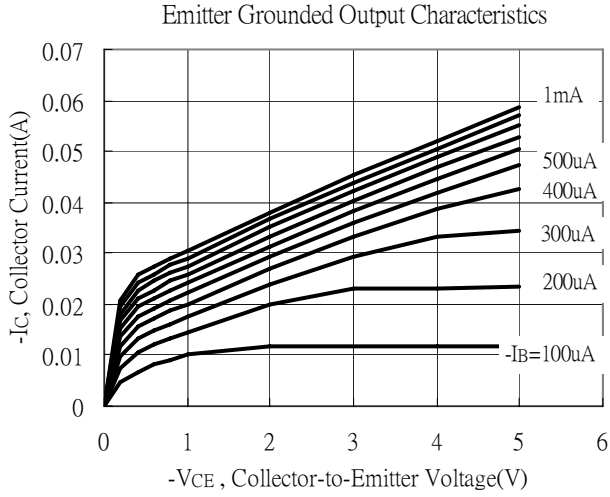
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BVCBO	-500	-	-	V	IC=-100μA
BVCEO	-500	-	-	V	IC=-1mA
BVEBO	-7	-	-	V	IE=-50μA
ICBO	-	-	-100	nA	VCB=-480V
ICES	-	-	-100	nA	VCE=-480V, VBE=0V
IEBO	-	-	-100	nA	VEB=-7V
*VCE(sat)	-	-0.11	-0.2	V	IC=-20mA, IB=-2mA
*VCE(sat)	-	-0.11	-0.2	V	IC=-50mA, IB=-10mA
*VBE(sat)	-	-0.79	-0.9	V	IC=-50mA, IB=-10mA
*hFE 1	100	-	300	-	VCE=-10V, IC=-10mA
*hFE 2	80	-	300	-	VCE=-10V, IC=-50mA
*hFE 3	50	-	-	-	VCE=-10V, IC=-100mA
fT	-	50	-	MHZ	VCE=-10V, IC=-10mA, f=10MHZ
Cob	-	12	-	pF	VCB=-10V, IE=0A, f=1MHZ
Cib	-	85	-	pF	VEB=-0.5V, IC=0A, f=1MHZ

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

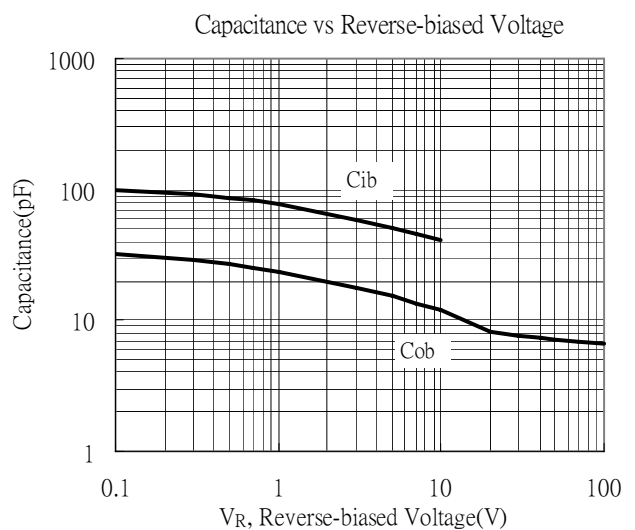
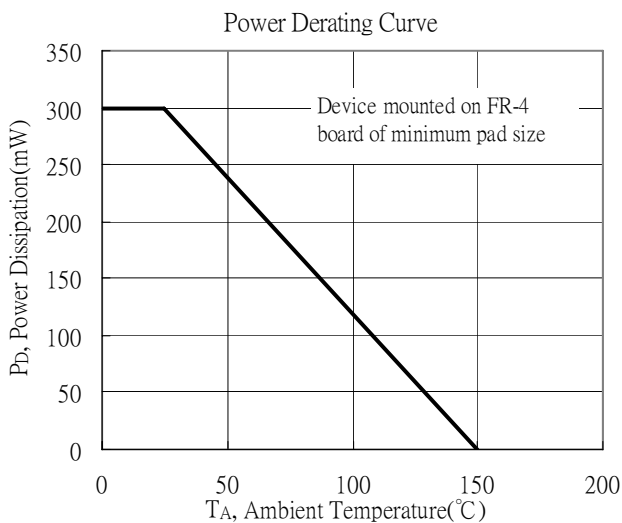
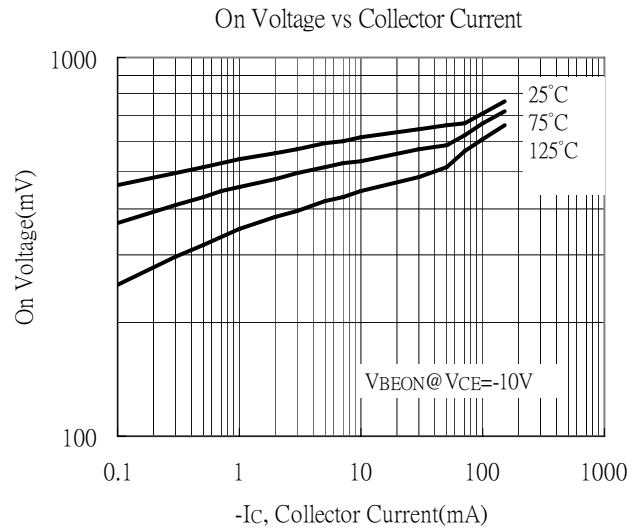
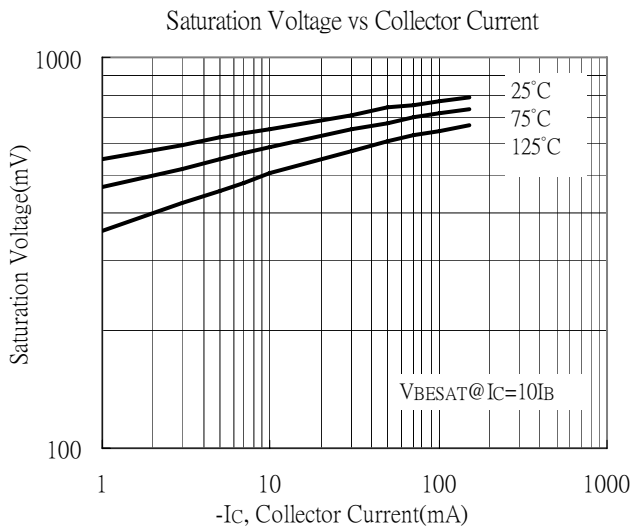
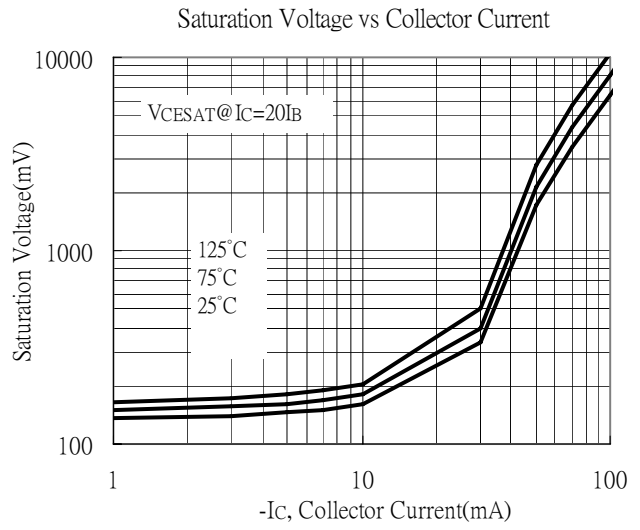
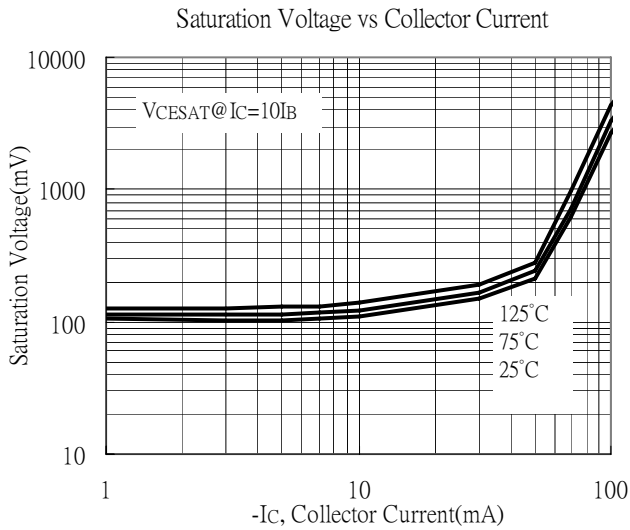
Ordering Information

Device	Package	Shipping
BTP9050N3-0-T1-G	SOT-23 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

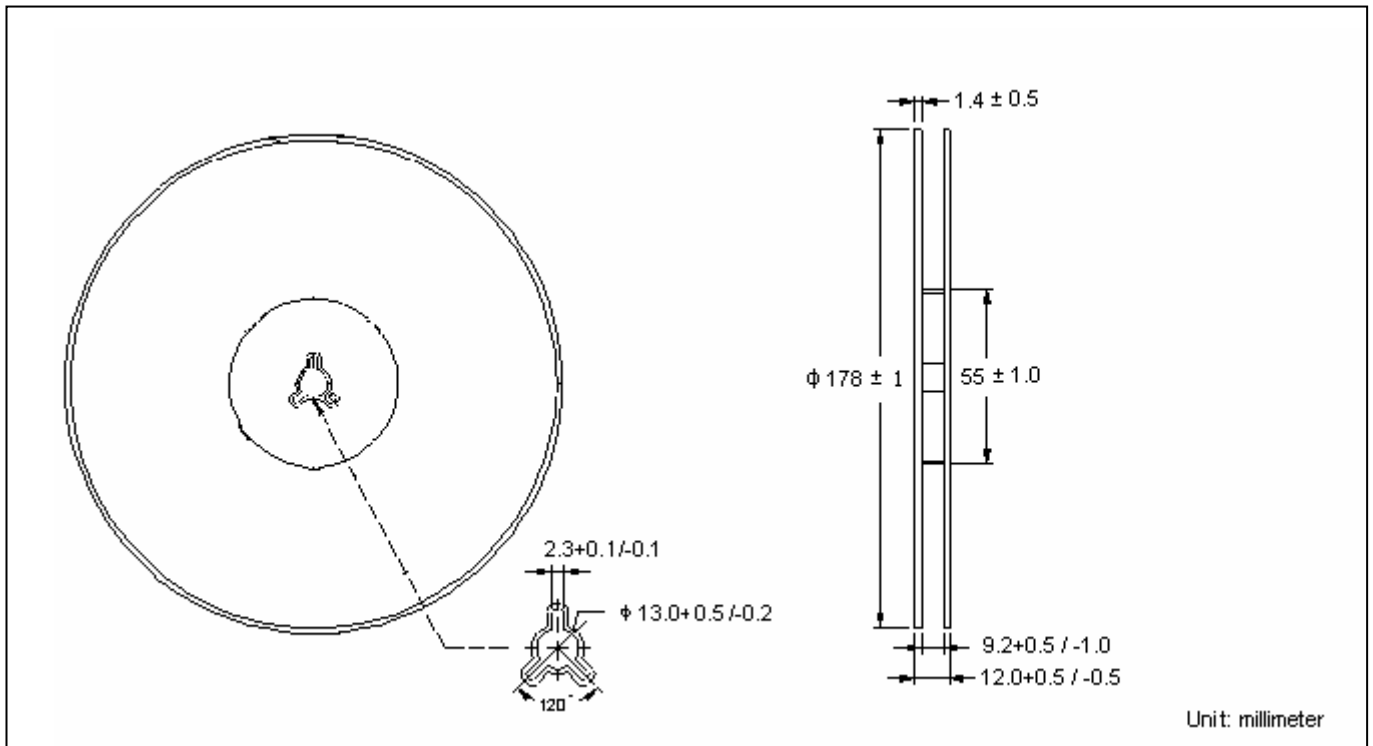
Typical Characteristics



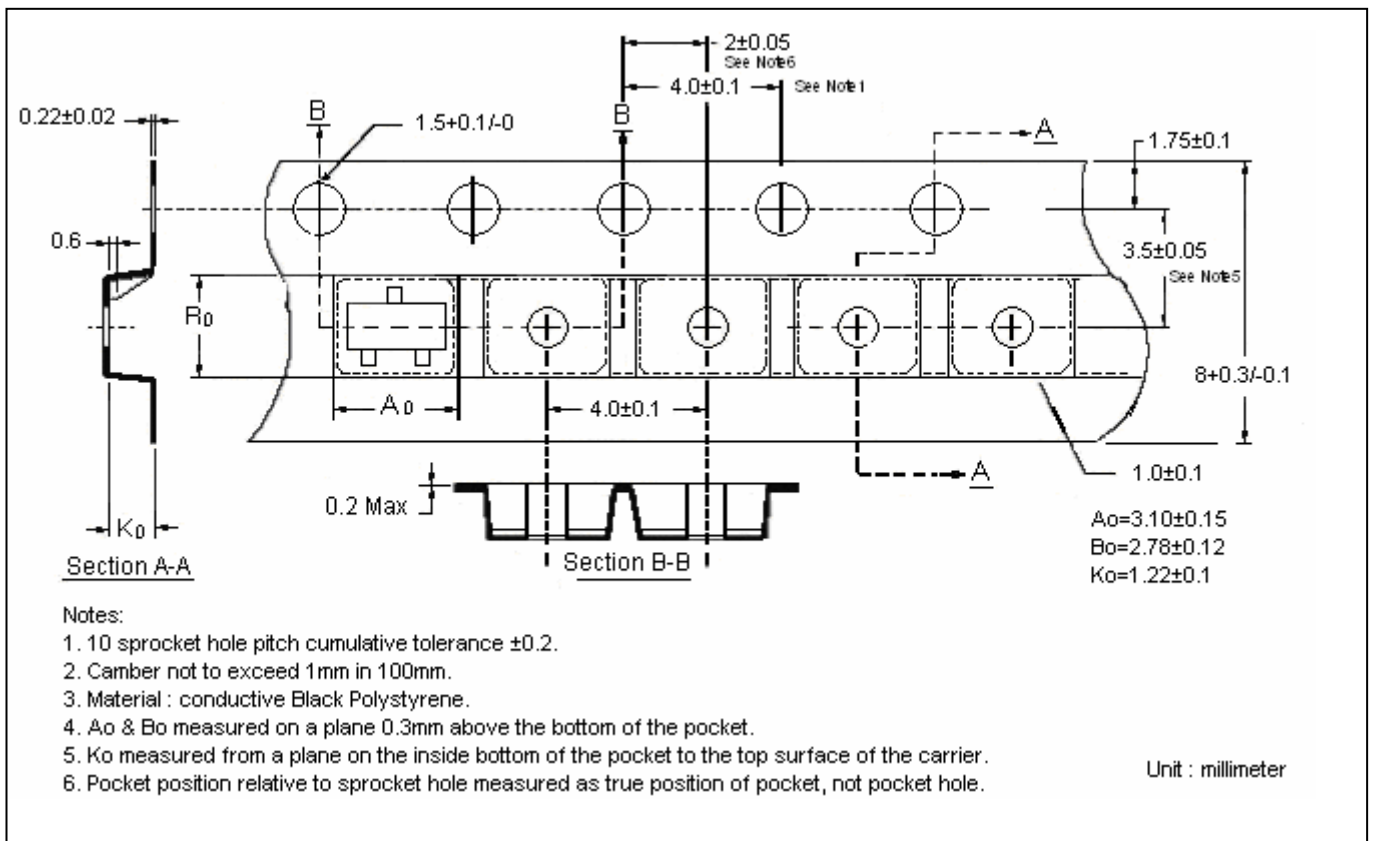
Typical Characteristics



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

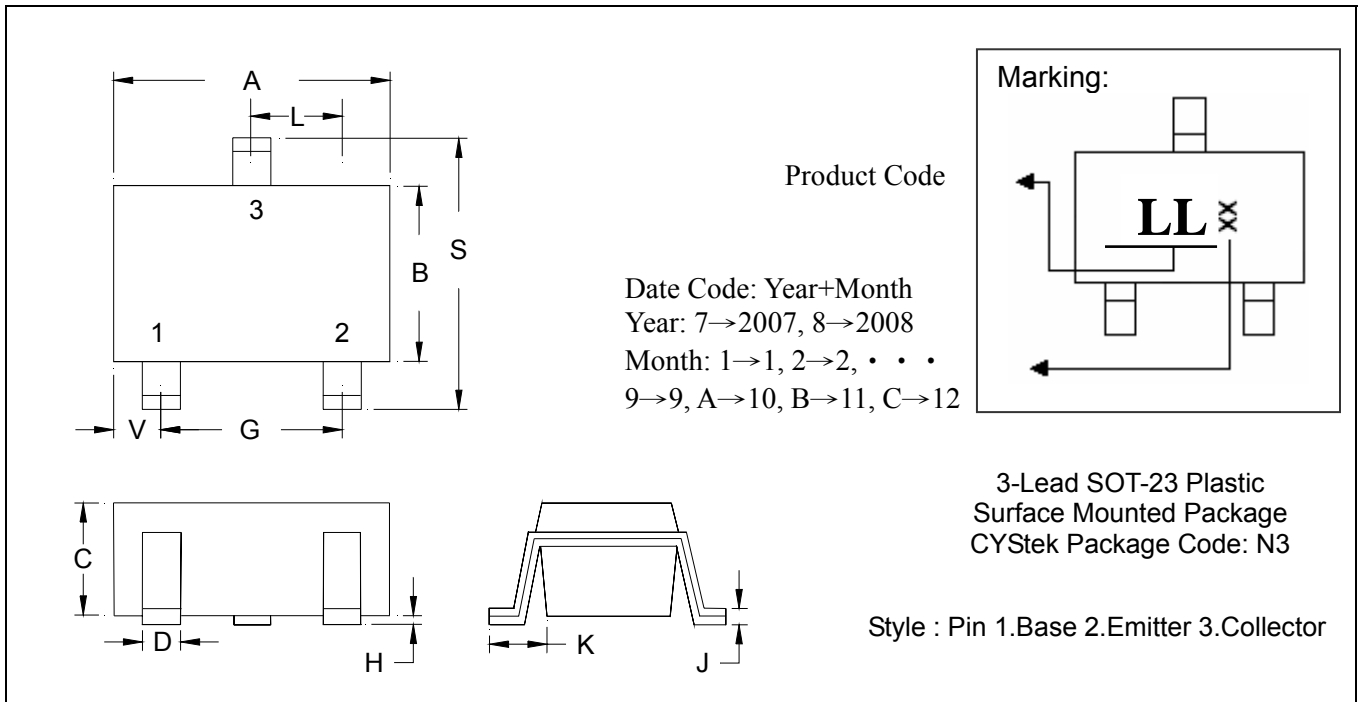
Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmmax 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 (Tl)	183°C	217°C
- Time (tl)	60-150 seconds	60-150 seconds
Peak Temperature(Tp)	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-23 Dimension



*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1204	2.80	3.04	J	0.0031	0.0071	0.08	0.18
B	0.0472	0.0630	1.20	1.60	K	0.0128	0.0266	0.32	0.67
C	0.0335	0.0512	0.89	1.30	L	0.0335	0.0453	0.85	1.15
D	0.0118	0.0197	0.30	0.50	S	0.0830	0.1161	2.10	2.95
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
H	0.0005	0.0040	0.013	0.10					

- 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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