

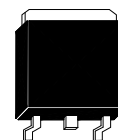


HJ112

NPN EPITAXIAL PLANAR TRANSISTOR

Description

The HJ112 is designed for use in general purpose amplifier and low-speed switching applications.



TO-252

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

- Maximum Temperatures
Storage Temperature $-55 \sim +150^{\circ}\text{C}$
Junction Temperature 150°C Maximum
- Maximum Power Dissipation
Total Power Dissipation ($T_C=25^{\circ}\text{C}$) 20 W
- Maximum Voltages and Currents ($T_A=25^{\circ}\text{C}$)
 V_{CBO} Collector to Base Voltage 100 V
 V_{CEO} Collector to Emitter Voltage 100 V
 V_{EBO} Emitter to Base Voltage 5 V
 I_C Collector Current 4 A

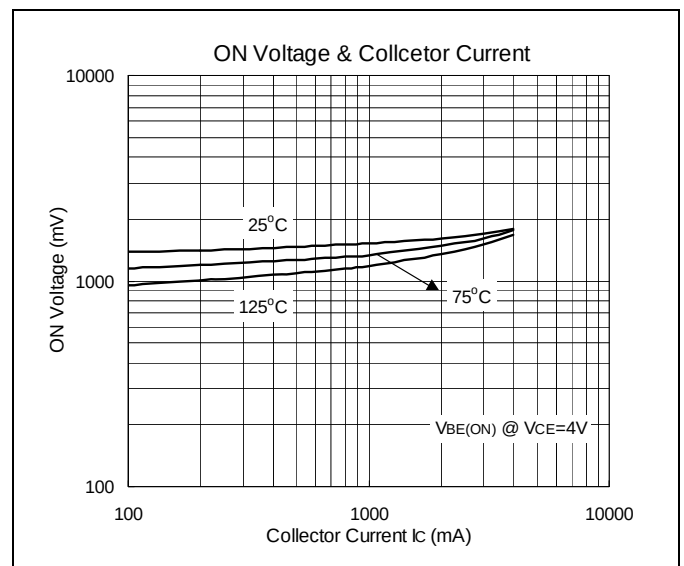
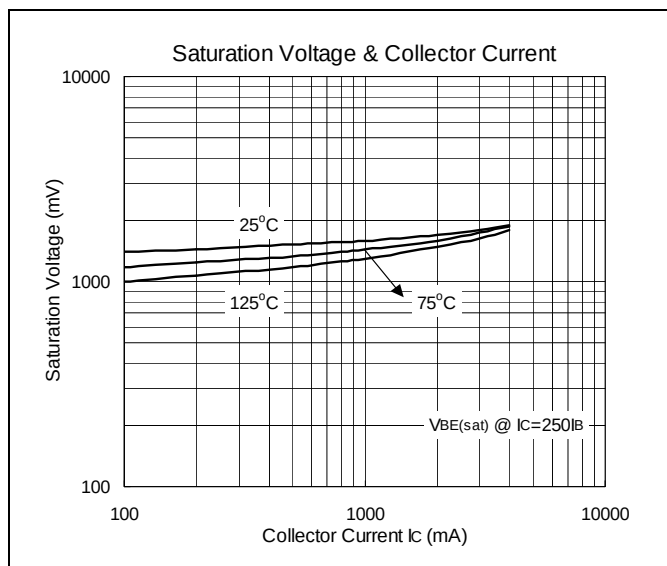
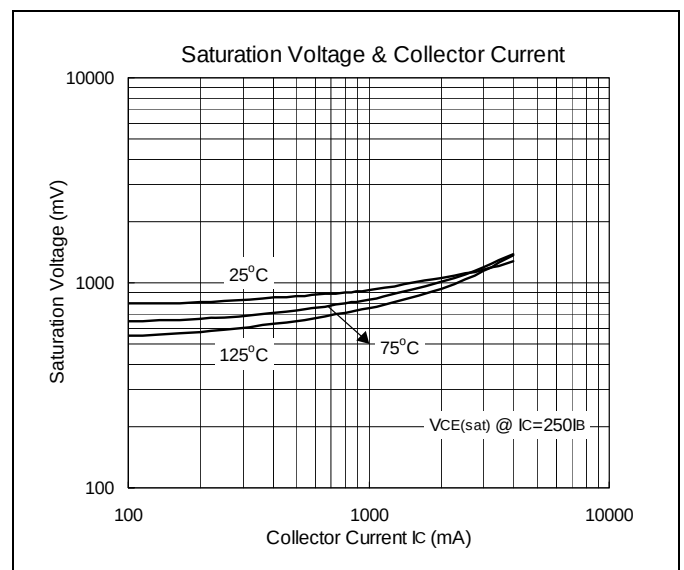
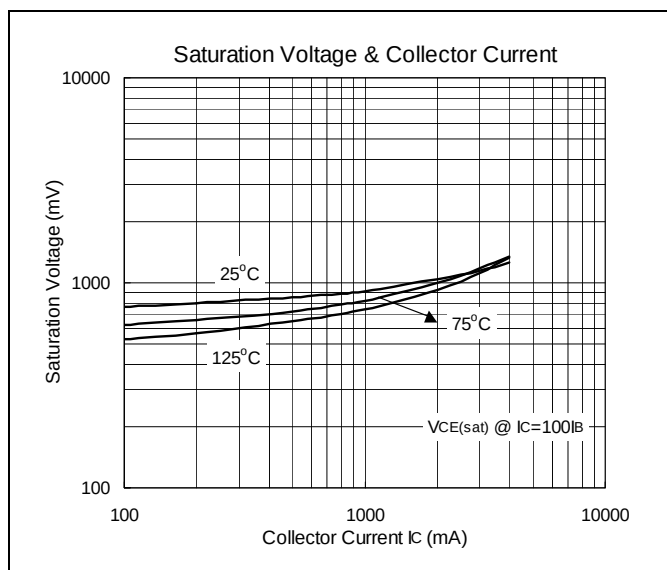
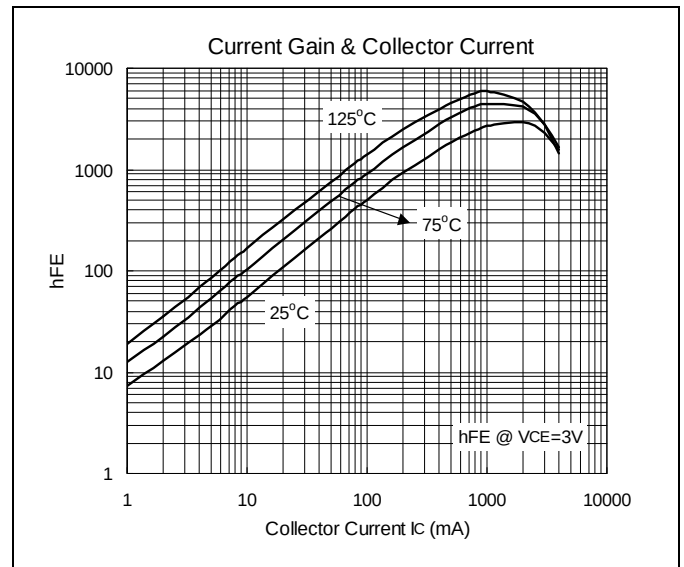
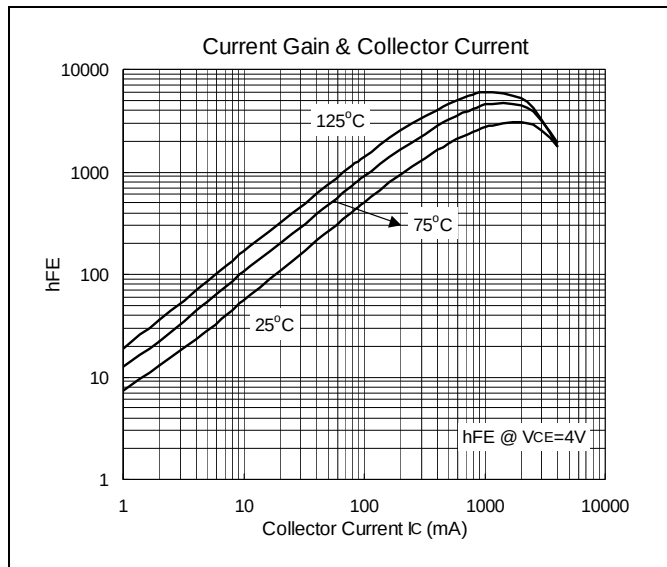
Electrical Characteristics ($T_A=25^{\circ}\text{C}$)

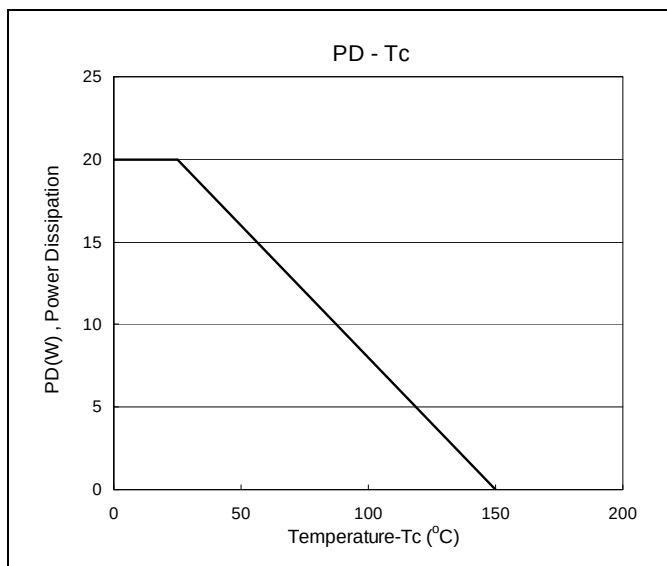
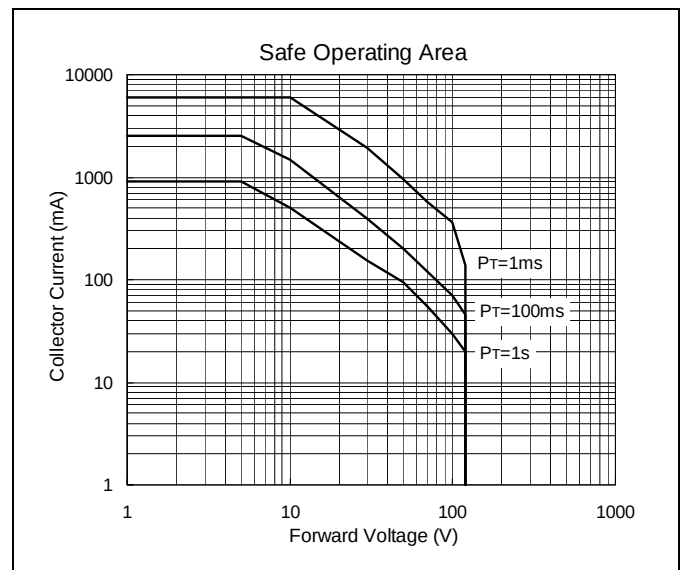
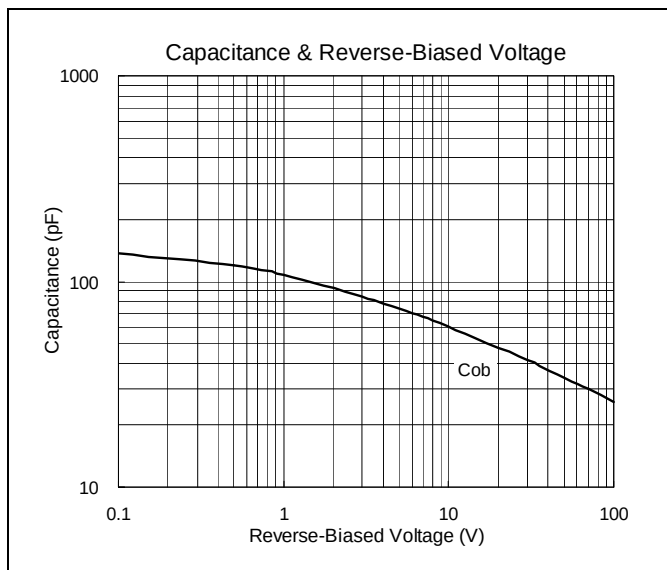
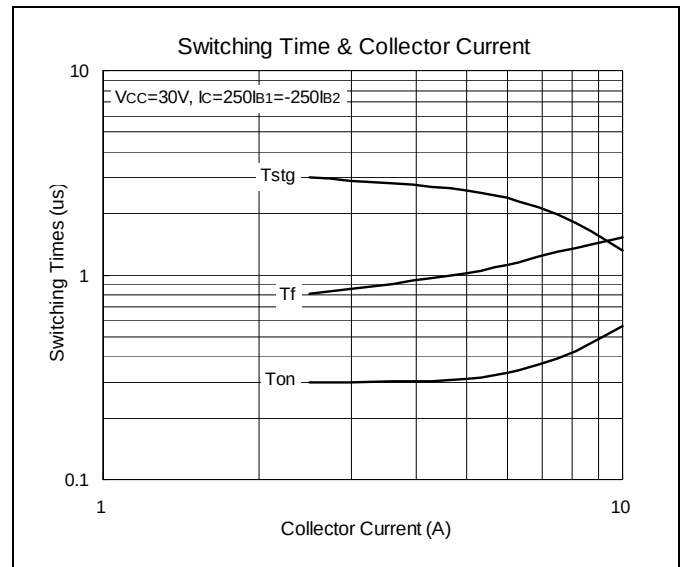
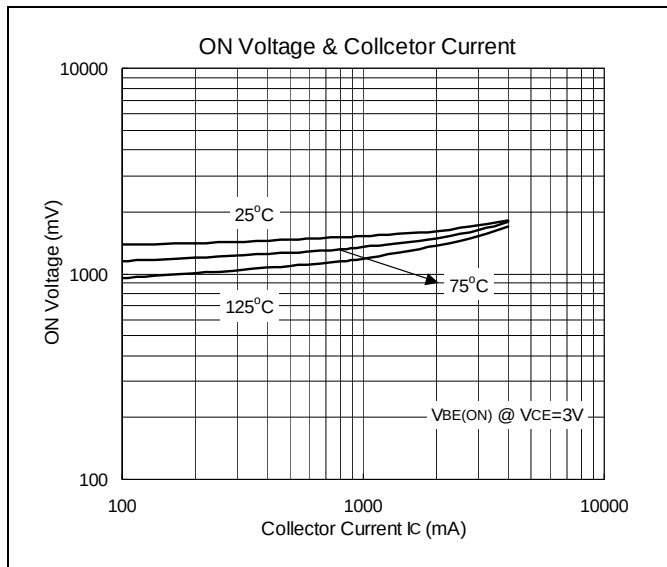
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	100	-	-	V	$I_C=1\text{mA}$
BV_{CEO}	100	-	-	V	$I_C=30\text{mA}$
I_{CBO}	-	-	10	μA	$V_{CB}=80\text{V}$
I_{CEO}	-	-	20	μA	$V_{CE}=50\text{V}$
I_{EBO}	-	-	2	mA	$V_{EB}=5\text{V}$
$*V_{CE(sat)1}$	-	-	2.5	V	$I_C=2\text{A}, I_B=8\text{mA}$
$*V_{BE(on)}$	-	-	2.8	V	$I_C=2\text{A}, V_{CE}=3\text{V}$
$*h_{FE1}$	500	-	-		$I_C=0.5\text{A}, V_{CE}=3\text{V}$
$*h_{FE2}$	1	-	12	K	$I_C=2\text{A}, V_{CE}=3\text{V}$
$*h_{FE3}$	200	-	-		$I_C=4\text{A}, V_{CE}=3\text{V}$
Cob	-	-	100	pF	$V_{CB}=10\text{V}$

*Pulse Test: Pulse Width $\leq 380\mu\text{s}$, Duty Cycle $\leq 2\%$



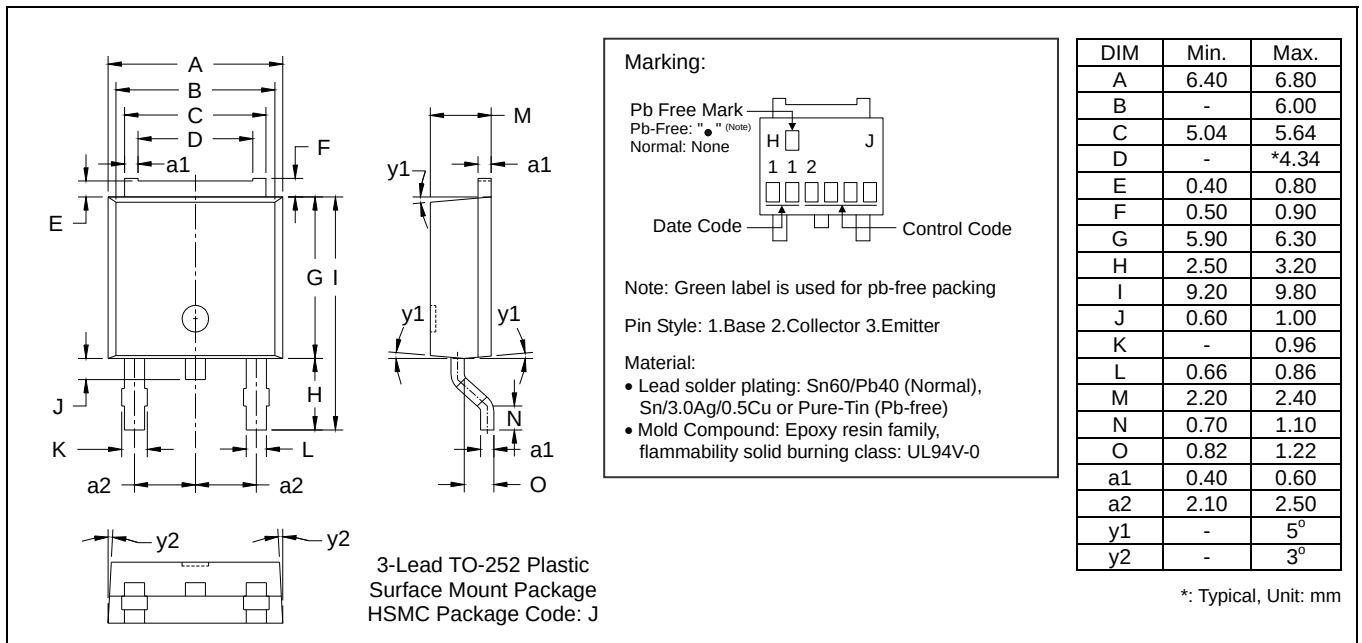
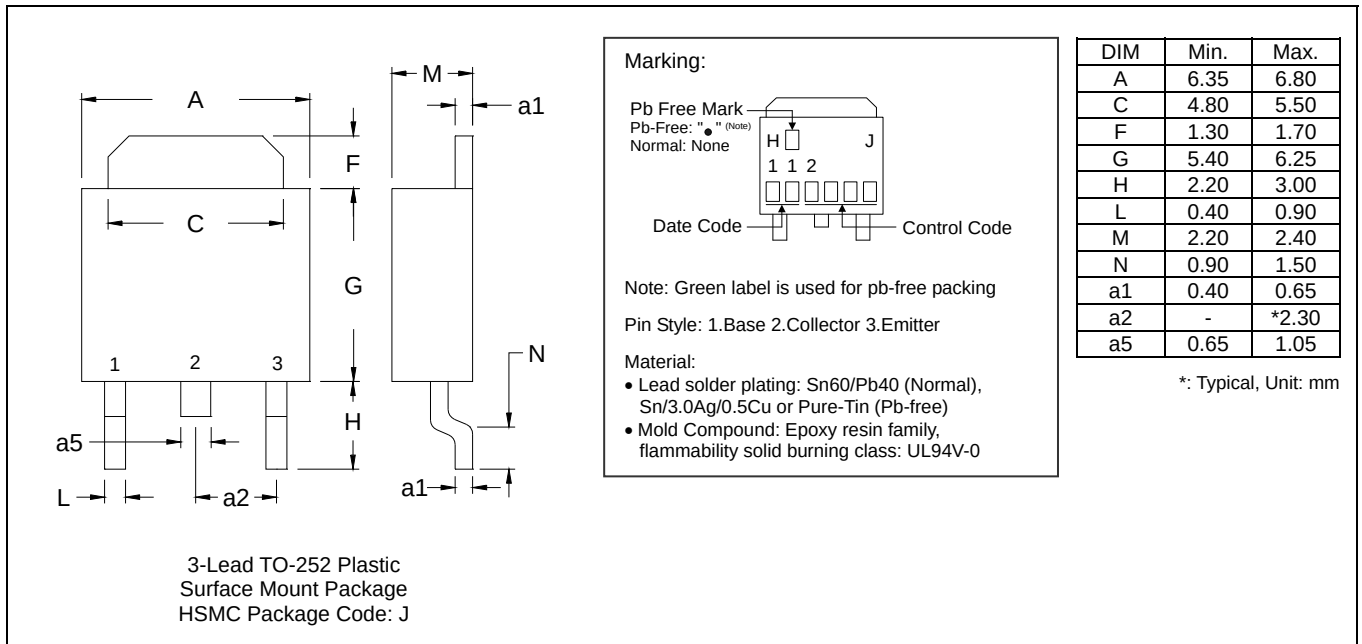
Characteristics Curve







TO-252 Dimension



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Head Office And Factory:

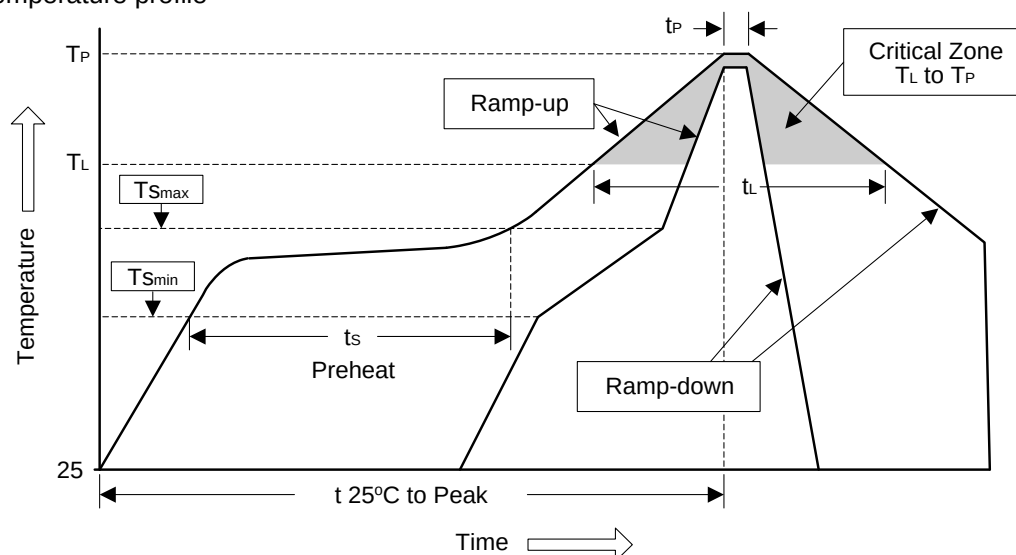
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Soldering Methods for HSMC's Products

1. Storage environment: Temperature=10°C~35°C Humidity=65%±15%
2. Reflow soldering of surface-mount devices

Figure 1: Temperature profile



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	$<3^{\circ}\text{C}/\text{sec}$	$<3^{\circ}\text{C}/\text{sec}$
Preheat		
- Temperature Min (T_{smin})	100°C	150°C
- Temperature Max (T_{smax})	150°C	200°C
- Time (min to max) (t_s)	60~120 sec	60~180 sec
T_{smax} to T_L		
- Ramp-up Rate	$<3^{\circ}\text{C}/\text{sec}$	$<3^{\circ}\text{C}/\text{sec}$
Time maintained above:		
- Temperature (T_L)	183°C	217°C
- Time (t_L)	60~150 sec	60~150 sec
Peak Temperature (T_P)	240°C +0/-5°C	260°C +0/-5°C
Time within 5°C of actual Peak Temperature (t_P)	10~30 sec	20~40 sec
Ramp-down Rate	$<6^{\circ}\text{C}/\text{sec}$	$<6^{\circ}\text{C}/\text{sec}$
Time 25°C to Peak Temperature	<6 minutes	<8 minutes

3. Flow (wave) soldering (solder dipping)

Products	Peak temperature	Dipping time
Pb devices.	245°C ±5°C	10sec ±1sec
Pb-Free devices.	260°C ±5°C	10sec ±1sec