

Condition of soldering for  
Surface mount type Transistors  
Lead free paste  
(Sn-3Ag-0.5Cu) version

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## Surface mount type Transistors

### ● Recommended condition of reflow soldering

Item	Recommended conditions
Peak Temperature	260°C Max.
Peak Time	Within 10s
Main Heat Temperature	220°C
Main Heat Time	Within 60s
Pre Heat Temperature	150°C to 180°C
Pre Heat Time	50 to 180s
Time	2 Times

Temperature : Surface temperature of package

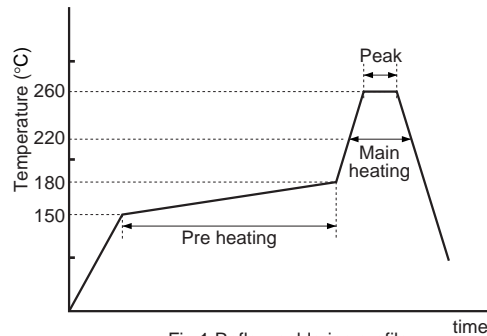


Fig.1 Reflow soldering profile

### ● Recommended condition of flow soldering

Item	Recommended conditions
Soldering Temperature	265°C Max.
Soldering Time	Within 10s
$\Delta T$ (Temperature tolerance)	150°C Max.

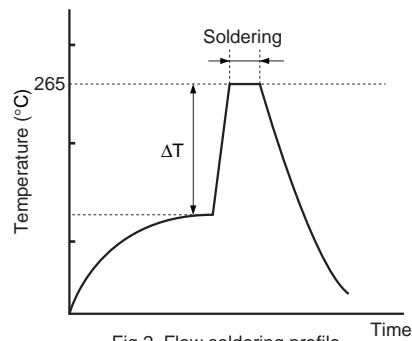


Fig.2 Flow soldering profile

### ● Condition of hand soldering

Temperature	refer to right table
Time	less than 3s
Times	one time

Temperature differ from package

Less than 400°C : for below package  
SMT3 (except 2SB1051K)  
SMT5, SMT6, UMT3, UMT5, UMT6, EMT3,  
VMT3, EMT5, EMT6, SST3

Less than 350°C : for below package  
MPT3, CPT, SOP8, PSOP8, TSSOP8,  
TSMT3, TSMT5, TSMT6, SMT3(2SB1051K),  
TUMT3, TUMT5, TUMT6, LPTS

## Surface mount type Transistors

### ● Condition of heat-resistant

Item	Condition of heat-resistant
Peak Temperature	260°C Max.
Peak Time	Within 10s
Main Heat Temperature	220°C
Main Heat Time	Within 60s
Pre Heat Temperature	150°C to 180°C
Pre Heat Time	50 to 180s
Time	2 Times

Temperature : Surface temperature of package

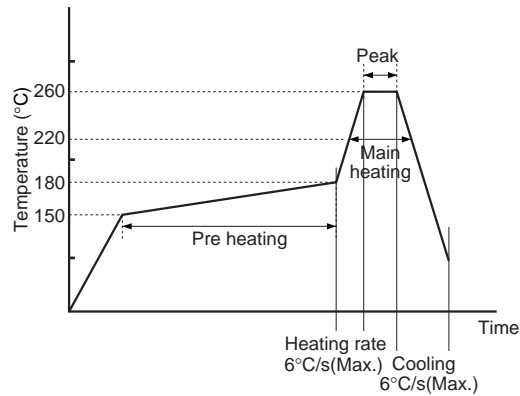


Fig.3 Reflow soldering profile

### ● Recommended condition of washing

#### 1. Washing liquid

washing liquid	manufacturers
water	—
ethanol	—
methanol	—
pine alpha ST-100S	ARAKAWA CHEMICAL
clean through 750H	KAO
technocare FRW-1	TOSHIBA TECHNOCARE
mighty solve AH-V	ASAHI GLASS

#### 2. Condition of washing

washing bath		time	temperature	remarks
first bath	ultrasonic bath	less than 60s	room temperature	25 to 28kHz, 15W / L
second bath	immersion bath	less than 60s	room temperature	
third bath	vaper bath *	less than 60s	less than 44.7°C	boiling points differ to washing liquid

\* In vaper bath, you can not use ethanol, methanol and water due to their high boiling points.

## Surface mount type Transistors

● Reference to copper plate area dimension on printed circuit board

PACKAGE	VMT3	PSOP8	PSOP8S	SOP8
EMT3(FLAT LEAD)	EMT5	EMT6	PSD	
UMT3	UMT5	UMT6	CPT3	
TUMT3	TUMT5	TUMT6	MPT3	
SMT3	SMT5	SMT6	SST3	
TSMT3	TSMT5	TSMT6	ICP-S	

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