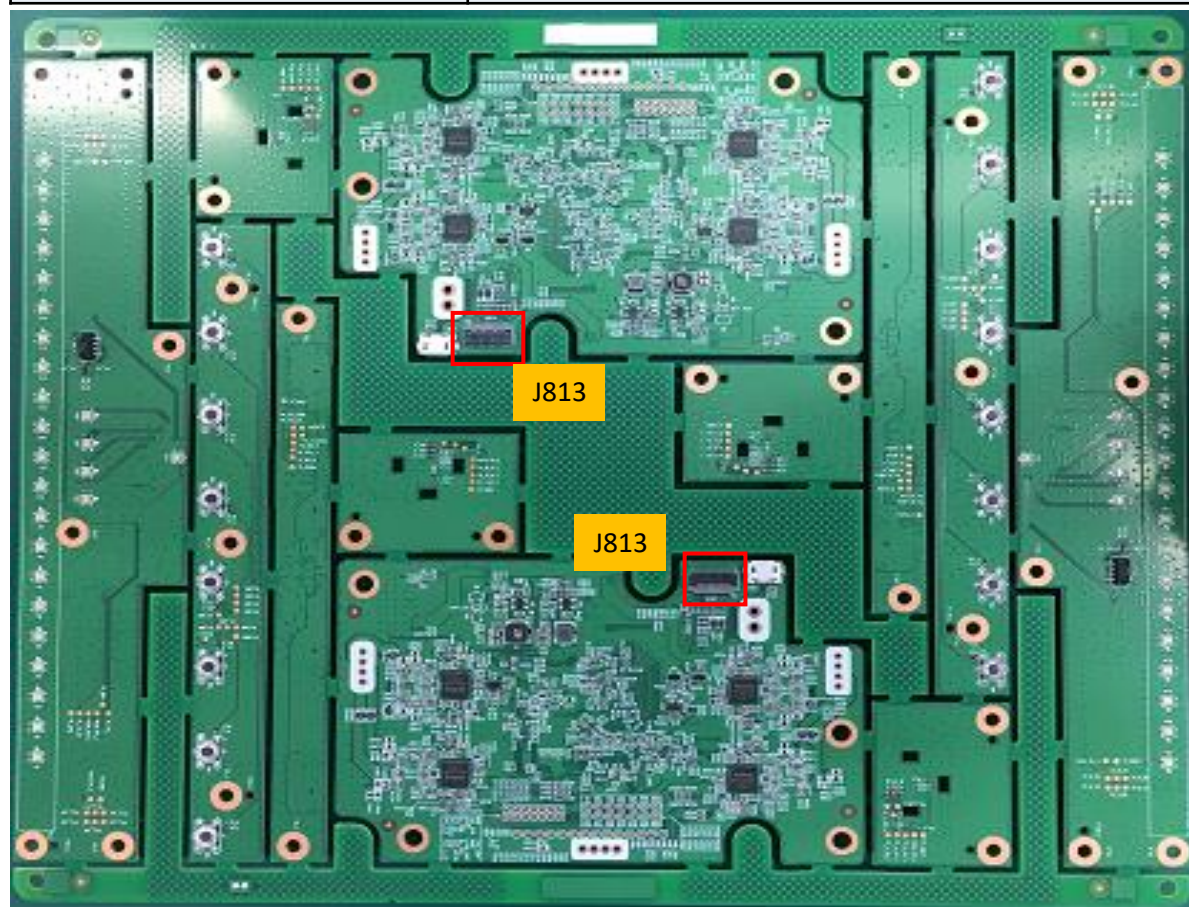


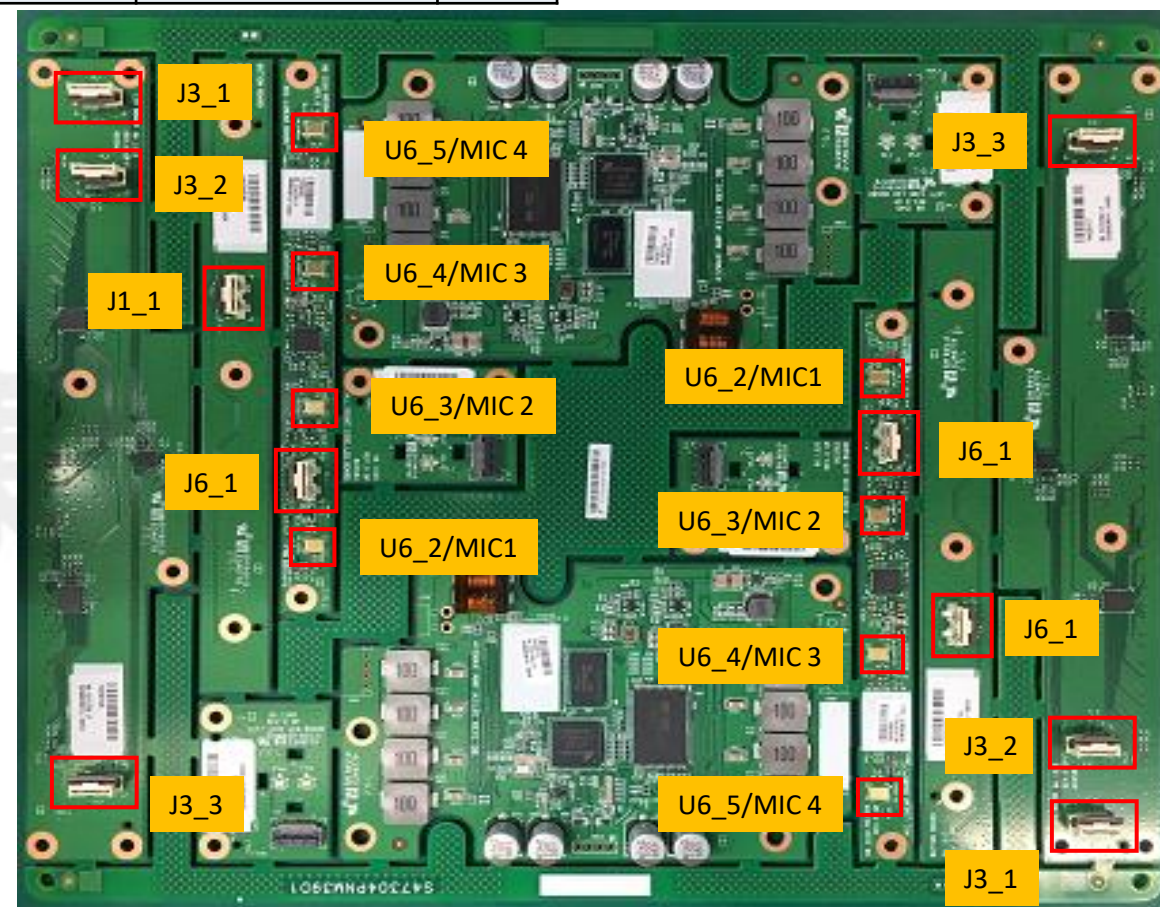
Key Component Resistant Temperature

JBD-VN-ME
2022/03/15

Location	Description	Peak Temp(°C)	Time(s)
U6_3/MIC2,U6_4/MIC3,U6_5/MIC4,U6_2/MIC1	MICROPHONE 2.3~3.6V 0.365mA 40+-1dB GP SPM0687LR5H-1	250 -> 260	10
J6_1,J3_3,J3_2,J3_1,J1_1	CONN FFC 15P 0.5mm SMD FEMALE RT GP	250	10
J813	CONN FFC 15PIN P=0.5mm SMD FEMALE RT GP	250	10



Bottom side

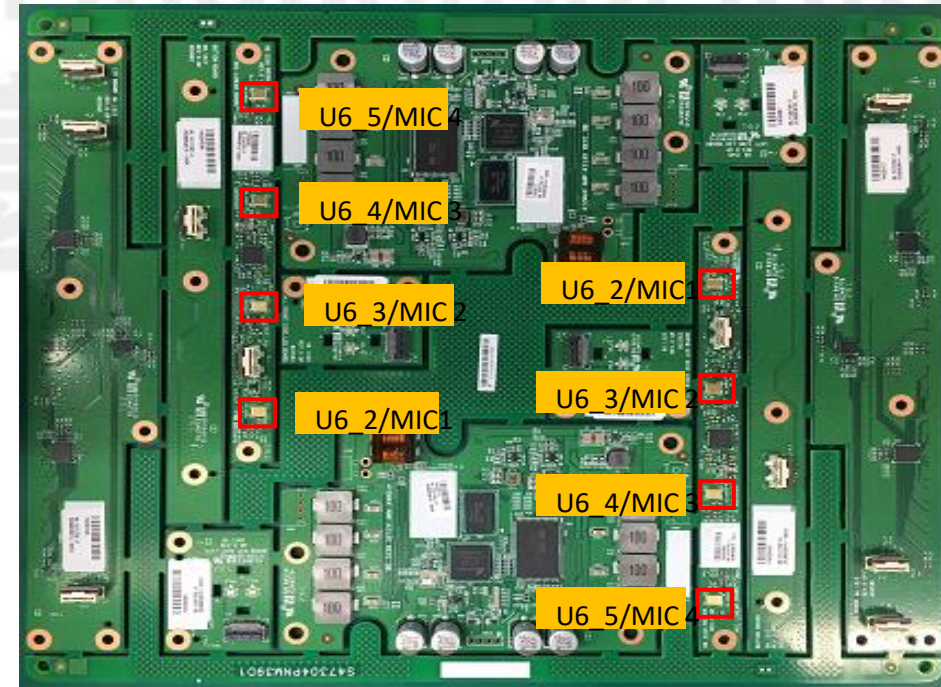
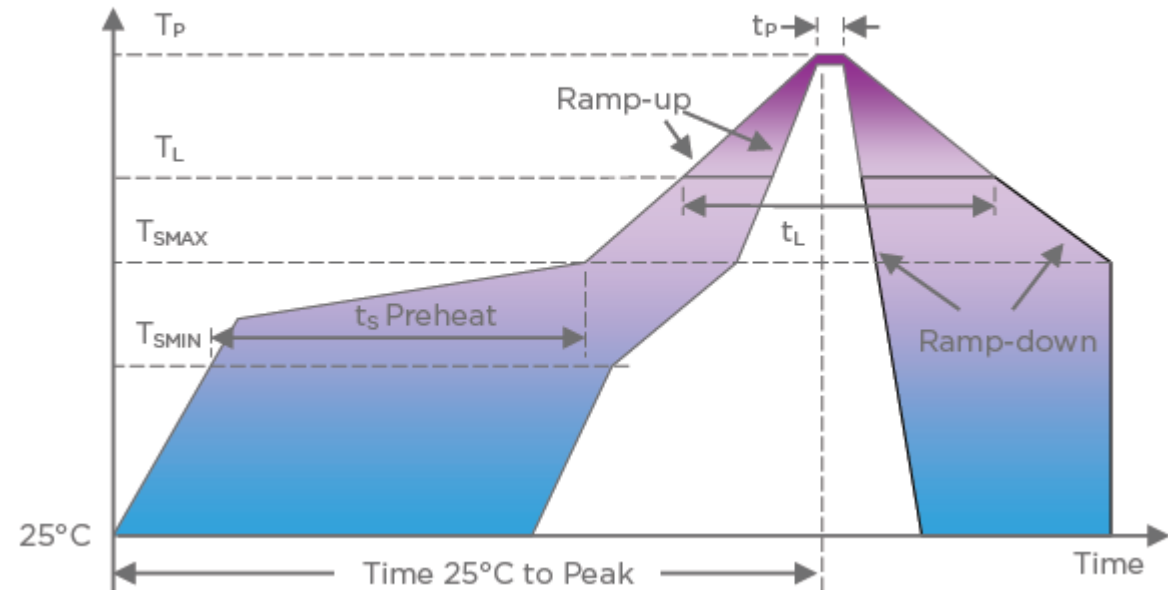


Top side

Summary: 96.1531T00 product get some location Peak Temp 250 (°C) as above MAP.

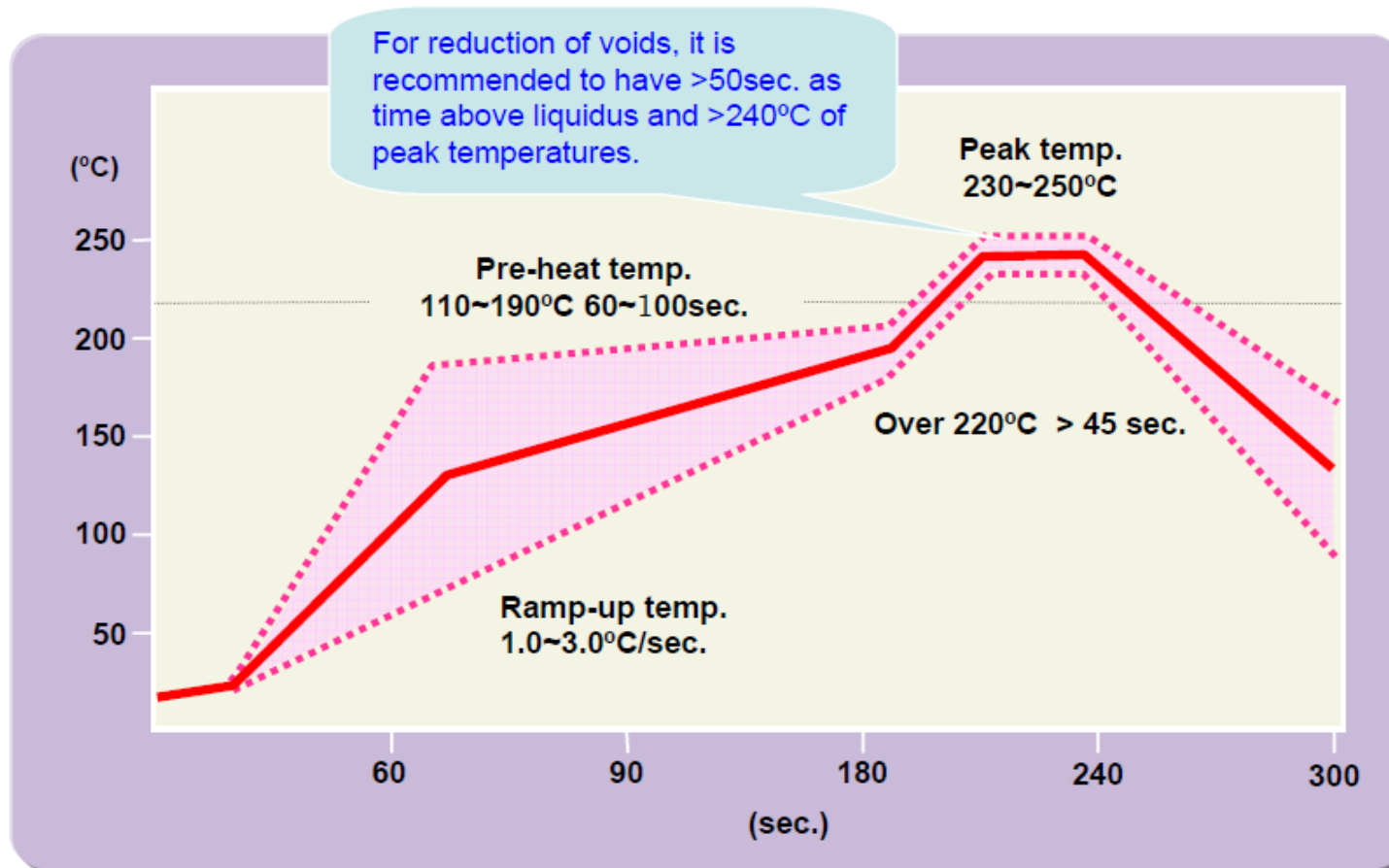
1. SiSonic™ microphones have gold-plated solder pads designed for use with lead-free solders.
2. The recommended solder stencil thickness range is 0.075 to 0.175mm. Stencil thickness can be used to help control solder volume and the reflow profile.
3. We recommend following the guidelines of the solder paste manufacturer. If multiple profiles are called out in the solder paste's technical specifications, we recommend using one with a more gradual pre-heat ramp (optimally $< 0.83^{\circ}\text{C}/\text{sec}$), provided this is compatible with all components on the board. This will help avoid solder splash, excessive voiding and flux contamination inside the microphone. This recommendation is shown as the "straight ramp" profile for the example profile in Figure 19.
4. The JEDEC standard calls out a 260°C peak temperature as a maximum for "users". Unless a 260°C peak temperature is necessary, we recommend using a lower temperature ($240\text{-}245^{\circ}\text{C}$). Implementing a lower peak temperature (eg. below $240\text{-}245^{\circ}\text{C}$) will lower the amount of voiding. Note that lower peak temperatures may require longer Time above Liquidus (T_L). Following the guidance provided by the solder paste manufacturer should yield the best results, though optimizations may still be needed as these recommendations are generally made as ranges.

Figure 18. IPC/JEDEC J-STD-020 Reflow Profile



Solder Paste: KOKI S3X58-M500

Handling guide - Recommended reflow profile



Excess pre-heating (time & temperature) may cause too much oxidation.

Relatively short and low pre-heat may be recommendable, especially for fine pitch/micro pattern components .

Summary: Our factory use Solder Paste: KOKI S3X58-M500 (591.00046.005) with Profile suggest as above table.

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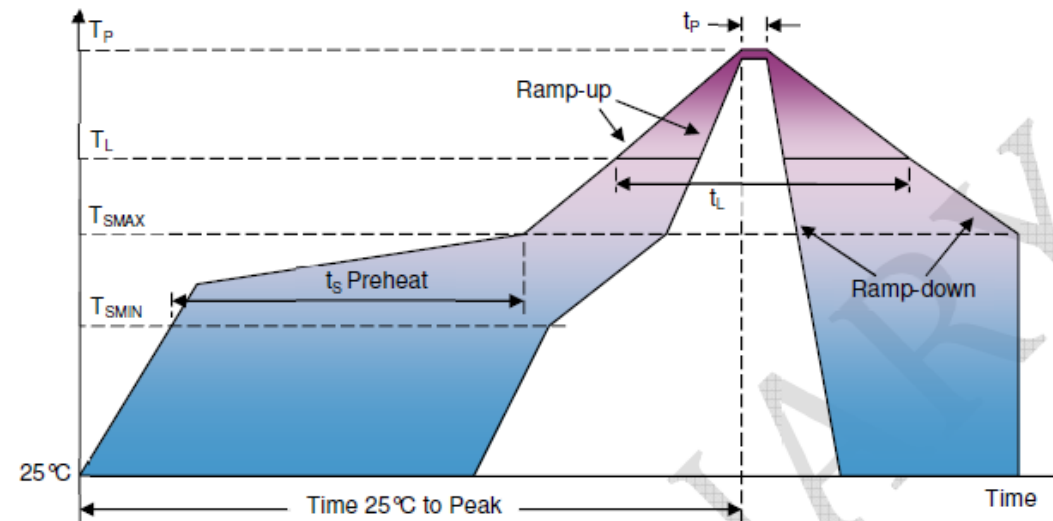
Summary:

Based on test history, the key of void on the MIC is that peak temperature is higher and preheat time is lower

Consider sub board components, profile 4 is better to reduce the Void on the mic,
As factory mentioned risk component is OK to apply under 250°C peak temperature.
This 250°C peak temperature and time is grantee from the vender

U6_3/MIC 2 J6_1,J3_3,J3_2,J3_1,J1_1 : MIC_SPH0687LR5H-1

Recommended Reflow Profile



Profile Feature	Pb-Free
Average Ramp-up rate (T_{SMAX} to T_P)	3°C/second max.
Preheat - Temperature Min (T_{SMIN}) - Temperature Max (T_{SMAX}) - Time (T_{SMIN} to T_{SMAX}) (t_S)	150°C 200°C 60-180 seconds
Time maintained above: - Temperature (T_L) - Time (t_L)	217°C 60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down rate (T_P to T_{SMAX})	6°C/second max
Time 25°C to Peak Temperature	8 minutes max

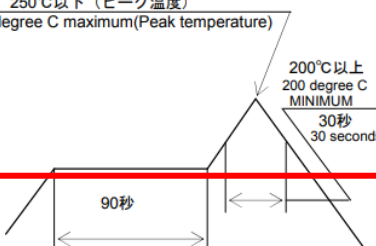
Notes: Based on IPC/JDEC J-STD-020 Revision C.
All temperatures refer to topside of the package, measured on the package body surface

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J813 SPEC FH41-15S-0.5SH(05)

RESISTANCE TO SOLDERING HEAT	1) REFLOW SOLDERING PEAK TMP. 250 °C MAX . REFLOW TMP. OVER 230 °C WITHIN 60 sec. 2) SOLDERING IRONS : TMP. 350±10°C FOR 5±1 sec .	NO DEFORMATION OF CASE OF EXCESSIVE LOOSENESS OF THE TERMINALS.	x	—
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J6_1,J3_3,J3_2,J3_1,J1_1 : 502231

項目 Item	条件 Test Condition	規格 Requirement
4-3-13 半田耐熱性 Resistance to Soldering- Heat	赤外線リフロー時 <u>INFRARED REFLOW METHOD</u> 赤外線リフロー条件 <u>INFRARED REFLOW CONDITION</u> 250°C以下 (ピーク温度) 250 degree C maximum(Peak temperature)  (予熱 : 150°C以下) (Preheat temperature : 150 degree C MAXIMUM) <u>温度条件グラフ</u> <u>TEMPERATURE CONDITION GRAPH</u> (基板表面温度) (TEMPERATURE ON BOARD PATTERN SIDE)	外 観 Appearance 端子ガタ 割れ等 異状無きこと No Damage