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## **LFS 218 NO-CLEAN SOLDER PASTE** **SAC 305 (Sn96.5/Ag3.0/Cu0.5)**

### **Description**

LFS 218 has been formulated to give manufacturers a wide process window with excellent printing and wetting properties.

LFS 218 gives bright, smooth and shiny solder joints with low, clear post process residues that make for reliable pin probe testing.

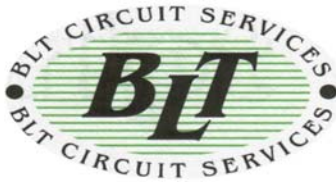
Other features include;

- Superior wetting and spreading characteristics
- Reduces or eliminates voiding, particularly under BGA's
- High resistance to slumping
- High humidity resistance
- High resistance to solder balling
- 24 hour stencil life
- 12 hour tack time
- 1 year refrigerated shelf life

### **Typical specifications and test results**

<b>Alloy</b>	96.5Sn,3.0Ag,0.5Cu
<b>Flux type and content</b>	11.0% RMA
<b>Particle size</b>	Type 4 (22-38 microns)
<b>Alloy melting temp</b>	217-219°C
<b>Telcordia GR-78 (Bellcore)</b>	
<b>Copper mirror</b>	Pass
<b>Halide</b>	Pass
<b>SIR (35°C/85%RH,4days)</b>	9.65E +12 ohms
<b>Electromigration</b>	1.57E + 10 ohms
<b>IPC-TM-650 2.6.3.3 (SIR)</b>	Pass

**OTHER ALLOYS AVAILABLE**      **LFS 219** 96.5Sn,3.0Ag,0.5Cu  
**IN THE LFS SERIES**



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## **Application**

Allow the solder paste to warm up to room temperature (at least 8 hours) before using for the first time. Stir with a spatula for at least 30 seconds to ensure homogenisation of paste. Apply sufficient paste to the stencil to allow a smooth even roll. A bead diameter of ½ to 5/8 inch is normally sufficient. Squeegees should be set at 60° for highest print definition. Pressure should be around about 0.28-0.33kg/sq cm, print speed 20-150mm/sec with 0.0mm snap-off distance (on contact).

Do not store new and used paste in the same container. Once a pot of paste has been opened, replace the internal plug, re-seal and store in a cool place out of direct sunlight. Do not return to fridge. Paste that has not been opened may be kept in the fridge (4°C) for up to 12 months.

## **Reflow**

The **LFS 218** paste can be reflowed using any of the two profile types i.e. RSS (Ramp-Soak-Spike) and Low Voiding Profile. Please refer to the Reflow Profile Supplement.

## **Equipment and circuit cleaning**

BLT manufactures a range of aqueous and solvent cleaning equipment for stencils and misprinted boards. **SCS/1** and **SCS/2** are particularly recommended for use with LFS series solder pastes.

Post cleaning is not necessary for LFS 218, but should absolute cleanliness be required, then **Aquasafe Super** or **Circuitwash 2000** are recommended.

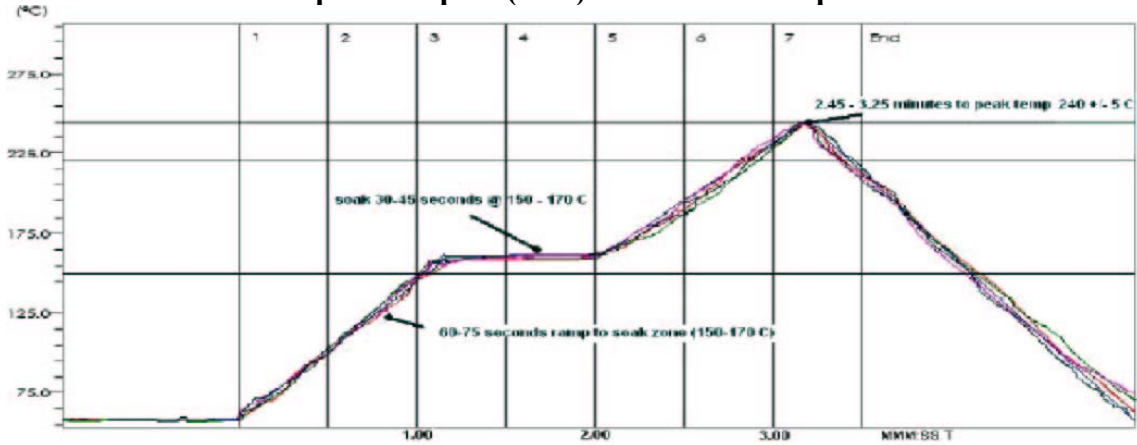
## **WARRANTY**

All reasonable endeavours have been made to ensure that the information contained in this data sheet is accurate, but it is submitted on the express condition that BLT Circuit Services Ltd shall not be under any liability of whatsoever nature, arising, suffered or incurred as a consequence of its use.



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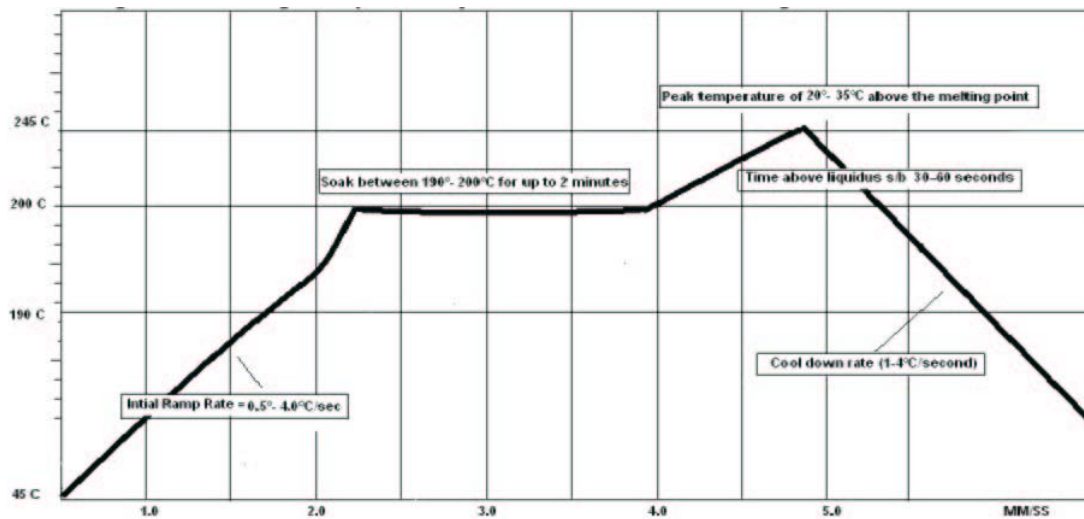
**Ramp-Soak-Spike (RSS): Recommended profile.**



**RSS Profile Guidelines**

- The typical initial rate of rise for the RSS profile should be no higher than 2°C/second.
- Ramp up to 150°C and then soak the assembly for 30 to 60 seconds.
- The soak zone should be controlled between 150-170°C. Above this point the paste will lose its activator.
- Proceed to spike immediately once the PCB has reached thermal stability.
- Peak temperature is 240°C ± 5°C.
- Time above liquidus is 45 ± 15 seconds.
- The total profile length should be between 2 ¾ - 3 ½ minutes from ambient to peak temperature.
- Cool down should be controlled within 4°C/second.

**Low-Voiding Profile: Designed specifically to eliminate/reduce voiding with BGA and CSP devices**





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**Profile Guidelines**

- The initial rate of rise is 0.5 to 4°C/second.
- Ramp up to 190°C and then soak the assembly between 190 to 200°C for up to 120 seconds.
- Proceed to spike immediately after exiting the soak zone.
- Peak temperature is 238 to 253°C.
- Time above liquidus is 30 to 60 seconds.
- The total profile length should be between 4½ - 5 minutes from ambient to peak temperature.
- Cool down should be controlled within 4°C/second.