NC259
SN100C

Solder plus Support

HALOGEN FREE

Lead-Free No Clean Solder Paste

Features:

- Long Pause-to-Print Capabilities
- Reduces Voiding
- Consistent Solder Volume Transfer
- ROL0 per J-STD-004B
- Enhances Fine Print Definition
- Eliminates Head-in-Pillow Defects
- Extremely Low Residues
- REACH Compliant

Description:

NC259 is a low-cost, lead-free halogen-free solder paste that offers the performance of tin-lead and high-silver lead-free solder pastes. Now manufacturers can attain the SMT soldering results they require and pay significantly less per gram than with traditional lead-free solder pastes. NC259 provides excellent print definition and sustainable solder volume transfer as the demand for smaller pads grows. Proven to mitigate head-in-pillow defects, NC259 reduces rework and rejected board costs to the manufacturer. NC259 is formulated to provide one of the longest pause-to-print windows in the industry resulting in less solder waste, fewer restart costs and improved overall quality of prints. The long stencil life and shelf-life results in far less waste than traditional solder pastes. The extremely broad process window of NC259 allows assemblers with high density, high mix boards to run without timely set up. NC259 also offers extremely low post process residues, which remain crystal clear after soldering.

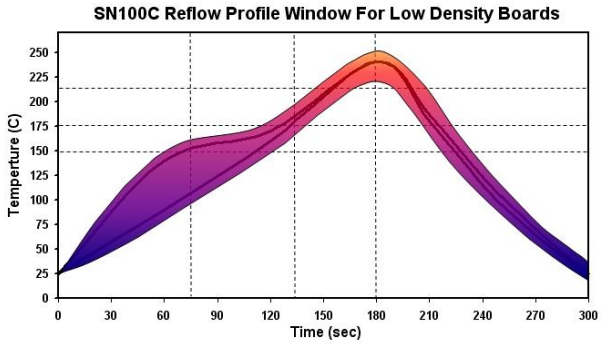
Printing:

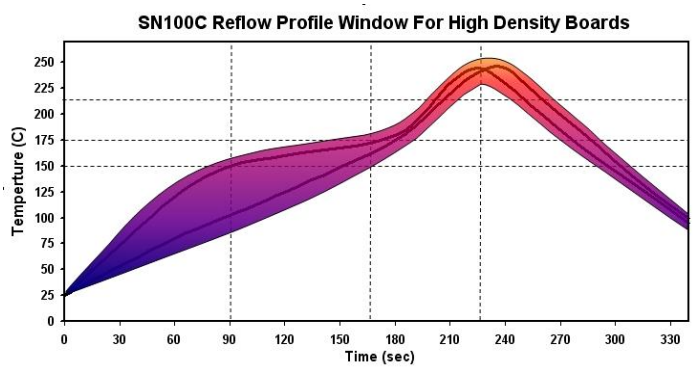
- Apply sufficient paste to the stencil to allow a smooth, even roll during the print cycle (a bead diameter of 12 to 16 mm (½ to ⅝ inch) is normally sufficient to begin).
- Apply small amounts of fresh solder paste to the stencil at controlled intervals to maintain paste chemistry and workable properties.
- NC259 provides the necessary tack time and force for today's high speed placement equipment, which will enhance product performance and reliability.
- Cleaning of your stencil will vary by application; however, it can be accomplished using AIM DJAW-10 stencil cleaner.

RECOMMENDED INITIAL PRINTER SETTINGS BELOW ARE DEPENDENT ON PCB AND PAD DESIGN			
PARAMETER	*RECOMMENDED INITIAL SETTINGS*	*PARAMETER*	*RECOMMENDED INITIAL SETTINGS*
Squeegee Pressure	0.9 - 1.5 lbs/inch of blade	PCB Separation Distance	0.75 - 2.0 mm (.030-.080")
Squeegee Speed	0.5 - 6 inches/second	PCB Separation Speed	3.0 - 20.00 mm/second
Snap-off Distance	On Contact 0.00 mm (0.00")		

Reflow Profile:

Below are general guidelines for a Ramp-to Spike (RTS) and a Ramp-Soak-Spike (RSS). Key differences are time to peak temperatures, and time above liquidus (TAL). The shorter profile is appropriate for low-medium thermal mass assemblies. The longer profile would apply to high mass assemblies, such as backplanes and high-thermal density boards. The extended time and temperature of an RSS profile are needed to minimize the ΔT of a high mass board. The shaded area defines the process window for NC259. Oven characteristics, board mass/density, component type and IPC Acceptance Class all influence the final profile settings. These profiles are general guidelines and profile measurements with properly attached thermo-couples are highly recommended. For processing assistance, please contact AIM Technical Support by visiting http://www.aimsolder.com/technical-support-contacts.





RATE OF RISE 2°C / SEC MAX	*RAMP TO 150°C (302°F)*	*PROGRESS THROUGH 150°C-175°C (302°F-347°F)*	*TO PEAK TEMP 235°C-255°C (455°F-492°F)*	*TIME ABOVE 227°C (442°F)*	*COOLDOWN ≤ 4 °C / SEC*	*PROFILE LENGTH AMBIENT TO COOL DOWN*
Short Profiles	≤ 75 Sec	30-60 Sec	45-75 Sec	30-60 Sec	45± 15 Sec	2.75-3.5 Min
Long Profiles	≤ 90 Sec	60-90 Sec	45-75 Sec	60-90 Sec	45± 15 Sec	4.5-5.0 Min

Cleaning:

- Cleaning NC259 is not required; however, it can be cleaned if necessary with saponified water or an appropriate solvent cleaner.
- Please contact AIM Technical Support for specific cleaner compatibility test results at http://www.aimsolder.com/technical-support-contacts.

Handling and Storage:

- NC259 is best used within 9 months at 4° C-12° C (40° F-55° F).
- Allow the solder paste to warm up completely and naturally to ambient temperature (8 hrs.) prior to breaking the seal for use.
- Manually mix the product lightly and thoroughly (1-2 minutes max).
- Do not store new and used paste in the same container
- Reseal any opened containers while not in use.
- Replace the internal plug and cap of the 500 gram jars to minimize exposure of the unused paste to the atmosphere.
- Visit http://www.aimsolder.com/services/applications-advice for detailed paste handling instructions.

Physical Properties:

ITEM	*SPECIFICATION*
Appearance	Gray, Smooth, Creamy
Alloy	SN100C
Melting Point	227° C
Particle Size	T3 , T4, T5
Viscosity	Per J-STD-005 IPC TM 650 2.4.34
Packaging	Available in all industry standard packaging.

Test Data Summary:

CLASSIFICATION			
Product Name	IPC Classification to J-STD-004B		
NC259	ROL0		
POWDER TESTING			
No.	Item	Results	Test Method
1	Powder Size	Type 3 – 45-25 micron Type 4 – 38-20 micron	IPC TM 650 2.2.14
2	Powder Shape	Spherical	Microscope
FLUX MEDIUM TESTING			
No.	Item	Results	Test Method
1	Acid Value	145 +/- 4 mg KOH/ g flux	J-STD-004B IPC TM 650 2.3.13
2	Quantitative Halides	Silver Chromate Paper - Pass	J-STD-004B IPC TM 650 2.3.28.1
3	Qualitative Halides, Fluoride Spot	No fluoride	J-STD-004B IPC TM 650 2.3.35.1
4	Corrosivity Test/ Copper Mirror	Low	J-STD-004B IPC TM 650 2.3.32
5	Corrosion Flux	Pass	J-STD-004B IPC TM 650 2.6.15
6	Surface Insulation Resistance	Pass – See AIM Qualification Test Report	J-STD-004B IPC TM 650 2.6.3.7
7	Oxygen Bomb	Bromine 613 mg/Kg Chlorine <125 mg/Kg	EN 14582:2007 SW 9056 SW 5050
VISCOSITY TESTING			
No.	Item	Results	Test Method
1	T-Bar Spindle Test Method	900 ± 10% kcps	J-STD-005 IPC TM 650 2.4.34
SOLDER PASTE TESTING			
No.	Item	Results	Test Method
1	Tack Test	37.9 g	J-STD-005 IPC TM 650 2.4.44
2	Tack Test	94.8 g	JIS Z 3284 Annex 9
3	Solder Ball Test	Pass	J-STD-005 IPC TM 650 2.4.43
4	Wetting Test	Pass	J-STD-005 IPC TM 650 2.4.45
5	Paste Shelf Life	4°C (39°F) = 9 months	AIM TM 125-11
6	Solder Paste Slump Test	Pass	J-STD-005 IPC TM 650 2.4.35