Product Data Sheet

SM950-M305-D-885

DBC Paste for IGBT

Product Description

SM950-M305-D-885 is a lead-free, no-clean, no-splatter solder paste specially designed for DBC (Directly-Bonded Copper) in IGBT components. SM950-M305-D-885 has a wide print process window and bestows repeatable print deposits. It confers superb wetting on Ni-plate and Cu OSP in nitrogen, Void contents are <3% when reflowed in a vacuum oven. SM950-M305-D-885 bestows very low residue that remains close to the solder joint. Post-soldered residues can remain on the component. If desired, they can be removed using a standard cleaner and ultrasonic energy.

SM950-M305-D-885 has been optimised to have an unbeatable list of benefits, some are:

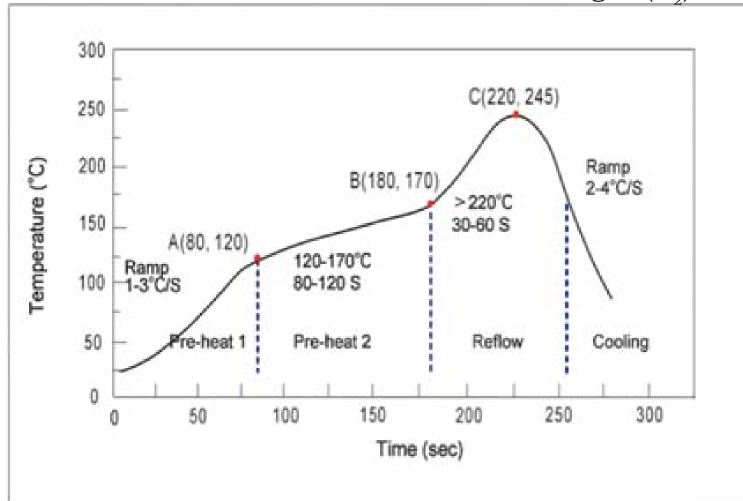
- Halogen-free (ROL0) flux system – no issue with reliability.
- Trouble-free printing – good reproducibility of print deposits.
- Stable formulation – no paste drying on the stencil after 16 hours of printing.
- No spatter – no staining of component.
- Fast wetting – no satellites and low void content.
- Cosmetically clean appearance – ultra low residue.
- Full pad coverage – high joint reliability.
- No-clean formulation – if desired, residue can be removed with standard cleaners with ultrasonic energy.

Specification (*Preliminary*)

Item	Result
Alloy	
Alloy Composition	Sn96.5/Ag3.0/Cu0.5
Melting Temperature Differential Scanning Calorimetry	217 - 220 °C
Powder Size IPC TM-650 2.2.14	20 – 38 µm, Type IV, Mesh Size -400 / +635
Paste Flux	
Flux Content IPC-TM-650 2.2.34.1	11.5 +/- 1.0 wt%
Halide Content JIS Z 3197 8.1.4.2.1	Not detected
Water Extract Resistivity JIS Z 3197 8.1.1	> 1 x 10^5 Ω-cm
Copper Mirror Test IPC-TM-650 2.3.32	Classified as “L”, Pass
Copper Corrosion Test IPC-TM-650 2.6.15	Pass
Flux Activity Classification IPC J-STD-004	ROL0
Solder Paste	
Viscosity JIS Z 3284 Annex 6	140 +/- 30 Pa.s
Surface Insulation Resistance (85°C, 85%RH, 168hrs) IPC-TM-650 2.6.3.3	> 1 x 10^8 Ω, Pass
Electromigration (85°C, 88.5%RH, 596hrs) IPC-TM-650 2.6.14.1	Pass

Recommended Reflow Profile

SM950-M305-D-885 can be reflowed in nitrogen (N_2) with the following profile:



Residue Removal

Post-soldered residue can be removed using most solvent cleaners.

Storage, Handling and Shelf Life

SM950-M305-D-885 can be stored at 2-8°C, and used within 6 months. SM950-M305-D-885 requires 4-6 hours to reach 25°C from storage (2-8°C). Jars can be kept at 25°C or less (away from a heat source) and should be consumed within 3 days.

Health and Safety

Do not handle the paste with your bare hand. Use proper tool when handling the paste. If the paste touches the skin, wash thoroughly with soap and water. For more information, please refer to Material Safety Data Sheet.

"All statements, information and recommendations contained in this catalog are based on data and test results which we consider, to the best of our knowledge and belief, to be reliable and informative to the users but the accuracy and completeness thereof is not guaranteed. No warranty, expressed or implied, statutory or otherwise, is given regarding the use of the information and products contained in this catalog since the conditions and suitability for use, handlings, storage or possession of the products are determined by the users and are therefore beyond our control. We shall not be liable in respect of any liabilities, losses (including consequential losses), damages, proceedings, costs, claims or injuries whatsoever sustained or suffered by the users (including any third parties) in connection with the use of the information, recommendation and the products contained in this catalog."

Singapore Asahi Chemical and Solder Industries Pte Ltd
47 Pandan Road Singapore 609288
Tel: +65 6262-1616 Fax: +65 6261-6311
Website: http://www.asahisolder.com Email: enquiry@sinasahi.com.sg