YINCAE® INNOVATION AT ITS BEST

YINCAE Advanced Materials, LLC
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SMT 138E Solder Joint Encapsulant Paste Product Datasheet

Excellent electrical conductivity
Eliminating contact resistance
Low temperature soldering

Description

SMT 138E solder joint encapsulant paste is a conductive, rapid cure, self-leveling and self-soldering adhesives, which has been designed for low temperature (138°C) Pb-free application. By comparison with conductive adhesives (Ag), SMT 138E solderable adhesive has higher stable electrical and thermal conductivity, outstanding reliability, and easily rework. By comparison with soldering materials, SMT 138E solderable adhesives eliminate the out gassing from soldering process, flux residue issue and soldering bleed. During the reflow process, Solder joint encapsulant adhesive removes metal oxide and encapsulates individual solder joints with enhancing solder joints to eliminate some drawbacks of underfilling (large CTE above Tg, trouble process control). The performance of the drop test has been improved by two orders of magnitude compared with that with the use of solder paste. The polymer network can be removed using methyl ethyl ketone (MEK) or heating.

Typical Physical Properties

Product Name	SMT 138E solder joint encapsulant paste
PROPERTIES OF UNCURED MATERIAL	
Alloy	Solderable Silver
Resin Type	Epoxy
Specific Gravity (ASTM D 1475-60)	7 – 8g/cc
Viscosity (ASTM D-1384)	50 – 100 kcp

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PROPERTIES OF CURED MATERIAL	
Tensile Strength (MPa)	56
C.T. E (ASTM E 831), PPM /°C	23.5
Young's modulus (GPa)	26.5
Electrical conductivity (μΩ/cm)	10 – 30
Extractable ions (MIL-STD-883E)	
Na+	<5ppm
K+	<5ppm
F-	<5ppm
Cl-	<10ppm
Surface insulation resistance (J-STD-004)	Pass

Reflow & Cure

SMT 138E is completely comparable with the current SMT assembly process and all kinds of pad surface finishes such as Ni/Au, Immersion Ag, OSP. It can be used in convection, conduction, infrared, or vapor phase soldering systems under air or nitrogen atmosphere. The time from ambient temperature to peak temperature should be 4 to 5 min with a peak temperature from 140°C to 190°C.

Storage & Shelf Life

6 months provided materials are kept in a sealed original container below – 20 °C. Storage beyond this period can produce higher viscosity. Protect from moisture, evaporation and foreign materials. Process ability of these products can be adversely affected by evaporation and contamination.

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Safety

SMT 138E is a friendly, non-toxic material. However, general hygiene practice is recommended when handling this material. For detailed information please consult our SDS.

Package

SMT 138E solder joint encapsulant pastes are available in 10cc and 30cc. Other packages are available depending upon customer's request. Contact YINCAE for order information.