

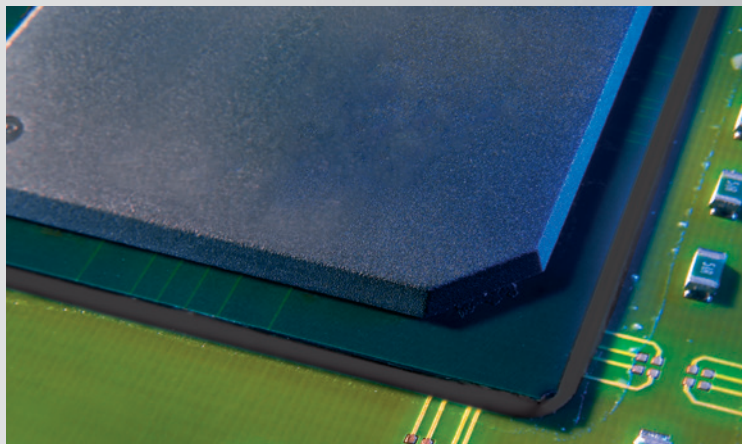


LOCTITE[®] ECCOBOND UF 3912

LOW-VISCOSITY, ONE-COMPONENT CAPILLARY UNDERFILL

Designed to protect the increasingly high-density and delicate interconnects of chip-scale packages (CSPs), wafer-level CSPs and flip chip devices on board, LOCTITE[®] ECCOBOND UF 3912 is a low-viscosity, one-component capillary underfill with fast, room-temperature flow capabilities for jetting and high-speed dispensing. Ideal for handheld applications where component damage from dropping is common, LOCTITE ECCOBOND UF 3912 underfill provides mechanical robustness for improved device reliability and long-term electrical functionality. The epoxy material has a high glass transition temperature (T_g) and a low coefficient of thermal expansion (CTE), which provide excellent thermal cycling reliability to ensure robust long-term performance. In addition, LOCTITE ECCOBOND UF 3912 underfill is reworkable, allowing manufacturers the ability to maintain assembly value.





KEY BENEFITS:

- Improves device reliability
- Excellent thermal cycling and thermal shock reliability
- Good drop resistance
- High T_g and low CTE
- Fast flow when preheated to 60 – 80°C, effectively filling intricate and delicate interconnects for robust protection
- Reworkable at temperatures greater than 225°C

TYPICAL APPLICATIONS:

- Handheld devices
- WLCSPs with high reliability concerns, such as PMUs
- Flip chip devices

PRODUCT PROPERTIES

Appearance	Black liquid	
Filler Loading	60%	
Cure Time and Temperature, DSC	> 7 min. at 160°C	
	> 10 min. at 150°C	
Viscosity at 25°C, Brookfield, 51/20 rpm (cP)	3,000	
Pot Life at 25°C (hr.)	24	
Glass Transition Temperature, T_g by TMA (°C)	130	
Coefficient of Thermal Expansion (ppm/°C)	Below T_g	27
	Above T_g	105
Storage Modulus, DMA (MPa)	at 25°C	8,100
	at 200°C	159
Halogen-Free	Yes	
Shelf Life at -40°C	6 months	
Substrate Temperature	60 – 80°C	

Across the Board,
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