EPO-TEK® E2082

Technical Data Sheet

For Reference Only

Electrically Conductive Epoxy (formerly EE2082)

Number of Components:	Two	Minimum Bond Line Cure Schedule*:	
Mix Ratio By Weight:	100:1.25	200°C	1 Minute
Specific Gravity:		180°C	15 Minutes
Part A	2.94	150°C	30 Minutes
Part B	1.04		
Pot Life:	15 Hours		
Shelf Life:	One year at room temperature		

*Note: Container(s) should be kept closed when not in use. For filled systems, mix the contents of Part A thoroughly before mixing the two parts together. *Please see Applications Note available on our website.*

Product Description:

EPO-TEK® E2082 is a two-component, silver filled, electrically and thermally conductive adhesive for semiconductor die attach, hybrid, electronics and optical applications. It is a two-component version of EPO-TEK® E3082.

EPO-TEK® E2082 Advantages & Application Notes:

- Low modulus adhesive suitable for large IC or substrate bonding yielding low stress.
- Its viscosity and pot-life are suitable for high volume dispensing applications. Stamping, screen printing, or manual methods can also be achieved.
- Suggested Applications:
  - Semiconductor:
    - die attach for JEDEC Level II and III packaging.
    - Bonding of chips as large as 300 mil x 300 mil.
    - Adhesion to Si, Ag, Cu and most lead-frame formats.
    - Versatility in cure; capable of in-line snap cure, as well as traditional box oven methods.
  - Hybrids:
    - Die bonding of GaAs and SMDs, with compatible adhesion to ceramic, Ag, Au, AgPd, kovar, brass, SST, glass.
    - High temperature hermetic packaging technology and processes.
  - PCB / Electronics:
    - COB die attach adhesive on FR4 or flex-PCB.
- It is a faster curing version of EPO-TEK® E3081. Contact techserv@epotek.com for your best recommendation.

Typical Properties: ***(To be used as a guide only, not as a specification. Data below is not guaranteed. Different batches, conditions and applications yield differing results; Cure condition: 200°C/1 hour ; * denotes test on lot acceptance basis)***

Physical Properties:	
***Color:** **Part A:** Silver **Part B:** Amber	**Weight Loss:**
***Consistency:** Smooth paste	**@ 200°C:** 0.07%
***Viscosity (@ 50 RPM/23°C):** 4,000 – 6,000 cPs	**@ 250°C:** 0.32%
Thixotropic Index: 4.78	**@ 300°C:** 0.81%
***Glass Transition Temp.(Tg):** ≥ 90°C (Dynamic Cure 20—200°C /ISO 25 Min; Ramp -10—200°C @ 20°C/Min)	**Operating Temp:** **Continuous:** - 55°C to 200°C **Intermittent:** - 55°C to 300°C
Coefficient of Thermal Expansion (CTE):	**Storage Modulus @ 23°C:** 234,625 psi
Below Tg: 40 x 10^{-6} in/in/°C	**Ions:** Cl^- 190 ppm
Above Tg: 174 x 10^{-6} in/in/°C	Na^+ 16 ppm
Shore D Hardness: 72	NH_4^+ 21 ppm
Lap Shear Strength @ 23°C: 1,384 psi	K^+ 6 ppm
Die Shear Strength @ 23°C: ≥ 5 Kg / 1,700 psi	***Particle Size:** ≤ 20 Microns
Degradation Temp. (TGA): 361°C	
Electrical Properties:	
***Volume Resistivity @ 23°C:** ≤ 0.0001 Ohm-cm	**Volume Resistivity @ 23°C (200°C/1 minute):** 0.00004 Ohm-cm
Thermal Properties:	
Thermal Conductivity: 2.8 W/mK	

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