EPOXIES
INNOVATIVE BONDING SOLUTIONS ETC.

TECHNICAL BULLETIN

50-3112
FAST CURING THERMALLY CONDUCTIVE EPOXY ADHESIVE

DESCRIPTION:

50-3112 is a two component fast curing thermally conductive epoxy adhesive. This product was specifically formulated for use in the convenient TriggerBond® dual barrel cartridge system.

50-3112 has a simple 1:1 mix ratio and develops a 1,400 psi Lap Shear strength (aluminum to aluminum) in four hours at room temperature. After just twenty four hours the strength is over 2,200 psi.

50-3112 offers fast heat dissipation for a wide range of electronic applications. The black resin and white hardener provide an excellent visual indication of a complete mix.

FEATURES:

- Fast room temperature cure
- Thermally conductive
- Packaged in TriggerBond® system
- Forms strong bonds to a variety of substrates
- Electrically insulating
- Vibration and impact resistant

TYPICAL PROPERTIES:

Color	
Resin	Black
Hardener	White
Mixed	Dark Gray
Viscosity, @25°C, cps	
Resin	70,000
Hardener	70,000
Specific Gravity, @25°C	
Resin	1.5
Hardener	1.5
Gel Time, 25°C, 15 grams	15 minutes
Durometer, Shore D	
@25°C	80
@70°C	50
Lapshear Strength (Al to Al), psi	
After 4 hours	1,413
After 24 hours	2,231

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Thermal Conductivity, W/m- °K	1.04
Dielectric Strength, V/mil	440
Dielectric Constant, 25°C, 100Hz	5.3
Volume Resistivity, ohm-cm, 25°C	2.4×10^{12}
Coefficient of Thermal Expansion, ppm/°C	
Below Tg	45
Above Tg	175
Operating Temperature, °C	-40 to +120

NOTES:

1) At room temperature, 50-3112 will reach handle cure within 1-2 hours. The lap shear strength is 1,413 psi after 4 hours.
2) This product is an adhesive and is not designed for potting and encapsulating applications. 50-3112 is a fast reacting epoxy system and it will create a high exothermic temperature in large mass sizes (avoid mass sizes greater than 25 grams).

INSTRUCTIONS FOR USE:

1) Surfaces must be clean and grease free. Use an oil free solvent such as acetone to wipe surfaces. Adhesion can be substantially increased by abrading the surfaces to be bonded with emery cloth, sand paper, carbide grinding tools, sand blasting, etc... A roughened, porous surface will produce the best results. Any oxidized metal films should be removed just prior to application of the epoxy adhesive mixture.
2) Dispense material from TriggerBond® cartridge. See TriggerBond® instruction sheet for specific guidance.
3) Apply mixed product to substrate to be bonded.
4) Join substrates within 3-5 minutes.
5) Cure according to one of the following schedules:
   - 25°C 2-4 hours
   - 65°C < 10 minutes

STORAGE, HANDLING AND AVAILABILITY:

50-3112 is available in the 1:1 TriggerBond® systems: 50mL, 200mL, and 400mL dual barrel cartridges. Expected shelf life is 12 months. Store in a cool, dry place in original containers.

Please read and understand the Safety Data Sheet (SDS) before using this product.

IMPORTANT:

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