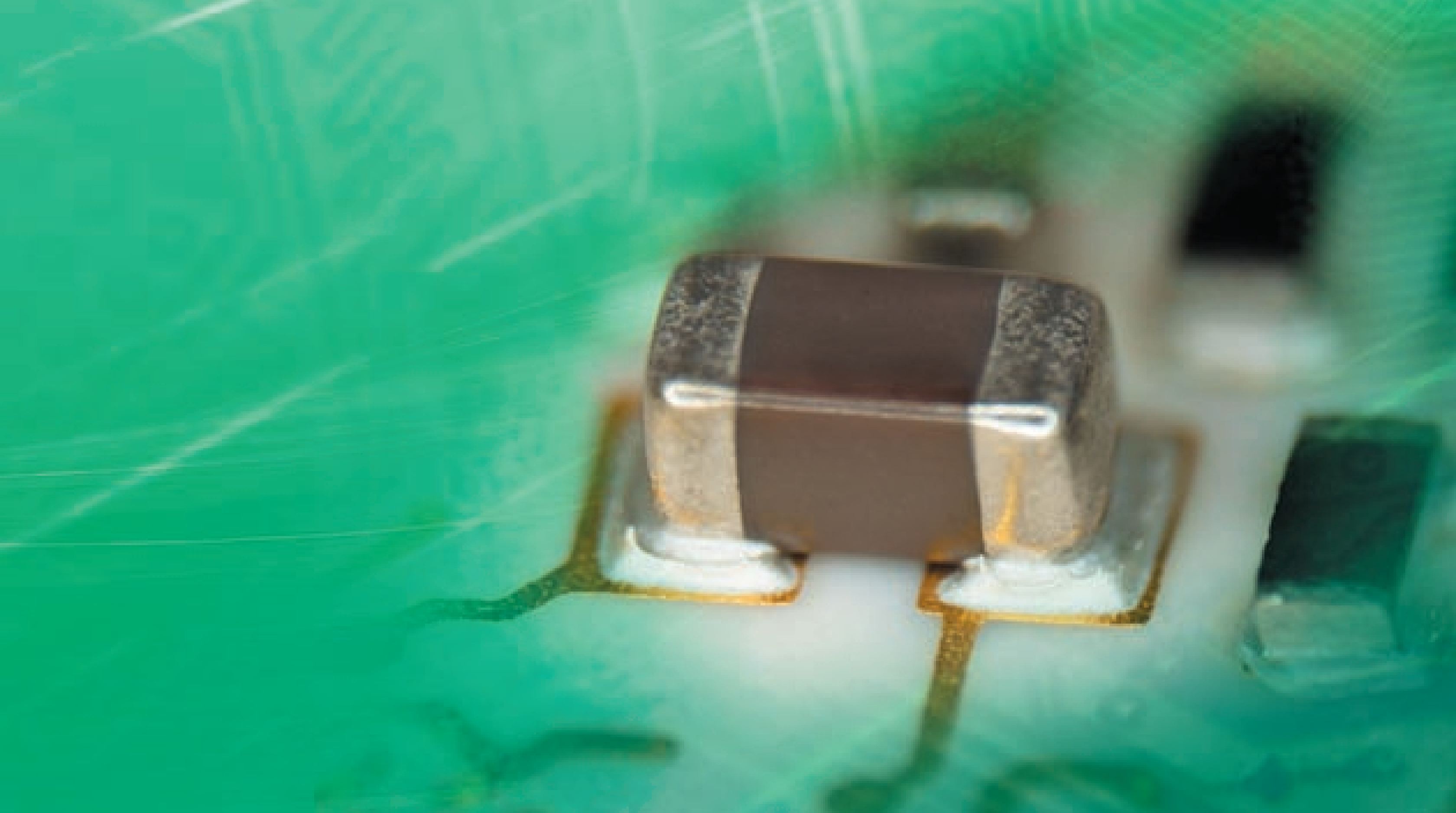
United
Adhesives

导电粘合剂
Electrically Conductive Adhesives



导电粘合剂 Electrically Conductive Adhesives

美国联合粘结剂公司提供两类导电胶 (ECA)，银填充的或镀银铜填充的硅胶 (Silductor系列), 和银填充的或镀银铜填充的环氧树脂 (Eposolder系列)。

它们有单组分，或双组分。这些粘合剂可用于点滴，模板或丝网印刷。

Silductor系列提供显著降低系统的热应力，同时保持高导电性和热导率。Eposolder系列提供了卓越的粘接强度，与常见的金属/合金表面形成良好的粘结，同时保持高导电性和热导率。

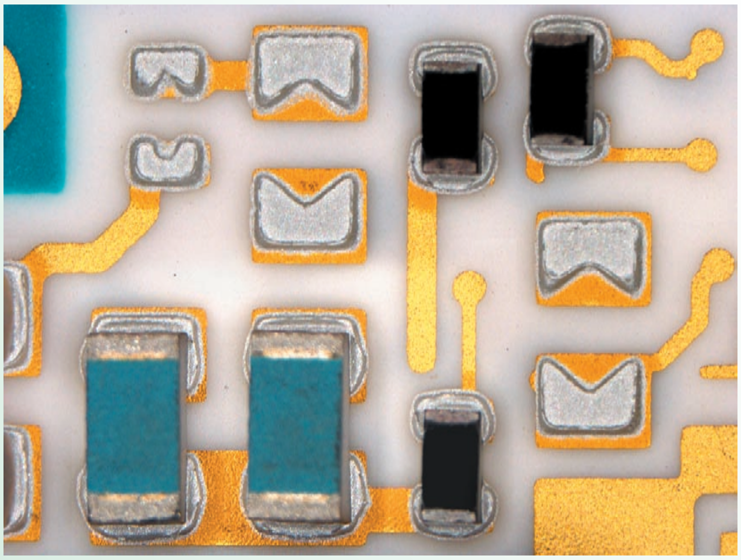
有各种可在室温和升高的温度下的固化条件可供选择。有些可在稍高温度下，比如170℃至180℃，几秒钟内迅速固化。

United Adhesives Inc. makes two categories of Electrically Conductive Adhesives (ECA), silver filled, or silver-coated-copper filled, silicones (Silductor series) and silver filled, or silver-coated-copper filled, epoxies (Eposolder series).

They are in either one-part or two-parts systems. They can be dispensable or screen /stencil printable.

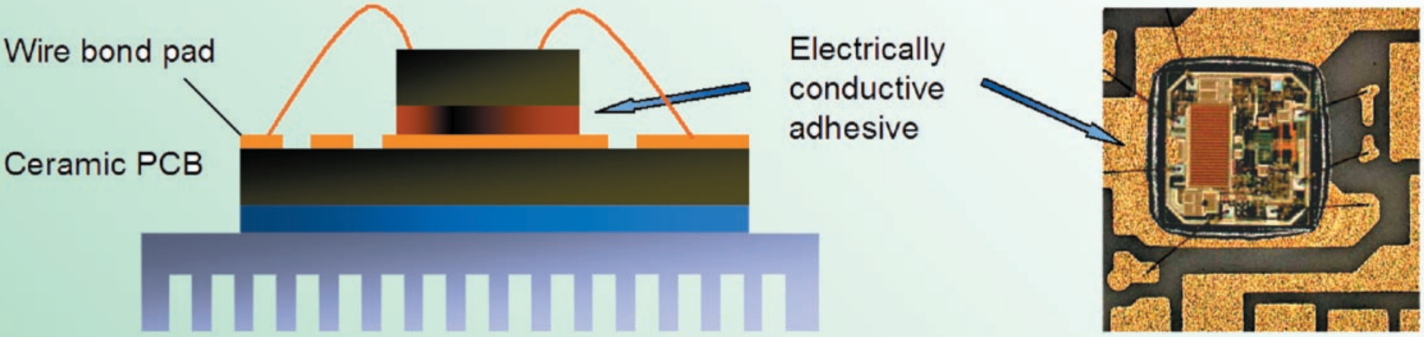
The Silductor series provide significant stress compliance while maintaining high electrical & thermal conductivity. The Eposolder series provides superior bonding strength to most common metal/alloy surfaces while maintaining high electrical & thermal conductivity.

Various cure profiles are available at room temperature and elevated temperature. Some are snap-cured in seconds at 170℃ to 180℃



导电胶印刷在电路板上

Conductive Adhesive Printed on PCB



技术参数和特点 Technical Datasheets and Features

Name	Features / Advantages	Rheology	Part	Volume Resistivity (Ohm-cm)	Hardness / Modulus	Adhesion Al/Al, psi	Cure Rate
Silductor 6310	High conductivity. Low stress silicone based. High moisture resistance. Reworkable.	41,000 cPs	1-part	< 5x10^{-4}	Shore A = 45	>150	125°C 60 min, or 150°C 30 min
Silductor 6350	Low cost alternative with Ag coated Cu as conducting media	46,000 cPs	1-part	< 5x10^{-3}	Shore A = 68	>180	125°C 30 min, or 150°C 15 min
Silductor 6381	Low cost alternative with Ag and Cu hybrid as conducting media	85,000 cPs	1-part	< 2x10^{-3}	Shore A = 80	> 230	125°C 60 min
Eposolder 6510	High electrical conductivity. Strong bonding strength. Dispensable and printable	35,000 cPs	1-part	< 2x10^{-4}	Shore D = 78	> 1200	85°C 2hrs, or 125°C 1 hr
Eposolder 6537	Fast cure (snap cure) epoxy-silver. Strong bonding strength. Dispensable and printable	48,000 cPs	1-part	< 2x10^{-4}	Shore D = 85	> 1500	180°C 15 sec, 125°C 5 min
Eposolder 6763	Epoxy based low cost alternative with Ag coated Cu as conducting media	47,000 cPs	1-part	< 5x10^{-3}	Shore D = 60	> 800	125°C 60 min
Eposolder 6869	High electrical and thermal conductivity (11 W/mK). Strong bonding strength	98,000 cPs	1-part	< 1x10^{-4}	Shore A = 70	> 400	125°C 60 min
Other Products	Eposolder 6503, 6520, 6522, 6526, 6761 – One or two part epoxy based systems with various modifications E-Shielding products, including acrylic Ag-Cu based E-Shield 6037 and carbon based E-Shield 6410, provide conductive coating, RF / EMI shielding solutions Refer to: UnitedAdhesives.com for the property details						

特点

- 优良的各向同性导电性。
- 可供选择的固化条件。 有些可以在稍高温度下数秒内闪速固化。
- 硅胶Silductor系列提供显著降低系统的热应力。
- 环氧Eposolder系列提供了卓越的粘接强度。
- 高可靠性和高温度稳定性
- 良好的附着力，与PET，FR4，铝，铜，银等形成良好的粘结。
- 低渗流无挥发性。

Features

- Excellent isotropic conductivity.
- Various choices of curing conditions. Some are curable in seconds.
- Silicone Silductor series offers significantly lower thermal stress.
- Epoxy Eposolder series provides excellent bonding strength.
- High reliability and high temperature stability
- Good adhesion to PET, FR4, aluminum, copper, silver, etc.
- Low flow and no volatility.

▶ 典型应用 Applications

典型的应用是热敏感元件与导电路径的安装粘结，如芯片的粘接，模块的连接，器件的接地。

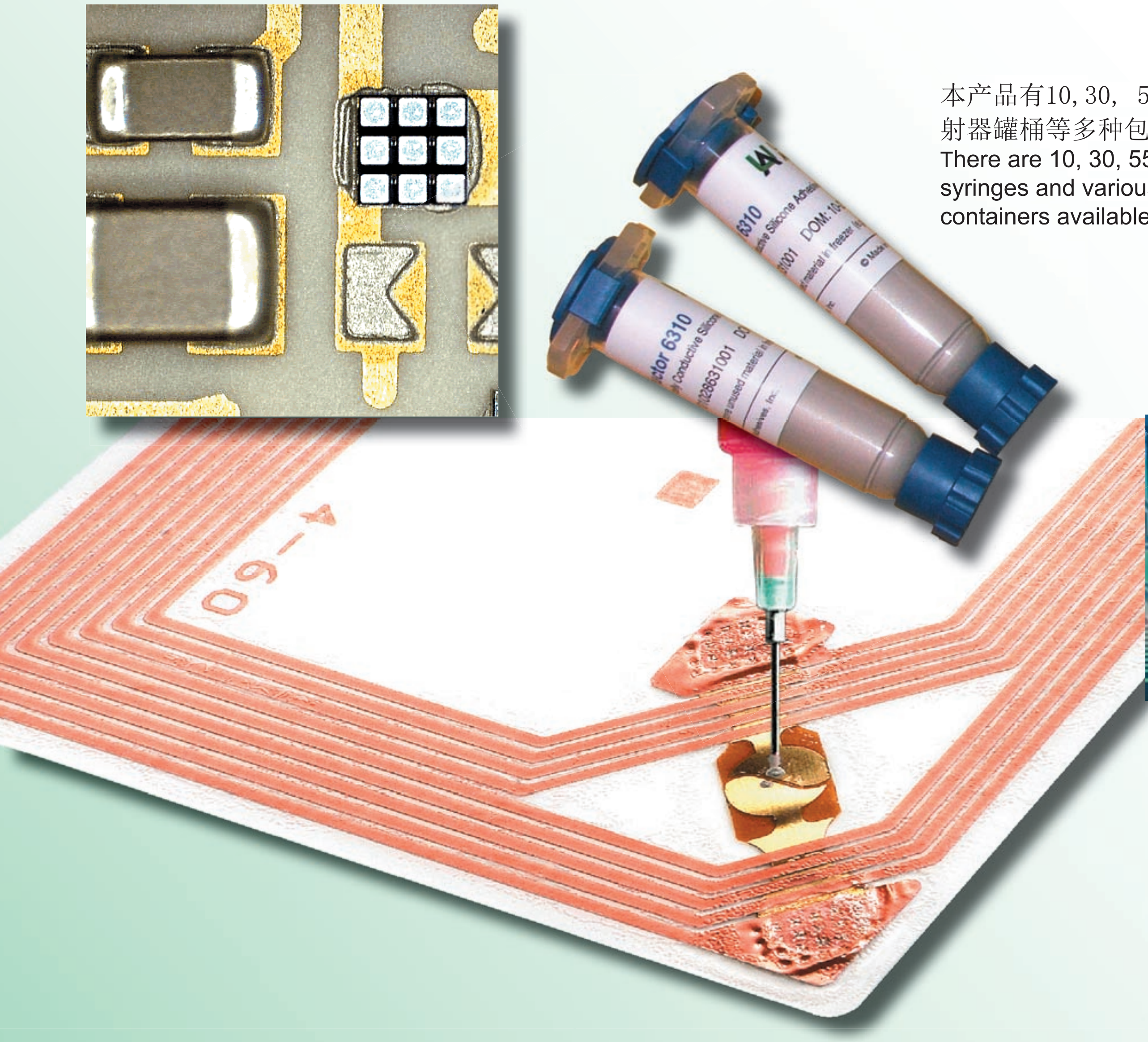
其它的应用在与传感器，磁盘驱动器，倒装芯片，芯片附着组装或包装，微机电系统，LED驱动IC，CCD芯片附着，晶片叠层，CSP，智能卡，相机模块，手机，薄膜太阳能电池，直接访问传感器，半导体封装和RFID标签， 等等。

硅胶型导电胶可以显著降低系统的热应力，而环氧基型导电胶则是焊锡更换，芯片键合，和引线端连接的替代品。

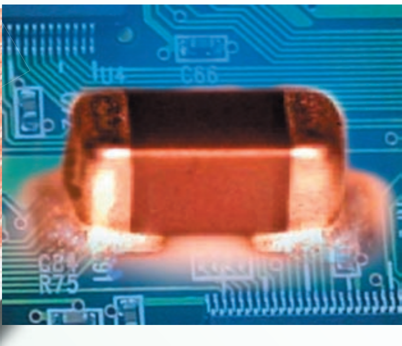
The typical applications are for mounting of heat sensitive components with electrically conductive path such as die attach, chip attach, and groundings.

Other applications are in sensors, disk drive, flip-chip, die attach assembly or packaging, MEMS, LED Driver IC’s, CCD chip attach, wafer lamination, CSP, smart cards, camera modules, mobile phones, thin-film solar cells, direct access sensors, semiconductor packages and RFID tags.

Silicone-based ECAs provide significant stress compliance, while epoxy-based ECAs are alternatives for solder replacement, chip bonding, and lead terminations.



本产品有10, 30， 55毫升注射器罐桶等多种包装规格
There are 10, 30, 55 ml syringes and various jars and containers available



流程指南 Process Guidance

使用指导

在使用之前，将导电胶从冰箱（或冷藏库）取出，并让它在室温下（例如，22至25℃）解冻。解冻时间随容器的大小而变。通常5至10毫升的注射器，解冻时间是30分钟。 30毫升的注射器，解冻时间为60分钟。罐或桶装，时间为1至2小时。接触表面必须清洁，无油，油脂和其他污染物，以达到最佳的粘接强度。

该粘合剂通常可以通过用针管点滴使用，亦还可以通过印刷方法来使用。对于点滴法，建议使用螺旋式的控制阀门。各种其它类型的阀门亦可以适用，例如时间压力阀; 线性活塞泵和喷射阀门等。但它们事先应为特定的应用进行测试。我们通常建议从黄色20号（ID0.6mm时，OD0.9毫米），以薰衣草30号（ID0.15毫米，OD0.30毫米）针头大小用于点滴。针尖到底板表面一般要控制在0.02至0.05毫米距离。

各种类型的自动液体分配滴灌设备可以用于这些粘合剂。它们包括：手工分配/时间压力阀;螺旋式的阀门;线性活塞泵和喷射阀。设备选型应以应用需求来决定。但有关设备选型和工艺优化，用户需从相应供应商的技术服务出取得建议。

将导电胶点滴（或印刷）到连接基板上。必须保证该导电胶层无气泡。取出和放置半导体芯片到导电胶上。根据粘合剂的TDS所列出的相应的温度和时间进行固化。一般对于有机硅产品，推荐在升高的温度下固化，以增强粘附力。

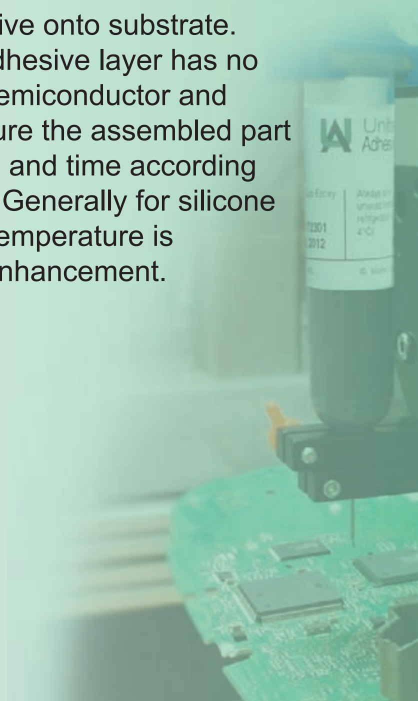
Application Guidance

Before use, pull out the adhesive from freezer (or refrigerator), and let it thaw to room temperature (e.g. 22 to 25 °C). Thaw time varies with container size. Typically for 5 to 10 ml syringe, the thaw time is 30 min. For 30ml syringe, the thaws time is 60 min. For jar or pail, the time is 1 to 2 hrs. The contact surfaces must be clean and free of oil, grease and other contaminations in order to achieve optimal bond strength.

The adhesives are normally applied by dispensing with needle, but also can be applied by printing. For dispensing, an auger style valve is recommended. A variety of other types valve may be suitable such as time pressure valve; linear piston pump and jet valve. They should be tested for the specific application in advance. We typically recommend needle size from yellow 20 gauge (ID 0.6 mm, OD 0.9mm) to Lavender 30 gauge (ID 0.15mm, OD 0.30mm) for dispensing the ECA. Ensure that needle tip is about 0.02 to 0.05 mm from substrate surface.

A variety of auto dispensing equipment types are suitable for applying these adhesives. They include: hand dispense / time pressure valve; auger style valve; linear piston pump and jet valve. Selection of equipment should be determined by application requirements. For advice on equipment selection and process optimization users should contact the corresponding supplier’s Technical Services.

Dispense (or Print) the adhesive onto substrate. It must be ensured that the adhesive layer has no bubble. Pick and Place the semiconductor and register onto the adhesive. Cure the assembled part at corresponding temperature and time according to the TDS of the adhesives. Generally for silicone products, a cure at elevated temperature is recommended for adhesion enhancement.



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The data presented in this leaflet are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the products for a particular purpose. For technical, quality, or product safety questions, please contact directly to United Adhesives Inc.

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