

# CollTech Board Level Adhesive Solutions for PCB and FPCB

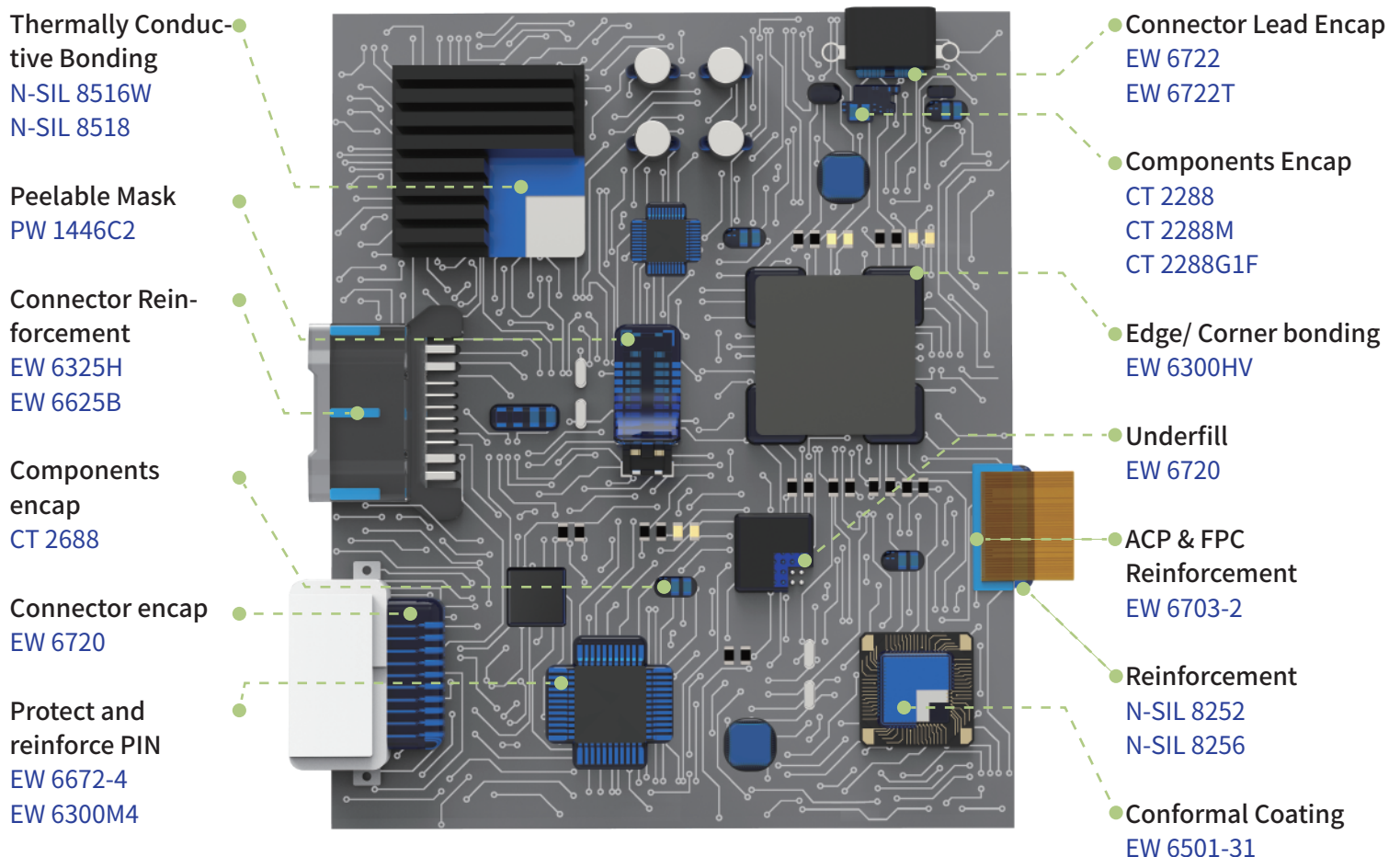
Innovative adhesive solutions

CollTech Board Level Adhesive Solutions

# Board Level Adhesive Solutions

PCBs/FPCBs have always faced the challenge of the miniaturisation trend to ensure that solder joints and assemblies continue to work reliably despite their decreasing size. Adhesives are applied to PCBs to protect sensitive components, as encapsulation, coating or underfills, and thermal management solutions to ensure product quality and reliability. In addition, the increase in frequency of electronic products is placing tougher demands on circuit design, board materials and adhesives, with capacitive noise phenomena and EMI in high frequency circuits being addressed by adhesives.

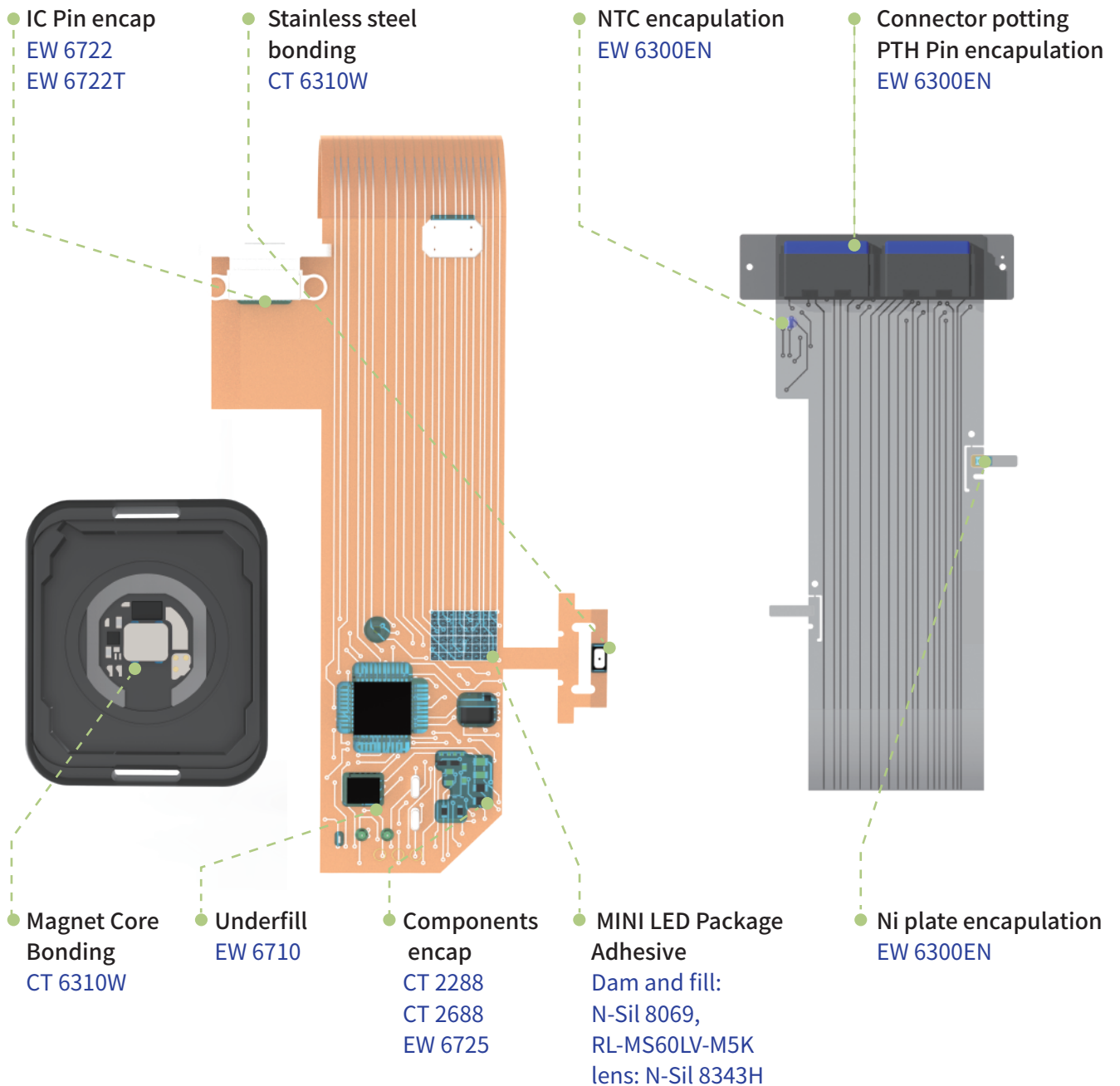
## CollTech offers a comprehensive range of adhesive solutions for FPCB



CollTech offers a comprehensive range of adhesive solutions for these applications, as well as customised total solutions, from materials to equipment, to meet the application and market requirements in every situation.

Feel free to contact us and let our technical experts help you find the most suitable solution for your application.

## CollTech offers a comprehensive range of adhesive solutions for FPCB



# Fields of Application for Board Level Adhesive

## CollTech Electronics

### Customized solutions for various applications in different electronic devices and components

#### We aim at facilitate every step of your projects from design to mass production

We are able to produce consumer electronics adhesives with higher performance for lightweight designs. Adhesives provide excellent bond strength to the adhesive interface in PCB and FPCB assemblies, which can improve impact resistance, more reliable lead bonding connections and optimise thermal management for long term reliability of our customers' products. CollTech offers low ionic, halogen free, RohS, REACH compliant adhesives that meet environmental and safety requirements, such as bonding for wearable products without causing skin irritation. We offer adhesives with different curing modes for fully automated, mass production as well as for small batch, manual assembly processes.

## CollTech Automotive

### Reliable solutions for NEV electronic and core system

#### We contribute to improve your competitive advantages in this challenging industry

CollTech is committed to promoting the progress and development of new energy vehicle technology, continuously improving our product innovation capability, and providing the automotive industry with functional coatings, sealing adhesives, component protection materials, thermal management materials and other high-reliability products for the safe driving of automobiles. Adhesives make the design more flexible, make up for the product design defects, is the most simple and cost-effective solution and has become the hardware design experts preferred material solutions. We are good at providing customised adhesive solutions according to customer's specific applications, and provide customers with a full range of technical support and services, from product selection, material validation, manufacturing process to after-sales service.

### Adhesive Curing Type



UV Curing



Dual Curing



Heat Curing



Moisture curing



Room temperature curing

# Application

## Encapsulation on FPC :

- Substrate: polyimide FPC
- Encapsulated chips: CSP, bare die, QFN, resistors, capacitors, inductor...
- Structure: overfill

## CollTech Adhesive Features :

- Good moisture barrier performance
- Solder joint protect for chip to avoid damage caused by bending during assembly
- No solder extrusion or over flow during 2x reflow process
- Drop test resistance
- Thermal cycling: -40~85 °C, 1hr/cyc, 500cyc
- High temperature and humidity: 85°C/85RH%, 500hr
- Good SIR performance

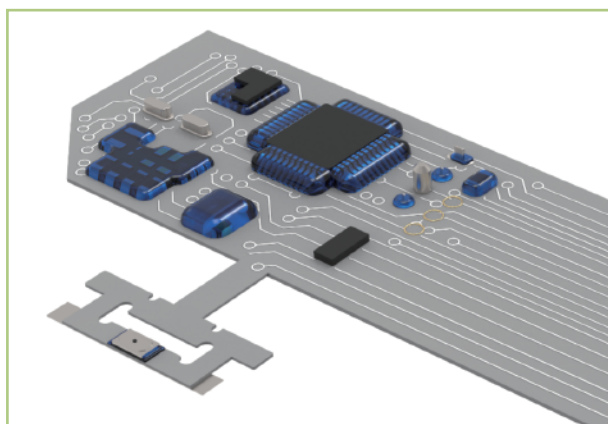
## Product:

Stainless steel bonding  
CT 6310W

IC Pin encap  
EW 6300M4

Components encap

CT 2288  
CT 2688  
EW 6725  
EW 6319T



## Chip Encapsulation in SiP :

- Encapsulation of components and connector lead on PCB
- Clearance between Connector and PCB: 20~40um
- Clearance between Components and PCB(Minimum): 35um
- Distance of Electrodes on 01005 Resistor: ~160um
- Coating of Resistor Electrodes: Plated Silver

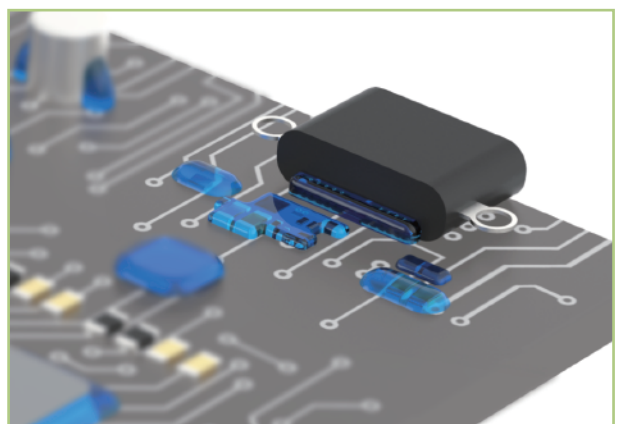
## CollTech Adhesive Features :

- No electrical abnormality after reliability tests:
  - Living high temperature and humidity test: 85oC & 85RH% with defined voltage, 500hr
  - Thermal cycling: -40 ~ 85 °C, 500 cycles
- Halogen free
- RoHS Compliance

## Product:

Components encap  
CT 2288  
CT 2288M  
CT 2288G1F

Connector Lead Encap  
EW 6722  
EW 6722T



# Application

## Peelable Mask:

· The connector pad contaminated by abnormal splashed glue dot encountered during encapsulation glue dispensing process, and improvement required to solve the item:

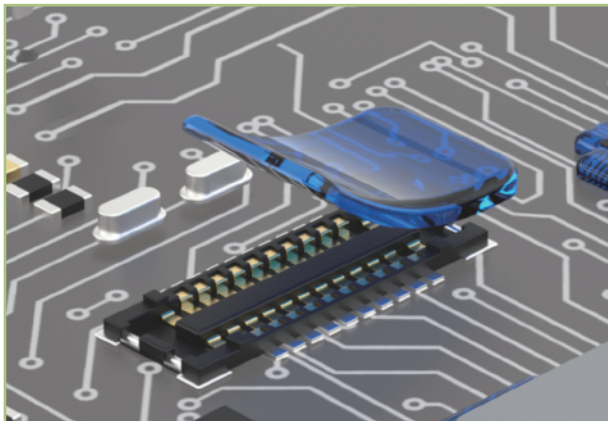
- S1: peelable tape or adhesive was used to protect the connector pad during dispensing process;
- S2: modify the cohesion/rheology of adhesive to solve the abnormal splash dot problem.

## CollTech Adhesive Features :

- Good dispensing performance
- Cures well in small gaps
- Good flux compatibility
- Low ionic content: < 50ppm
- Good SIR: >109Ω (65 °C and 90 RH%)
- Good bond strength

## Product:

Peelable Mask  
PW 1446C2



## Underfill :

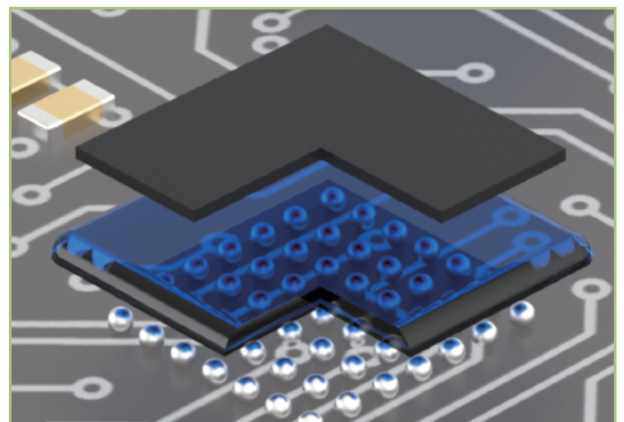
- Underfill of BGA(CSP) and QFN components on PCB
- Key Features on the PCBA:
  - Clearance between solder balls: 40~100μm
  - Pitch of BGA Components (minimum): 0.3mm
  - Alloy of solder ball: Lead-free (SAC305,-SAC405,SAC378)

## CollTech Adhesive Features :

- Good electrical properties after reliability tests:
  - Survive high temperature and humidity test: 85 °C & 85RH% with pre-defined voltage for 1000hrs
  - Thermal cycling: -40 ~ 85°C, over 1000cycles
- Halogen compliance,RoHS compliance

## Product:

Underfill  
EW 6720  
EW 6360UF 7A-1



# Application

## Edge/ corner bonding :

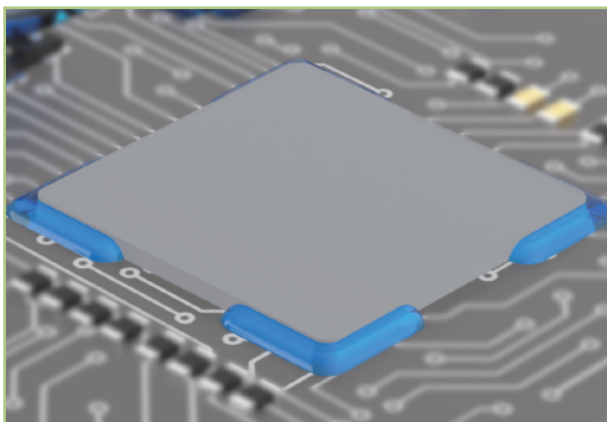
- BGA Corner Reinforcing Adhesive:
  - High temperature and humidity resistance
  - High and low temperature impact resistance
  - High and low temperature cycle resistance
  - High adhesion for FR4, aluminum, solder mask, substraiteer
  - Anti-drop

## CollTech Adhesive Features :

- High TG
- Low CTE
- Easy to dispense
- High temperature rapid curing: 150 degrees,10 minutes
- Halogen free
- RoHS Compliance

## Product:

Edge/ corner bonding  
EW 6300HV



## Thermally Conductive Bonding:

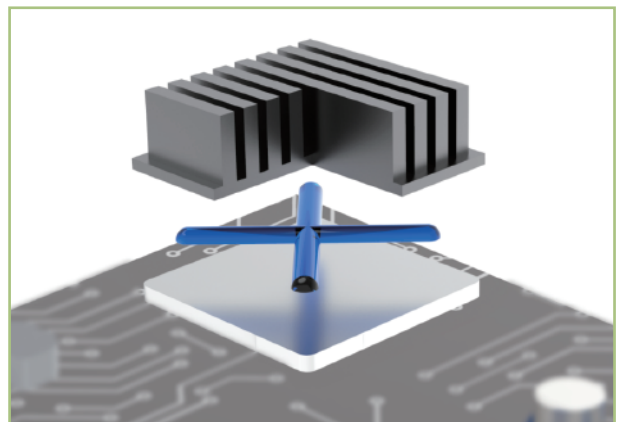
- Dissipate the heat of components on PCBA
- Lower interfacial/contact resistance:
  - Low modulus and low stress
  - High dielectronic strength
  - Bond line thickness with Components (Minimum): 0.1mm

## CollTech Adhesive Features :

- Long work life & easy handling
- Still very high form and vertical gap stability
- Can be dispensed using most standard dispensing systems
- Halogen free
- RoHS Compliance

## Product:

Thermally Conductive Bonding  
N-Sil 8516W



# Application

## ACP & FPC Reinforcement:

- Anisotropic conductive, heat-curing epoxy adhesive.
- Excellent bonding strength to a variety of substrates, such as PCB, PET, Al
- Fast curing at moderate temperatures
- Good temperature and humidity resistance
- Good chemical resistance
- Reinforcement for bending area

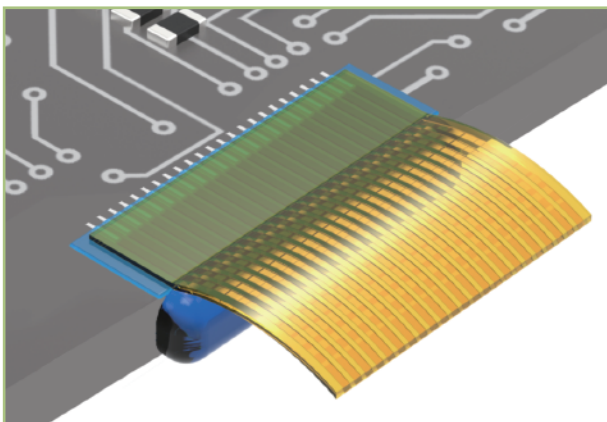
## CollTech Adhesive Features :

- Fast curing
- Halogen free
- RoHS Compliance

## Product:

Anisotropic conductive adhesive  
EW 6703-2

ACP & FPC Reinforcement  
N-SIL 8252  
N-SIL 8256



## Magnet Core Bonding:

- Magnet core and FPC bonding
- High bonding strength:
- High viscosity
- High thixotropy
- Easy to dispense

## CollTech Adhesive Features :

- Fast curing
- Halogen free
- RoHS Compliance

## Product:

Magnet Core Bonding  
CT 6310W



# Application

## Lightning Connector Sealing :

- Connector waterproof sealing
- Superior underfill flowability
  - Flexible epoxy
  - Excellent temperature and humidity reliability
  - Nylon PA46, high metal bonding strength

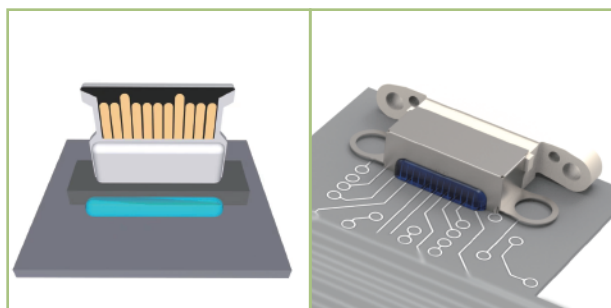
## CollTech Adhesive Features :

- Fast curing at low temperature
- Easy to dispense
- Halogen free
- RoHS Compliance

## Product:

Connector encap  
EW 6722  
EW 6722T

底部填充胶  
EW 6720



## USBC Connector Sealing:

- Sealing, Underfill, Thermal, solder joint protection of USB-Type C on PCB and Components
- Withdraw lead-free reflow 3X
  - Multiple solution for one application
  - Total solution for currently USB Type-C

## CollTech Adhesive Features :

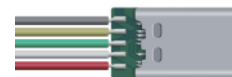
- Survive high temperature and humidity test:
  - 85°C & 85%RH with pre-defined voltage, 1000hrs
  - Thermal cycling: -40 ~ 85°C, over 1000 cycles
- Halogen compliance
- RoHS compliance
- Water-proof, dust proof, protection and aging-anti

## Product:

Gap filler for sealing  
EW 6318H



Solder joint protection  
PW 1490D



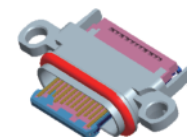
Thermally Conductive Pott  
N-Sil 8516W



Encap  
EW 6345M



Sealing  
N-Sil 8911MR  
EW 6318G10



# Application

## CCS FPC Application:

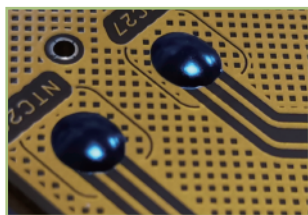
- It requires to protect component from moisture that can lead to ion migration
- Encapsulation for Ni plate, NTC components, connector, fuse, IC Pins on flexible FPC

## CollTech Adhesive Features :

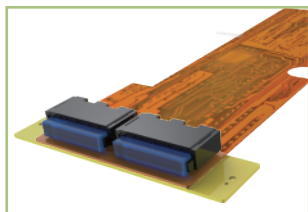
- Flexible epoxy and folderable
- High TI to achieve high aspect ratio
- High bonding strength to various substrates
- Tolerate -40°C-125°C thermal shock for 1008 hours
- Pass DV tests according to EV battery pack
- Consistent dispensing and compatible with various valves

## Product:

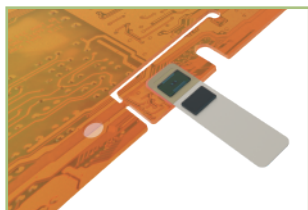
NTC encapsulation  
EW 6300 series



Connector potting  
PTH Pin encapsulation  
EW 6300 series  
EW 6300EN-H



Ni plate encapsulation  
EW 6300 series



## PIN protection for capacitors:

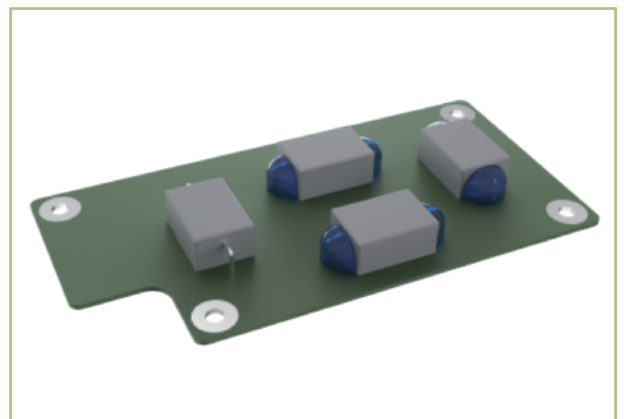
- Component Pin Protection
- Terminated for automotive application
- Withstand -40°C/125°C temperature shock for 1008 H
- Oil resistant at high temperatures
- High viscosity, high thixotropy, can achieve double-sided dispensing without overflow

## CollTech Adhesive Features :

- High reliability
- High bonding
- Fast curing in medium temperatures
- UL V0

## Product:

PIN protection for capacitors  
EW 6677-4



# Equipment Recommendations

## UV Curing Equipment MFS-300:

High flexibility in module design for curing of adhesive surfaces in seconds enable reliable curing of large adhesive surfaces in seconds and with a service life of more than 6,000 hours. The lamps can be individually adapted to your production conditions.

All surface UVA can come up with particularly high intensities of over 1,200-1,400 mW/cm<sup>2</sup>.

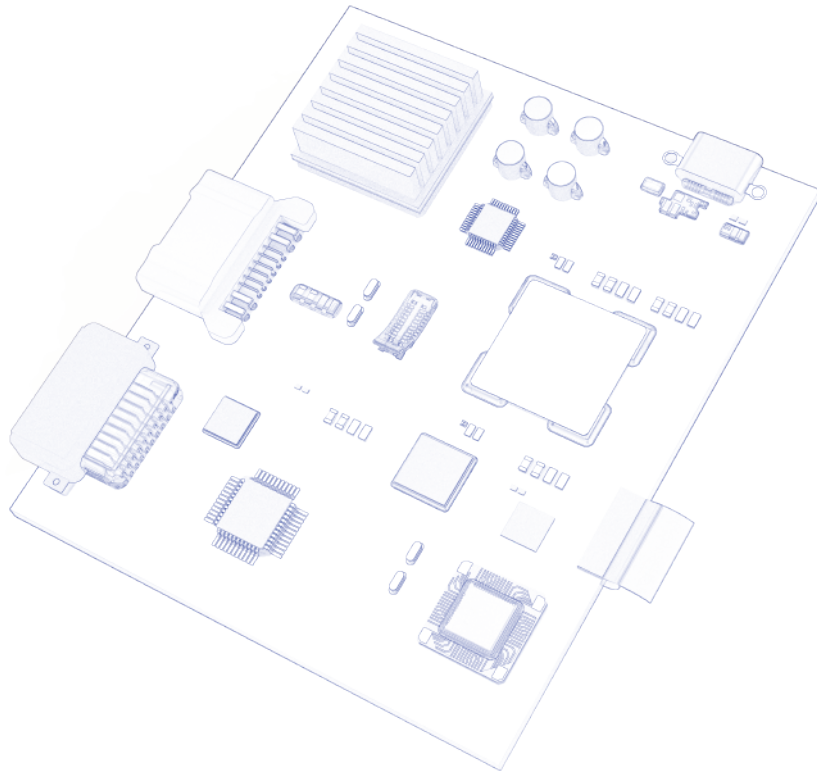
## Equipments features:

- Electroless microwave UV lamp
- Short cycle times thanks to the highest intensities
- High process reliability through homogeneity and intensity stability
- Long life > 6,000 hours
- Different spectra
- Low oven temperature
- Belt or chain conveyor
- User-friendly

## Equipment:

- MFS 300S series(single side curing)
- MFD 300S series(double side curing)





# MCOTI

MCOTI Technologies  
Adhesive Supplier



Scan the QR code to follow us  
Linkedin: MCOTI TECHNOLOGIESr

A: Shenzhen-Baoan - 211, Block A, Jinyuan Business District Building  
Suzhou-Wujiang-Del Plaza Block A 1604/1605  
T: +86-755-29769485 M: +86 189 9435 0970 E-mail: info@mcoti.com