

Solution for metal dust falling



CP-Grip® PAT (USA , China & Japan)

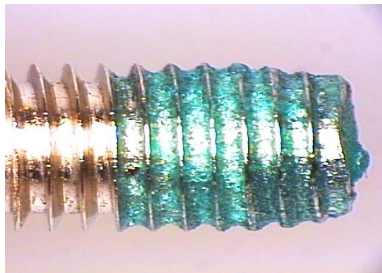
Outline

Information Technology has been used not only for mobile equipment like cellular phone, but also for home appliances, automobile and housing. This wide spread demand for IT needs minimized volume of printed circuit boards.

Generally, Aluminum or Magnesium is used for case of such appliances. But, such light and soft material is easy to generate chips when fastened by screws. Nitto Seiko's CP-Grip has been developed to solve such problem. CP-Grip special coating merges chips and prevent them to fall and fly off.

Special features

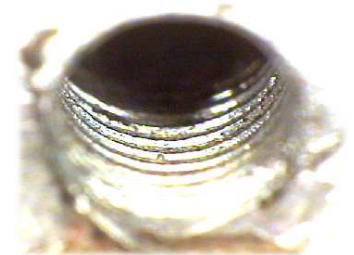
CP-Grip is made from micro-capsuled special viscous liquid, and painted on the screw point. When screw is driven into the hole, micro-capsule will be broken and viscous liquid will ooze out, and prevent chips to fall and fly off.



• Thread with CP-Grip



• Merged chips by CP-Grip
(when used 5 times.)

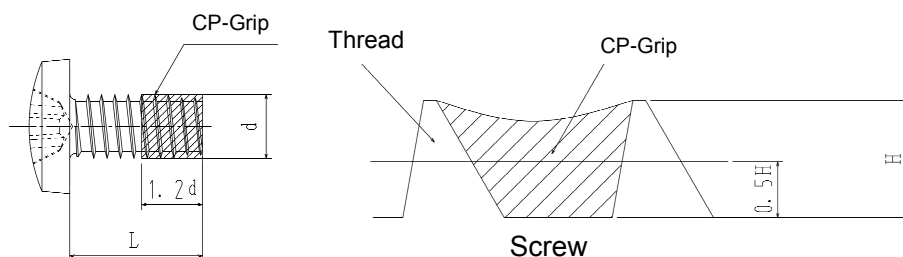


• ADC's pilot hole after
CP-Grip was fastened

Special coating's details

• Microcapsule	• Micro-capsuled liquid	
Capsule's grain size 100 μ m	Viscosity	About 200 CP (25 $^{\circ}$ C)
	Flash point	260 $^{\circ}$ C
It uses environmental-friendly water-soluble binder.	Current point	-10 $^{\circ}$ C
	Corrosiveness to copper	A1 (100 $^{\circ}$ C 3 Hr) JIS K 2513
	Insulative	

Standard of spread area



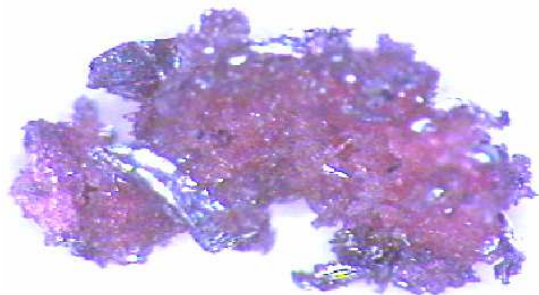
• Length = about 1.2d

• Thickness = 0.5H~1.0H

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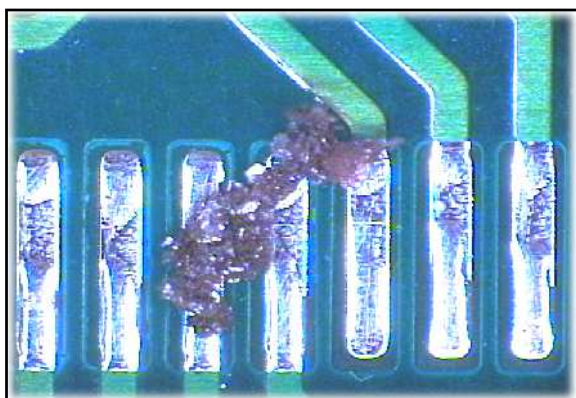
Insulating effect of CP-Grip

Even if that is the case chip merged by CP-Grip fall on to PCB, CP-Grip's insulativeness hardly causes short out of circuit .



Merged chip which is extruded from through-hole. (x75)

- Metal chip is merged by CP-Grip.
- Binder and contained liquid are blocking joint of metal chips.
- Our result shows that merged chips don't conduct electricity even if it is compressed.

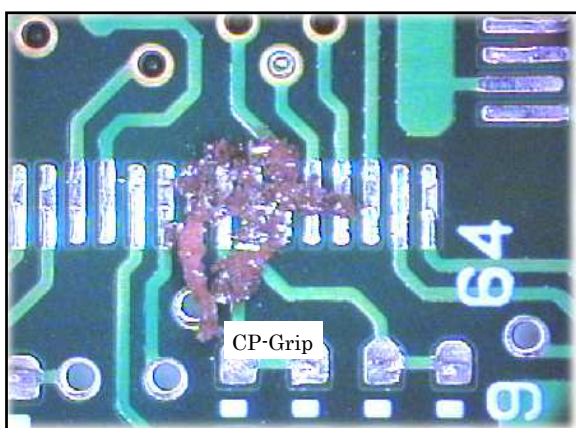


Merged chip is fall on circuit board. (x70)

Electricity conduct.

We have tried some tests by Washer and, result as follows,

Pressure	Plain Washer (3.5x7.8x0.5)	Merged chip by CP-Grip
0 g	No conduct	No Conduct
30 g	Conduct	No Conduct



Pressure circuit test on circuit board. (x25)

- We have tried several tests to merged chips on circuit board but they don't conduct electricity.
- Weight of merged chips are mostly less than 0.1g.
- Dry chips out of CP-Grip need attention.

Note: If you are interested in to our CP-Grip for your actual application, please contact us for more detailed information.

(* Mass production's color of CP-Grip is light green.)

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*Patented in USA , China & Japan.

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