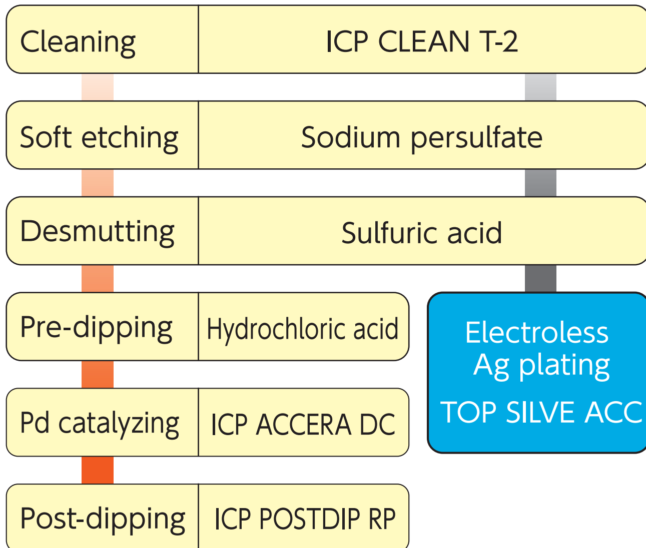
To dielectric substrates for power modules

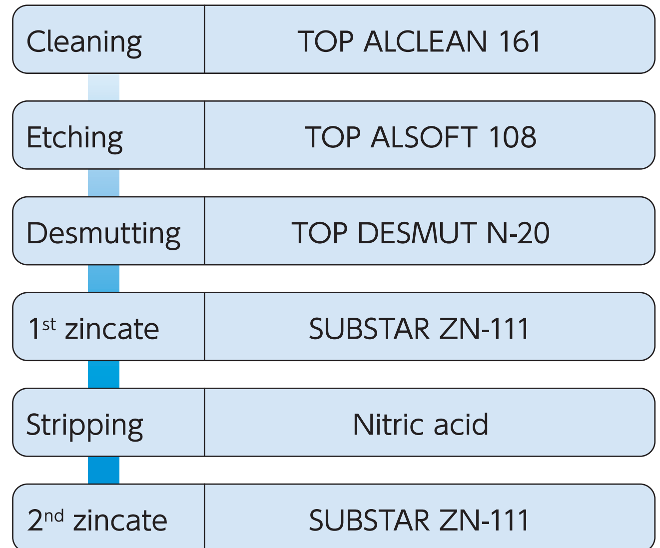
Electroless plating process

- Electroless Ni plating solution with high solder wettability and joint strength
- Electroless Ag, Ni/(Pd)/Ag plating process for silver sintered joint, prevent base metal corrosion

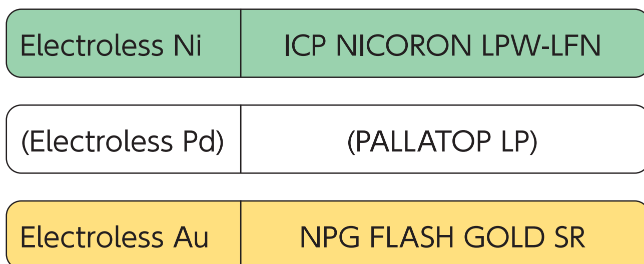
For Cu clad dielectric substrate

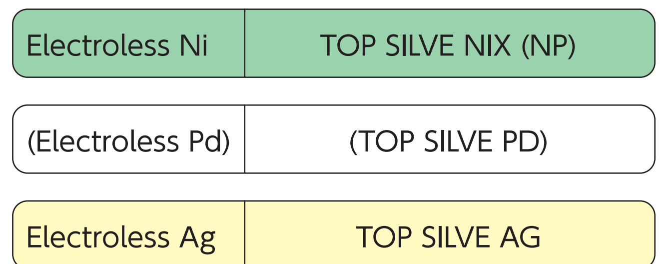


For Al clad dielectric substrate

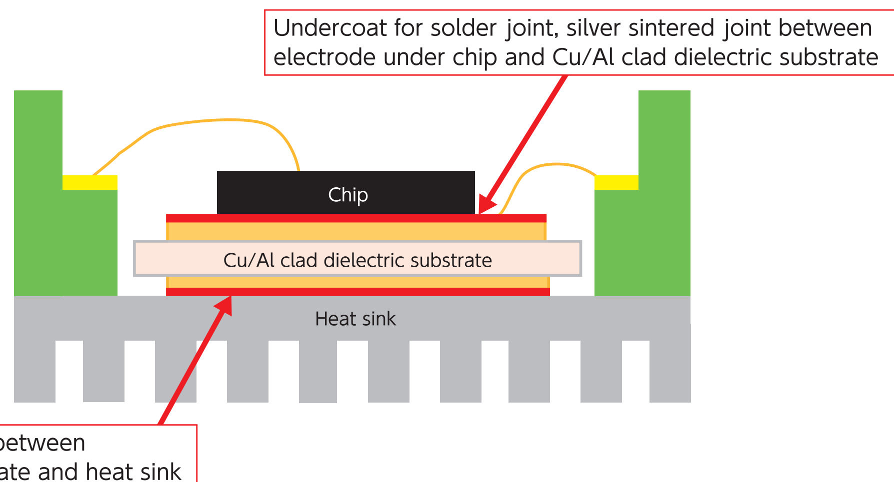


Electroless plating process



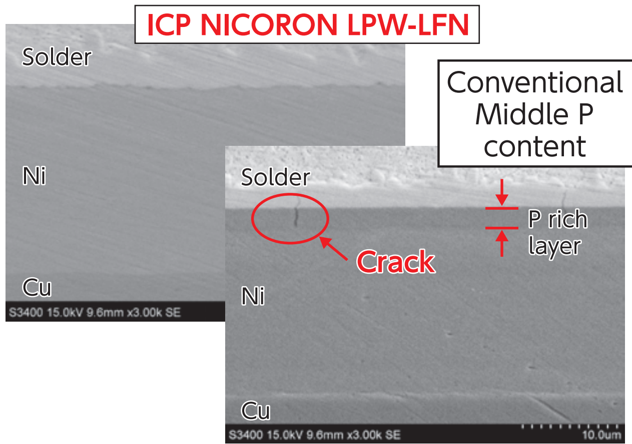


Application for power module



Electroless Ni plating solution: ICP NICORON LPW-LFN

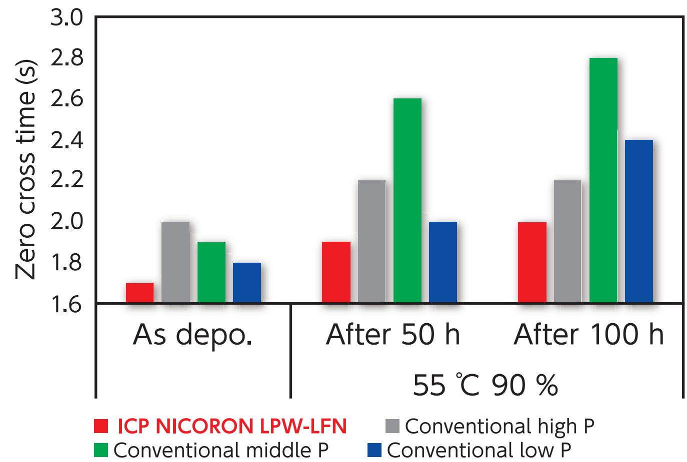
High solder joint performance



Sn-3.0 Ag-0.5 Cu solder dipping
Cross-section SEM image after 200 ℃, 300 h heat treatment

Even after a long-time heat treatment, prevent the formation of P rich layer, ensure high solder joint performance

High solder wettability



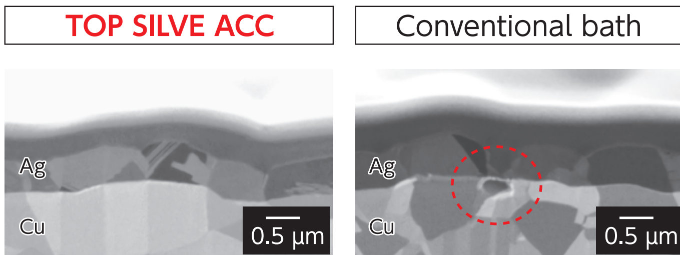
Reduce the decrease of solder wettability after time passage

Measuring zero cross time by meniscograph method
(dip into Sn-3.0 Ag-0.5 Cu solder at 250 ℃)

Electroless Ag plating solution: TOP SILVE ACC / TOP SILVE AG

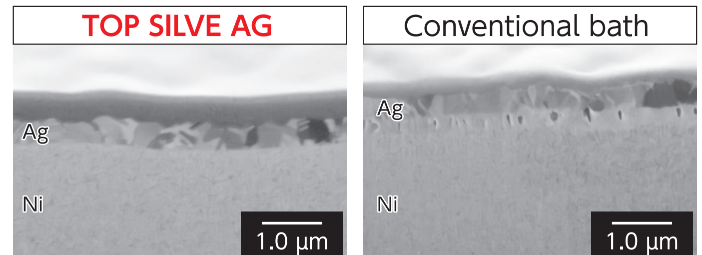
Plating process to prevent base metal corrosion

Electroless Ag plating



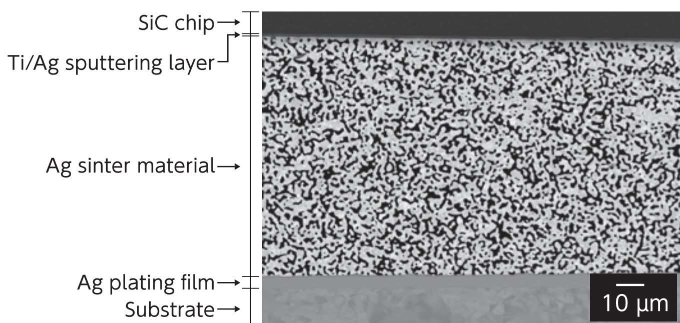
Cross section SIM image after electroless Ag plating

Electroless Ni/Ag plating

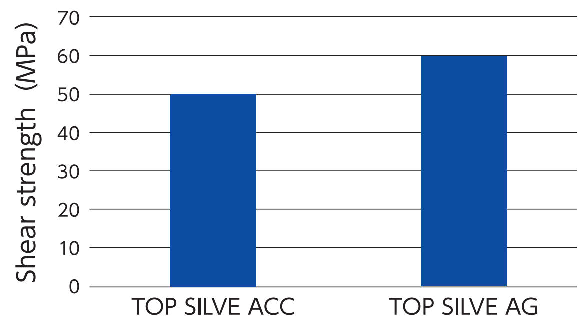


Cross section SIM image after electroless Ni/Ag plating

High bonding strength in Ag sintered joint



Cross section SEM image after Ag sinter jointing



Shear strength after Ag sinter jointing

＊ Ag sinter jointing: Presented by SANKEN, Osaka University Flexible 3D JISSO Collaborative Research Institute

For silver sinter jointing as the replacement of solder jointing