

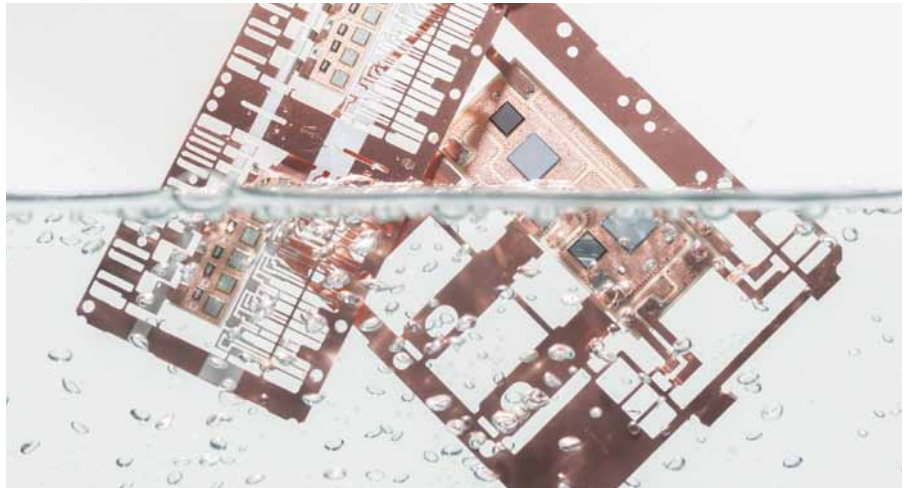
ZESTRON – The global partner of reliability solutions for power electronics

ZESTRON is the leading global supplier of corrosion, humidity reliability and surface solutions for power modules and power packaging devices. ZESTRON's technologies and solutions can be found in high-end industries such as automotive, telecommunication, medical, aerospace, solar and wind.

Apart from being the innovation leader and manufacturer for water-based, semi-aqueous and solvent-based cleaning chemistry for Power Electronics, no matter if DCB, Lead-frame or PCBA-based, ZESTRON's cleaning products and processes create highly reliable surfaces after sintering and soldering before wire bonding, silicone potting, or transfer mold. ZESTRON supports customers along the entire value chain of electronics manufacturing.

ZESTRON's 8 technical support centers have made the industry's leading cleaning machines available to customers for detailed cleaning trials since 1991. With this worldwide presence, especially in China, Japan and Korea, we serve our customers locally and in their mother tongue. Therefore, we are able to bridge cultural gaps in today's multinational supply chains.

Cleanliness requirements of the customer are determined on-site using

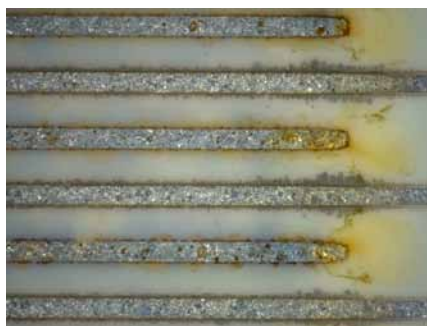


high-resolution methods such as ion chromatography, FTIR as well as SEM/EDX. Finally, we support our customers with process validation.

ZESTRON's dedicated Reliability and Surface experts thoroughly evaluate the risk of failure of power devices and functional units. They also analyze failures in validation tests and damage in the field, both with regard to the mechanism and the underlying root causes. Based on this,

we enable our customers to implement specific and sustainable preventative actions.

ZESTRON actively participates in advanced National and International research projects and studies to ensure permanent technological knowledge development. Furthermore, ZESTRON is engaged in several International Standardization Committees. These insights help to solve your manufacturing challenges.



Anodic Ag salt dendrites caused by AMB plus cathodic Ag dendrites resulting from ECM



Corrosion due to mal Silicone gel adhesion in the area of Al bond wires