PCB Fiberglass Cloth Characterization for CAF Failure Mitigation

PCB

Motivation:

- CAF (conductive anodic filament) failures are an electrochemical migration process causing short circuits within a PCB. Reduced via hole pitch and low loss resin systems (for 5G and similar applications) have exacerbated the problem which often is only found in the field.
- CAF failures often influence design rules across industry, potentially increasing costs.

Objective:

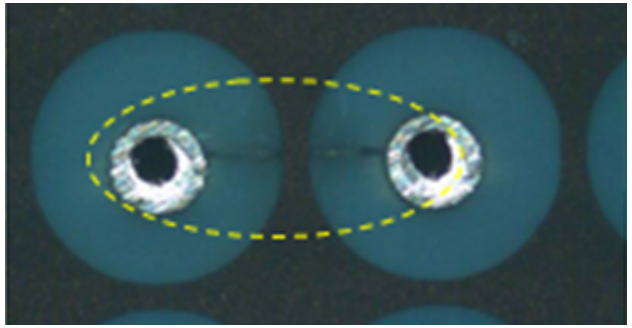
- To characterize effect of glass cloth on reliability of PCB by separating failure mode from effect of low loss resins and copper foil.
- Investigate the effect of fabrication techniques typical for 5G and high frequency designs.

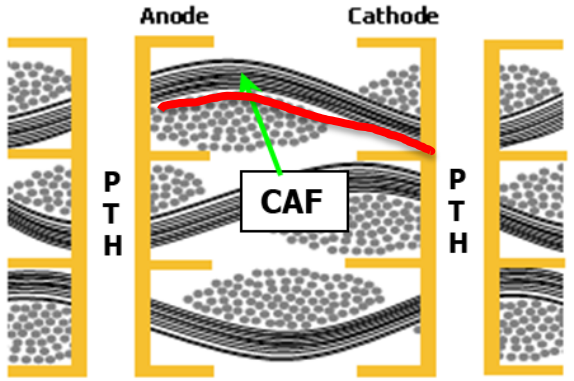
Strategy/Approach:

- Investigate current and recent programs investigating CAF failures to ensure project is supplementary and complimentary.
- Develop inspection techniques for glass cloth (e.g., air permeability) as a screening test to provide assurance of materials acceptability.

Longer term:

- Best practice guidelines





Illustrations by courtesy of Isola

Status:

- At concept stage
- Of interest to OEMs, Tier 1 suppliers and EMS providers
- Participation welcome to define project scope
- Plan call for interest
- Contact Steve.Payne@inemi.org