

Service Bulletin

Issued By: Jason Furlong
Issued Date: 2023-10-25

Subject:

Drifting resistance on “H” circuit.

Bulletin Note:

PWBi has become aware of an issue with certain test results showing a slowly increasing resistance on the H circuit (see Picture 1 below). This can lead to the system rejecting the H circuit and in some cases the S circuit. This issue is caused by a copper diffusion into a tin-lead surface finish at high temperatures over an extended period.

Applicable Models of IST Testers:

All models of IST testers.

Type of IST Coupon:

Any IST coupon with reflowed tin lead as a surface finish.

Description:

At higher temperatures and over an extended period the copper of the H circuit will diffuse into the tin lead solder finish causing the cross-sectional area of the H circuit trace to be reduced. This will only affect coupons being tested with these parameters:

- an external H circuit.
- tin lead surface finish.
- tested ≥ 190 °C.
- cycles > 100.

As the H circuit is constructed entirely of foil and plated copper there is no structure that can fail or change. Therefore this result is an error.

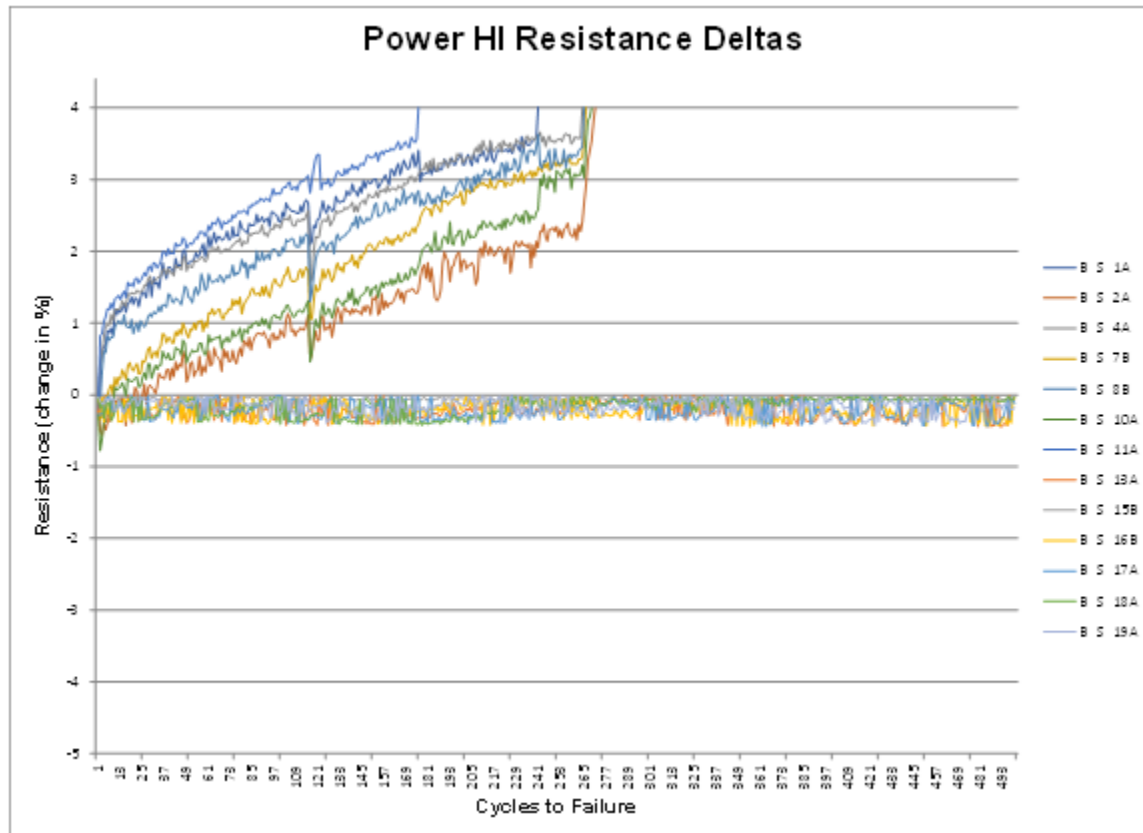
Please note this issue does NOT affect IST testing with these parameters:

- testing by powering on the P circuit.
- any surface finish other than tin lead.
- standard Micro via testing conducted to 100 cycles.

Recommendation:

PWBi has made a software feature to compensate for the failure mode as depicted in Picture 1. The software feature will be listed in the Job settings tab as “Control Circuit Feedback” (see Picture 2 below). For coupons which meet the above criteria this setting should be set to “H”. Software updates will be made available to all systems owners requiring this feature. If you have any questions or concerns, please contact Jason Furlong at 1-613-254-7004 or Jasonf@pwbcorp.com

Picture 1



Picture 2

The screenshot shows the "ISTHC Version 2.0.2" software interface. The "System" tab is selected, and the "Test" sub-tab is active. The "Job Settings" section is visible, containing the following fields and controls:

- Job Name: [Text Field]
- Profile Name: [Text Field]
- Maximum Number of Cycles: [2] (with up/down arrows)
- Test Temperature (°C): [150] (with up/down arrows)
- Test Time (s): [100] (with up/down arrows)
- Compensation: [Calculated] (dropdown menu)
- Control Circuit Feedback: [None] (dropdown menu)
- PreCycle Time Window: [None] (dropdown menu)
- PreCycle Temperature Window (°C): [H] (dropdown menu)
- PreCycle Using: [SenseA] (dropdown menu)
- User: [Text Field]
- Date: [Text Field]
- Notes: [Text Area]
- Power Reject Percent (%): [10] (dropdown menu)
- Sense A Reject Percent (%): [10] (dropdown menu)
- Sense B Reject Percent (%): [10] (dropdown menu)
- Sense Fail Type: [A and B] (dropdown menu)

At the bottom of the "Job Settings" section, there are two buttons: "Save Profile" and "Load Profile".