

FASTON TAB .250 series Solderability validation plan

1. Purpose

This validation plan gives a guidance show how to validate the solderability of TE Connectivity .250 series FASTON Tab in a temperature higher than 260 degree. In TE we have a report prove our Tabs can meet industry requirement in 260 degree (refer to test report 503-1), but currently our new customer is using higher temperature, tests in this plan will guide how to prove its solderability performance.

Note The customize .250 series FASTON Tabs which restricted to BSH is shared the same plating process as TE standard FASTON Tab, they have the same functional performance, TE standard FASTON Tab 63824-1 will be used to represent TE's Tabs. Parallely in the plan, we will select one of competitor's Tab as a contrast.

2. introduction

Two tests are required in this plan, both are used lead-free plated specimens processed in tin/lead solder and lead-free solder.

- In test 1, specimens are subjected to the solder bath/dip and look test using no steam aging (as plated), resistance to dissolution of metallization after steam aging after 8 hours and heat aging after 16 hours using the solderability acceptance criteria established by J-STD-002, coverage percentage show be recorded after test, should more than 95%.
- In test 2, the setting is the same as test 1 except the solder pot temperature is different, refer to test plan for detail. The validation temperature should cover customer process temperature range.

3.test plan

Test 1

Test method

Test parameter shown as fig.1

Test method	Flux	Solder	Solder pot temperature
Solder bath/dip and look	KESTER 145 (25% solids nonactive rosin)	Tn/Lead (63/37)	240°C
		Lead-free SCA 405 95.5% tin, 4%silver, 0.5% copper	260°C
Resistance to dissolution of metallization	KESTER 145 (25% solids nonactive rosin)	Tn/Lead (63/37)	260°C
		Lead-free SCA 405 95.5% tin, 4%silver, 0.5% copper	280°C

Fig.1

Note: For minimize the resource using, Lead-free SCA 405/customer solder will be first choice.

Conditioning

All specimens were evaluated in each of three conditionings, after test the picture should be record.

1. As plated
2. After 8 hours steam aging
3. After 16 hours heat aging (155°C)

Specimen properties:

All specimens should meet drawing specification, both dimension and plating thickness.

Test 2

Test method

Test parameter shown as fig.2

Test method	Flux	Solder	Solder pot temperature
Solder bath/dip and look	KESTER 145 (25% solids nonactive rosin)	Tn/Lead (63/37)	250 °C
		Lead-free SCA 405 95.5% tin, 4%silver, 0.5% copper	270 °C
Resistance to dissolution of metallization	KESTER 145 (25% solids nonactive rosin)	Tn/Lead (63/37)	270 °C
		Lead-free SCA 405 95.5% tin, 4%silver, 0.5% copper	290 °C

Fig.2

Conditioning

All specimens were evaluated in each of three conditionings, after test the picture should be record.

1. As plated
2. After 8 hours steam aging
3. After 16 hours heat aging (155°C)

Specimen properties:

All specimens should meet drawing specification, both dimension and plating thickness.