

Test Report

RAST 5 TAB HEADER

TE Connectivity (Shanghai) Co., Ltd.

1. INTRODUCTION

1.1 Purpose

Testing was performed on Rast 5Tab Header to determine its conformance to the requirements of Product Specification 108-106080 Rev C1.

1.2 Scope

This report covers the electrical, mechanical, and environmental performance of Rast 5Tab Header.

1.3 Product Description

The product includes Tin plating and Silver plating .

1.4 Environmental Conditions

Unless otherwise stated, the following environmental conditions prevailed during testing:

Temperature: 15°C to 35°C
 Relative Humidity 45% to 75%
 Atmospheric Pressure : 86.6~106.6 Kpa

1.5 Qualification Test Sequence

Test or Examination	Test Group						
	1	2	3	4	5	6	7
	Test Sequence (a)						
Examination of product	1	1,3	1,3	1,3	1	1,9	1,4
Insulation Resistance					2,6	2,7	
Dielectric withstanding Voltage					3,7	3,8	
Contact Retention Force	2						
Glow wire test				2			
Temperature Life					5	5	
Humidity-Temperature Cycling					4	4	
Solder ability		2					
Resistance to Soldering Heat			2				
Condensed water/changing climate with air containing SO2						6	
Cold							2
Dry heat							3

Fig. 1

*** Notes:**

Specimens shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. Test group 1 shall consist of a minimum of 10 specimens. Test groups 2, 3, 4 5 and 6 shall each consist of a minimum of 5 specimens.

2. TEST CONTENT

No.	2.1
Test Items	Examination of Product
Requirements	Meets requirements of product drawing and TE Specification (108-106080) After test, no corrosion influence performance.
Procedures	Visual inspection No physical damage
Electrical Requirements	
No.	2.2.1
Test Items	Insulation Resistance
Requirements	5000MΩ min
Procedures	Measure by applying test potential between adjacent contacts. EIA-364-21B
No.	2.2.2
Test Items	Dielectric Strength
Requirements	Tab headers must withstand test potential of 3000VAC for 1 min. Current leakage limit to 0.5mA max
Procedures	Measure by applying test potential between adjacent contacts. EIA-364-20A, Method A
Mechanical Requirements	
No.	2.3.1
Test Items	Contact Retention Force
Requirements	26.7 N min.
Procedures	EIA-364-13. Measure force necessary to remove contact tab from housing at a maximum rate of 12.7 mm [.5 in] per minute.
No.	2.3.2
Test Items	Glow wire test
Requirements	Tested part shall have rating of 750° C with no flame.
Procedures	The extremity of the wire is positioned horizontally and brought into contact with the sample with a force between 0.8 and 1.2N for a period of 30s.
Environmental Requirements	
No.	2.4.1
Test Items	Temperature Life
Requirements	No Physical damage
Procedures	Subject connectors to temperature life at 85°C±2°C for 96 hours. EIA 364-17 condition III
No.	2.4.2
Test Items	Humidity-Temperature Cycling
Requirements	No Physical damage
Procedures	Subject connectors to steady state humidity at 40°C±2°C and 90-95% R.H for 96hrs. EIA-364-31A, Method III, condition B
No.	2.4.3
Test Items	Solder ability

Requirements	The inspected area of each lead must have 95% solder coverage minimum
Procedures	Temperature: $245 \pm 5^{\circ} \text{C}$, $3 \pm 0.5 \text{sec}$. EIA-364-52, class I. category 1
No.	2.4.4
Test Items	Resistance to Soldering Heat
Requirements	No Physical damage
Procedures	EIA-364-56, Procedure 3, Condition B. Subject connectors to solder bath at $260 \pm 5^{\circ} \text{C}$ for 5 ± 1 seconds (Flow soldering). The distance between the mounting surface and solder surface shall be 1.5 mm to 2.54mm
No.	2.4.5
Test Items	Condensed water/changing climate with air containing SO ₂
Requirements	Insulation Resistance & Dielectric withstanding Voltage
Procedures	Subject specimens to 30°C & 70%RH, Cl ₂ 10ppb, NO ₂ 200ppb, H ₂ S 10ppb, SO ₂ 100ppb for 4 days.
No.	2.4.6
Test Items	Cold
Requirements	No physical damage
Procedures	Acc. IEC 512 Part6, test 11 T: -40°C , duration time: 2 hours.
No.	2.4.7
Test Items	Dry heat
Requirements	No physical damage
Procedures	Acc. IEC 512 Part6, test 11 T: 120°C , duration time: 7 days

Fig. 3

*** Notes**

A) Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification.

3. TEST RESULT

3-1. Test Group 1

3-1-1. Contact Retention Force

UNIT: N

Pin	Retention Force
1	48.07
2	50.35
3	48.05
4	50.54
5	53.77
6	44.88
7	47.87
8	44.86
9	48.37
10	43.18
Max.	53.77
Min.	43.18
Ave.	47.99
Spec	26.7 N Min
Judgment	Pass

3-2. Test Group 2

3-2-1. Solder ability

5 pcs Silver plating and 5 pcs Sn plating connector pass the solder ability test, no physical damage occurred.

3-3. Test Group 3

3-3-1. Resistance to Soldering Heat

Connectors can pass the resistance to soldering heat test, no physical damage occurred.

3-4. Test Group 4

3-4-1. Glow wire test

No	Temperature	Test Result					
		Ti (sec)	Te (sec)	Flame Height (cm)	Drops (yes/no)	Light tissue paper burns (yes/no)	Judgment
1	750°C	0	0	0	no	no	Pass
2	750°C	0	0	0	no	no	Pass
3	750°C	0	0	0	no	no	Pass
4	750°C	0	0	0	no	no	Pass
5	750°C	0	0	0	no	no	Pass

3-5. Test Group 5 & 6 (Just do the Test Group 6 for all the types of Tab Headers, so the Group 5 has been covered)

3-5-1. Insulation Resistance

UNIT: (10¹²)Ω

Types	with Sn plating		with Silver plating					
	initial	After test	Initial	After test				
Number of Sample	5	5	5	5				
Max.	17.28	3.273	10.27	0.514				
Min.	1.3	0.351	8.89	0.186				
Ave.	7.97	1.21	1.98	0.339				
Specification	5000 MΩ Min							
Judgment	Pass		Pass					

3-5-2 Dielectric withstanding Voltage

Types	with Sn plating		with Silver plating					
	initial	After test	Initial	After test				
Number of Sample	5	5	5	5				
Test Result	OK	OK	OK	OK				
Specification	Dielectric Withstanding voltage was measured separately between the closest adjacent contacts at 3000Vac for 1 minute							

3-6. Test Group 7

3-6-1. Cold test

Connectors can pass the cold test, no physical damage occurred.

3-6-2. Dry heat test

Connectors can pass the dry heat test, no physical damage occurred.

4. Conclusion

Rast 5Tab Header conformed to the electrical, mechanical, environmental performance requirements of Product Specification 108-106080, Rev C1

5. VALIDATION

Requested by:

Winter Wang 05 10 13
_____ / /

Product Engineer
Shanghai Engineering Center (CS)

Prepared by:

Coco Xu 05 10 13
_____ / /

Test Engineer
Shanghai Engineering Center (CS)

Approved by:

Yuhong Mao 05 10 13
_____ / /

Manager
Shanghai Engineering Center (CS)