

DESIGN OBJECTIVES

108 - 101631

The product described in this document has not been fully tested to ensure conformance to the requirements outlined herein. TE Connectivity makes no representation or warranty, express or implied that the product will comply with these requirements. Further, TE Connectivity reserves the right these requirements based on the results of additional testing and evaluation. Contact TE Connectivity Engineering for further information. If necessary, this document will become the Product Specification at successful completion of testing.

1. Scope:

1.1 Content

This specification covers the requirements for product performance and the test methods. This specification applies to the product, but not limited to it.

12p 90 degree header TE connectivity part No.: 2334993-*
 12p 180 degree header TE connectivity part No.: 2334991-*
 32p 90 degree header TE connectivity part No.: 2326784-*
 32p 180 degree header TE connectivity part No.: 2334989-*
 40p 90 degree header TE connectivity part No.: 2322791-*
 40p 180 degree header TE connectivity part No.: 2322794-*

Test with below plug housing and terminal:

12p plug TE connectivity part No.: 1318774-1
 32p plug TE connectivity part No.: 1318747-1
 40p plug TE connectivity part No.: 1318389-1
 0.64 female terminal part No.: 1123343-1, 1674298-1

1.2 Qualification

All inspections shall be performed using the applicable Inspection Plan and Product Drawing.

				DR	16SEP2017	 TE Connectivity Shanghai, China		
				J.Yin				
				CHK	09NOV2017			
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				APP	15NOV2017	NO.	REV	LOC
				I.Yin		108-101631	B1	ES
				PAGE	TITLE			
B1	REVISED	H.S	30JUL20	1 of 11	025 interface PIP header connector			
B	REVISED	H.S	20MAY19					
LTR	REVISION RECORD	DR	DATE					

2. Applicable Documents:

The following documents form a part of this Specification to the extent specified herein.
In the event of conflict between the requirements of this specification and the drawing, the drawing shall take precedent.

In the event of conflict between the requirement of this specification and the referenced documents, this specification shall take precedent.

3. Requirements:

3.1 Design and Construction

Product shall be of the design, construction and physical dimensions specified in the applicable product drawing.

3.2 Materials

Housing

-Material: PA10T GF30

Contact

-Material: CuZn30

-Finish: Plating Sn over Ni on matting and PCB side

Solder Pin

-Material: CuZn30

-Finish: Plating Sn over Ni on matting and PCB side

3.3 Ratings:

Operating temperature range: -40 °C to + 105 °C

3.4 Performance and Test Descriptions

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in fig.1



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Para.	Test items	Requirements	Procedures		
GENERAL REQUIREMENTS					
3.5.1	Confirmation of Product	Visual inspection	No physical damage		
ELECTRICAL REQUIREMENTS					
3.5.2	Termination Resistance (Low Level)	0.64 Initial: 8mΩ Max. Final: 16mΩ Max.	Subject mated contacts assembled in housing to 20mV Max. open circuit at 10mA See Fig 3.		
3.5.3	Termination Resistance (Specified Current)	0.64 Initial: 8m V/A Max. Final: 16m V/A Max.	Subject mated contacts assembled in housing to 12V Max open circuit at 1A See Fig 3.		
3.5.4	Dielectric withstanding Voltage	No creeping discharge nor flashover shall occur.	Impressed voltage 1000V AC for 1 minute. Mated connector See Fig 4.		
3.5.5	Insulation Resistance	100MΩ Min.	Impressed voltage 500V DC. Mated connector See Fig4.		
3.5.6	Current Leakage	3mA Max.	Impressed voltage 14V DC See Fig5.		
3.5.7	Temperature Rising	60°C Max.	Measure temperature rising at wire crimped by applied current to all positions. Fig.9		
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Para.	Test items	Requirements	Procedures		
3.5.8	Over current loading	No ignition is allowed during the test	Apply the current to only one position. Applied current: Fig 6		
PHYSICAL REQUIREMENTS					
3.5.9	Vibration	No electrical discontinuity Greater than 10usec. Shall occur. Satisfy requirements of test item on the para test sequence.	Vibration Frequency: 20-200-20Hz/3min. Acceleration: 44.1m/s ² Vibration Direction: X,Y,Z Duration: 3hour each Mounting: Fig 7		
3.5.10	Shock	No electrical discontinuity greater than 1u sec.	Acceleration: 980m/s ² Waveform: Half sine wave Duration: 6m sec. Velocity Number of drops: 3 drops each Directions of X,-X,Y,-Y,Z and -Z axes. Totally 18 drops Mounting: Fig.7		
3.5.11	Connector Mating Force	75N Max.	Operation Speed: 100mm/min. Measure the force required to mate connector		
3.5.12	Connector Un-mating force	75N Max.	Operation Speed: 100mm/min. Measure the force required to un-mate connector (without housing lock)		
3.5.13	Connector locking strength	100N Min.	Apply an axial pull-off load to one of the mated housing, measure locking strength. Operation speed: 100mm/min.		
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Para.	Test items	Requirements		Procedures		
3.5.14	Resistance to “Kojiri”	Satisfy requirements of test item on the para test sequence		Repeated mating, un-mating by hand in up-down and right-left direction for 10cycles		
3.5.15	Solderability	No gap with PCB		Solder Temperature: 260±5°C Immersion Duration: 30±10sec.		
3.5.16	Retention force of Tab	Pin 0.64	15N Min.	Measure the retention force between housing and tab contact. Operation speed: 100mm/min.		
		Pin 2.3	35N Min.			
ENVIRONMENTAL REQUIREMENTS						
3.5.17	Thermal Shock	Satisfy requirements of test item on the para test sequence		-40°C/30min., 100°C/30min. Making this a cycle, repeat 1000 cycles. Monitor resistance-variation at closed circuit current of 10mA during the test.		
3.5.18	Humidity	Satisfy requirements of test item on the para test sequence		90-95%R.H., 60°C. 96hours Monitor current leakage during the test.		
3.5.19	Industrial Gas(SO ₂)	Satisfy requirements of test item on the para test sequence		Unmated connector SO ₂ Gas: 25ppm, 75% R.H. 25°C, 96hours		
3.5.20	Temperature life	Satisfy requirements of test item on the para test sequence		120 °C, 120hours		
3.5.21	Resistance to Cold	Satisfy requirements of test item on the para test sequence		-40 °C, 120hours		
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Para.	Test items	Requirements	Procedures
3.5.22	Humidity-Temperature cycling	Satisfy requirements of test item on the para test sequence	Condition: Fig.8 Making this condition a cycle, Repeat 10 cycles. Monitor resistance-variation at closed circuit current of 10mA during the test.
3.5.23	Dust Bombardment	Satisfy requirements of test item on the para test sequence	Subject JIS R 5210 cement blow of 1.5kg per 10 seconds in 15 minutes intervals for 8cycles, with mating/un-mating per 2 cycles
3.5.24	Compound environment resistance	No electrical discontinuity greater than 1u sec.	Temperature: 80°C Vibration Frequency: 20-200-20Hz/3Min. Acceleration: 44.1m/s ² Vibration direction: X,Y,Z Duration:300 hours Test Current: Fig. 10 Mounting: Fig 7 Monitor resistance-variation, and after this test check if instant cutoff occurs for an hour.
3.5.25	Condensation	Satisfy requirements of test item on the para test sequence	0°C/10min., 80°C/90-95%/30min. Making this a cycle, repeat 48 cycles. Monitor current leakage during the test
3.5.26	Reflow process (only for header)	Satisfy requirements of test item	Reflow condition: Fig. 11 preheat temperature: 150-200°C preheat time: 60 to 120 seconds Peak temperature: 260°C Peak temperature time: 20 to 40 seconds Time 25°C to peak: 8 minutes maximum

Fig. 1

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3.6 Product Qualification Test and Sequences

SAMPLE QUANTITIES																	
Test or examination	TEST GROUP																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Confirmation of Product	2	2	2	2,6	2	2,4	2,6	2,6	2,9	2,6	2,7	2,4	2,8	2,6	2,6	2,6	2
2. Termination Resistance (Low Level)	4			3,7	3,6				3,10	3,7	3,8		3,9	3,7	3,7		
3. Termination Resistance (Specified Current)	5			4,8	4,7		3,7	3,7	4,11	4,8	4,9		4,10	4,8	4,8		
4. Dielectric withstanding Voltage	8						4,8	4,8	6,13				6,12				
5. Insulation Resistance	7								5,12				5,11			3,7	
6. Current Leakage									8							5	
7. Temperature Rising	6										5,10				5		
8. Over current loading	9			5													
9. Vibration					5												
10. Shock						3											
11. Connector Mating Force	3																
12. Connector Un-mating force	10																
13. Connector locking strength			3														
14. Resistance to "Kojiri"							5										
15. Solderability		3															
16. Retention force of Tab																	3
17. Thermal Shock								5									
18. Humidity									7								
19. Industrial Gas(SO2)										5							
20. Temperature life											6						
21. Resistance to Cold												3					
22. Humidity-Temperature cycling													7				
23. Dust Bombardment														5			
24. Compound environment resistance															5		
25. Condensation																4	
26. Reflow process (only for header)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sample size	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Fig. 2

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4. QUALIFICATION TEST

4.1 Sample selection

Samples shall be prepared in accordance with applicable specification.

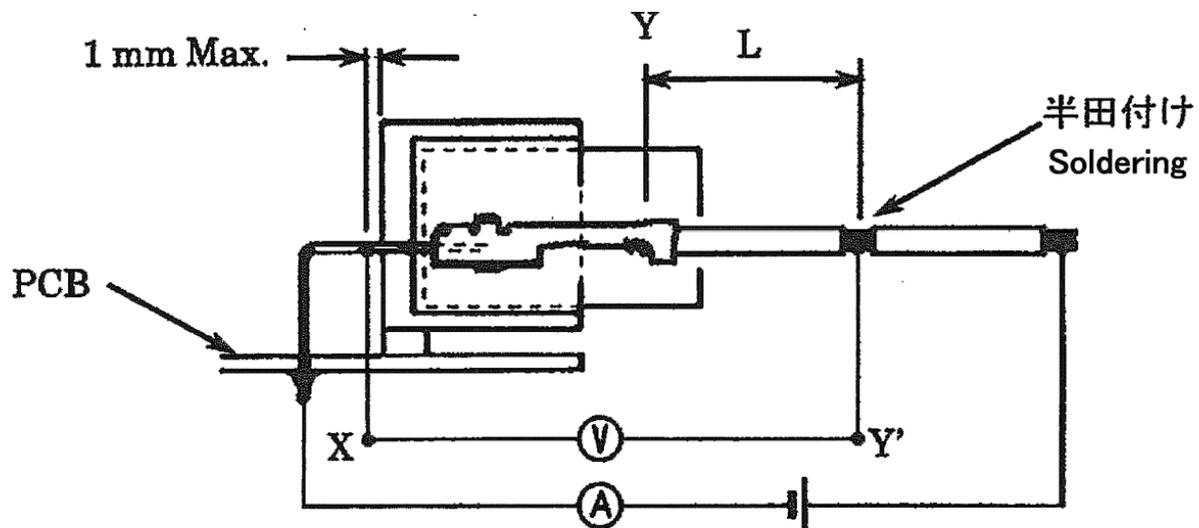
4.2 Test sequence

Qualification test shall be conducted as sequence specified in Fig. 2.

4.3 Requalification test

If changes significantly affecting form, fit or function are made to product or manufacturing process, product assurance shall co-ordinate requalification testing, consisting of all or part of original testing sequence as determined by developments, product, quality and reliability engineering.

5. TEST PROCEDURE



Y-Y' 間の電線 L 分の抵抗は差し引く

Reduce resistance of Y-Y' (wire "L") from X-Y'

W-B タイプ / W-B Type

Fig.3

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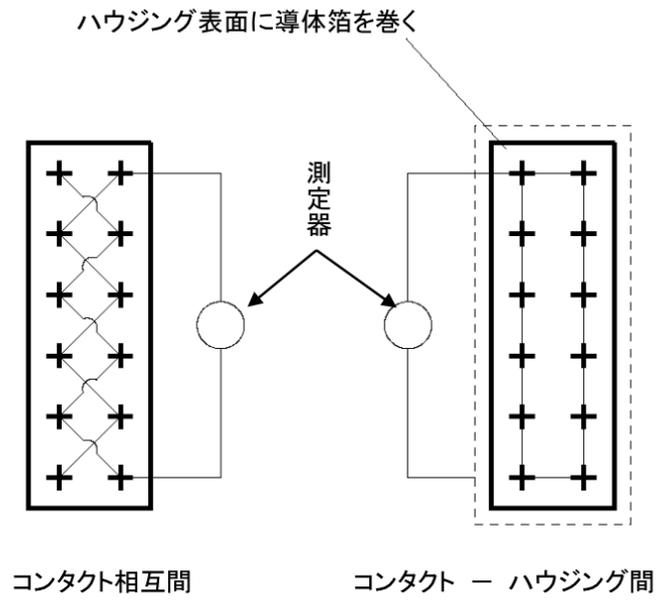


Fig.4

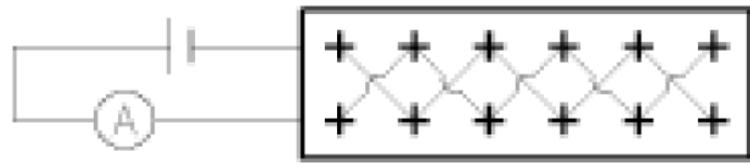


Fig.5

Wire Size (mm ²)	Test Current (A)	Duration
0.5	16.5	60 min.
	20.2	200 sec.
	22.5	5 sec.
	30.0	1 sec.

Fig.6

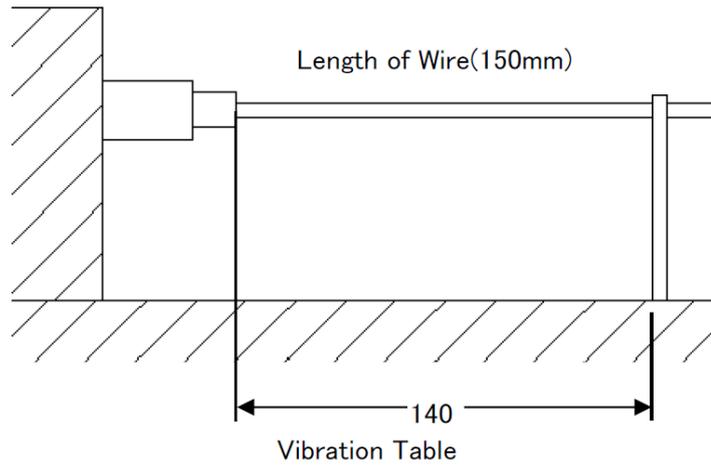


Fig.7

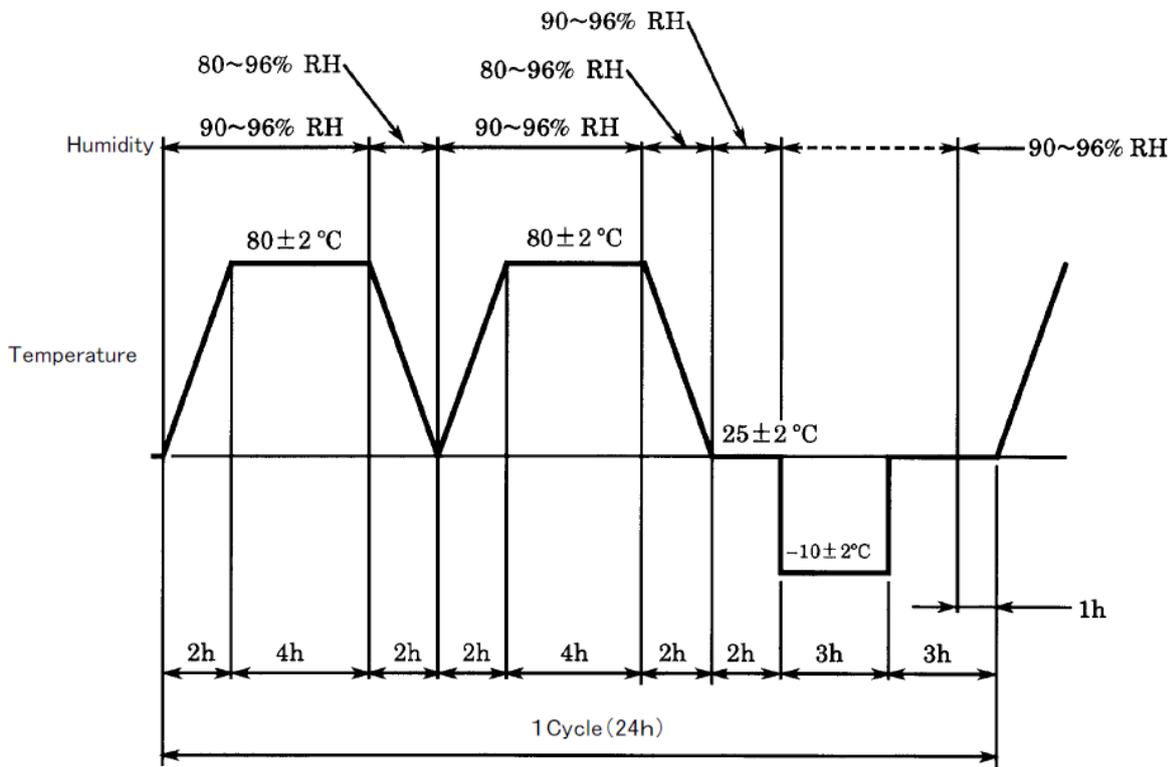


Fig.8

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Kind of Connectors	Wire Size(mm ²)	Test Current(A)	Temperature Rise
12 POS. 90 degree	0.5	5	60°C max.
12 POS. 180 degree	0.5	5.5	
32 POS.	0.5	2.2	
40 POS.	0.5	2.2	

Fig.9

Kind of Connectors	Wire Size(mm ²)	Test Current(A)	Test Time
12 POS.	0.5	3	45min. ON、 15min. OFF 300cycles
32 POS.	0.5	1.2	
40 POS.	0.5	1.2	

Fig.10

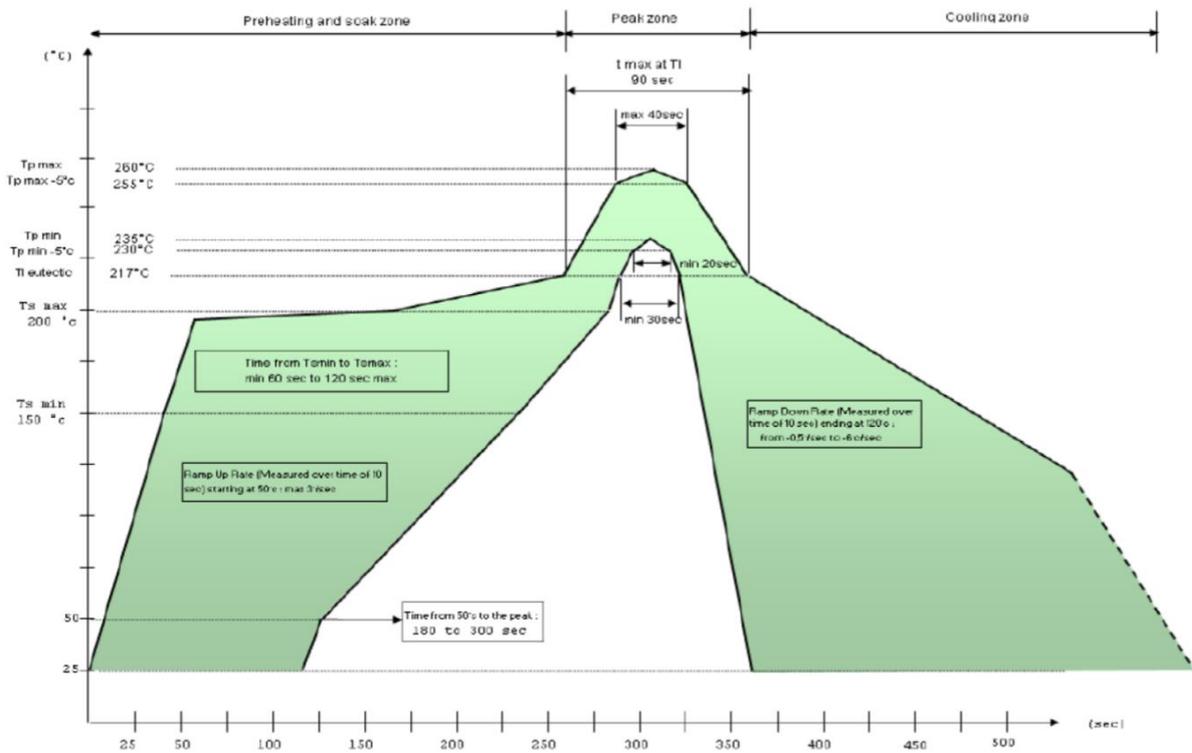


Fig.11