



250 SERIES HOUSING LANCE CONNECTOR

1. INTRODUCTION

1.1 Purpose

This is a product qualification test. The purpose of this test is to evaluate the performance of 250 SERIES HOUSING LANCE CONNECTOR. Testing was performed on below products to determine its compliance with the requirements of 108-5153, Rev. C.

1.2 Scope

This report covers the Mechanical performance of 250 SERIES HOUSING LANCE CONNECTOR. Testing was performed at TE Connectivity Shanghai Electrical Test Laboratory (Building ID 554) between 2023-05-19 and 2023-11-28.

The associated test number is TP-23-03792 and TP-23-03112.

1.3 Conclusion

Based on the test results, all samples meet the requirement according to customer requirement.

The testing results are only responsible for the specimens tested.

1.4 Test Specimens

Specimens with the following part numbers were used for test:

Test Group	Set Group Name	Part No.	Rev.	Description	Qty. (pcs)
1	SG1_1-172127-1,1-172128-1_1P_1573672-2	1-172127-1	/	FF 250 REC HSG 1P NYLON NAT	5
1	SG1_1-172127-1,1-172128-1_1P_1573672-2	170340-1	/	FF 250 TAB 20-14AWG BR WITHOUT LATCH	5
1	SG1_1-172127-1,1-172128-1_1P_1573672-2	1-172128-1	/	FF 250 PLUG HSG 1P NYLON NAT	5
1	SG1_1-172127-1,1-172128-1_1P_1573672-2	170032-1	/	250 FASTON, REC.,20-14 AWG, BR	5
1	SG2_1-172129-1,1-172130-1_2P_1573672-2	1-172129-1	/	250 FASTON HSG, CAP 2P NATURAL	5
1	SG2_1-172129-1,1-172130-1_2P_1573672-2	170340-1	/	FF 250 TAB 20-14AWG BR WITHOUT LATCH	5
1	SG2_1-172129-1,1-172130-1_2P_1573672-2	1-172130-1	/	250 FASTON HSG. REC 2P NATURAL	5
1	SG2_1-172129-1,1-172130-1_2P_1573672-2	170342-1	/	250 FASTON, REC.,20-14 AWG, BR	5



Test Group	Set Group Name	Part No.	Rev.	Description	Qty. (pcs)
1	SG3_1-172134-1, 172133-1_4P_1573672-2	172133-1	/	FF 250 REC HSG 4P NYLON NAT	5
1	SG3_1-172134-1, 172133-1_4P_1573672-2	170340-1	/	FF 250 TAB 20-14AWG BR WITHOUT LATCH	5
1	SG3_1-172134-1, 172133-1_4P_1573672-2	1-172134-1	/	250 SERIES HOUSING LANCE CONNE	5
1	SG3_1-172134-1, 172133-1_4P_1573672-2	170342-1	/	250 FASTON, REC.,20-14 AWG, BR	5
2	SG1_1-172127-1,1-172128-1_1P	1-172127-1	G	FF 250 REC HSG 1P NYLON NAT	5
2	SG1_1-172127-1,1-172128-1_1P	1-172128-1	F	FF 250 PLUG HSG 1P NYLON NAT	5
2	SG1_1-172127-1,1-172128-1_1P	170341-1	J	FF 250 TAB 14-12AWG BR WITHOUT LATCH	5
2	SG1_1-172127-1,1-172128-1_1P	170384-1	G	250 FASTON REC. 22-20AWG BR	5
2	SG2_1-172129-1,1-172130-1_2P	1-172129-1	F	250 FASTON HSG, CAP 2P NATURAL	5
2	SG2_1-172129-1,1-172130-1_2P	1-172130-1	D	250 FASTON HSG. REC 2P NATURAL	5
2	SG2_1-172129-1,1-172130-1_2P	170341-1	J	FF 250 TAB 14-12AWG BR WITHOUT LATCH	5
2	SG2_1-172129-1,1-172130-1_2P	170384-1	G	250 FASTON REC. 22-20AWG BR	5
2	SG3_172133-1,1-172134-1_2P	172133-1	L	FF 250 CAP HSG 4P NYLON NAT	5
2	SG3_172133-1,1-172134-1_2P	1-172134-1	K	250 SERIES HOUSING LANCE CONNE	5
2	SG3_172133-1,1-172134-1_2P	170341-1	J	FF 250 TAB 14-12AWG BR WITHOUT LATCH	5
2	SG3_172133-1,1-172134-1_2P	170384-1	G	250 FASTON REC. 22-20AWG BR	5
3	SG1_1-172127-1,1-172128-1_1P_1573672-2	1-172127-1	/	FF 250 REC HSG 1P NYLON NAT	5
3	SG1_1-172127-1,1-172128-1_1P_1573672-2	170340-1	/	FF 250 TAB 20-14AWG BR WITHOUT LATCH	5
3	SG1_1-172127-1,1-172128-1_1P_1573672-2	1-172128-1	/	FF 250 PLUG HSG 1P NYLON NAT	5



Test Group	Set Group Name	Part No.	Rev.	Description	Qty. (pcs)
3	SG1_1-172127-1,1-172128-1_1P_1573672-2	170032-1	/	250 FASTON, REC.,20-14 AWG, BR	5
3	SG2_1-172129-1,1-172130-1_2P_1573672-2	1-172129-1	/	250 FASTON HSG, CAP 2P NATURAL	5
3	SG2_1-172129-1,1-172130-1_2P_1573672-2	170340-1	/	FF 250 TAB 20-14AWG BR WITHOUT LATCH	10
3	SG2_1-172129-1,1-172130-1_2P_1573672-2	1-172130-1	/	250 FASTON HSG. REC 2P NATURAL	5
3	SG2_1-172129-1,1-172130-1_2P_1573672-2	170342-1	/	250 FASTON, REC.,20-14 AWG, BR	10
3	SG3_1-172134-1, 172133-1_4P_1573672-2	172133-1	/	FF 250 REC HSG 4P NYLON NAT	5
3	SG3_1-172134-1, 172133-1_4P_1573672-2	170340-1	/	FF 250 TAB 20-14AWG BR WITHOUT LATCH	20
3	SG3_1-172134-1, 172133-1_4P_1573672-2	1-172134-1	/	250 SERIES HOUSING LANCE CONNE	5
3	SG3_1-172134-1, 172133-1_4P_1573672-2	170342-1	/	250 FASTON, REC.,20-14 AWG, BR	20
4	SG1_1-172127-1,1-172128-1_1P_1573672-2	1-172127-1	/	FF 250 REC HSG 1P NYLON NAT	5
4	SG1_1-172127-1,1-172128-1_1P_1573672-2	170340-1	/	FF 250 TAB 20-14AWG BR WITHOUT LATCH	5
4	SG1_1-172127-1,1-172128-1_1P_1573672-2	1-172128-1	/	FF 250 PLUG HSG 1P NYLON NAT	5
4	SG1_1-172127-1,1-172128-1_1P_1573672-2	170032-1	/	250 FASTON, REC.,20-14 AWG, BR	5
4	SG2_1-172129-1,1-172130-1_2P_1573672-2	1-172129-1	/	250 FASTON HSG, CAP 2P NATURAL	5
4	SG2_1-172129-1,1-172130-1_2P_1573672-2	170340-1	/	FF 250 TAB 20-14AWG BR WITHOUT LATCH	5
4	SG2_1-172129-1,1-172130-1_2P_1573672-2	1-172130-1	/	250 FASTON HSG. REC 2P NATURAL	5
4	SG2_1-172129-1,1-172130-1_2P_1573672-2	170342-1	/	250 FASTON, REC.,20-14 AWG, BR	5
4	SG3_1-172134-1, 172133-1_4P_1573672-2	172133-1	/	FF 250 REC HSG 4P NYLON NAT	5
4	SG3_1-172134-1, 172133-1_4P_1573672-2	170340-1	/	FF 250 TAB 20-14AWG BR WITHOUT LATCH	5



Test Group	Set Group Name	Part No.	Rev.	Description	Qty. (pcs)
4	SG3_1-172134-1, 172133-1_4P_1573672-2	1-172134-1	/	250 SERIES HOUSING LANCE CONNE	5
4	SG3_1-172134-1, 172133-1_4P_1573672-2	170342-1	/	250 FASTON, REC.,20-14 AWG, BR	5
5	SG1_1-172127-1,1-172128-1_1P_1573672-2	1-172127-1	/	FF 250 REC HSG 1P NYLON NAT	5
5	SG1_1-172127-1,1-172128-1_1P_1573672-2	1-172128-1	/	FF 250 PLUG HSG 1P NYLON NAT	5
5	SG2_1-172129-1,1-172130-1_2P_1573672-2	1-172129-1	/	250 FASTON HSG, CAP 2P NATURAL	5
5	SG2_1-172129-1,1-172130-1_2P_1573672-2	1-172130-1	/	250 FASTON HSG. REC 2P NATURAL	5
5	SG3_1-172134-1, 172133-1_4P_1573672-2	172133-1	/	FF 250 REC HSG 4P NYLON NAT	5
5	SG3_1-172134-1, 172133-1_4P_1573672-2	1-172134-1	/	250 SERIES HOUSING LANCE CONNE	5

1.5 Test Specimens

Test Item	Test Group ^a				
	1	2	3	4	5
	Test Sequence ^b				
Vibration			2		
Mating Force & Un-mating Force		2			
Retention Force	2				
Low Level Contact Resistance			3		
Examination of Product	1	1	1,4	1	1
Housing Locking Mechanical Strength					2
Insertion Force				2	

Note: a). Test group defined per customer requirement.
b). Numbers indicate sequence in which tests are performed.

1.6 Environmental Conditions

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

Temperature: 15°C to 35°C
Relative Humidity: 25 %RH to 75 %RH



2. Test Procedures and Requirements

No.	Test Item	Requirement	Procedure	Method
2.1	Vibration	No physical damage nor electrical discontinuity greater than 1 μ s.	Subject mated specimen under 4.55G sinusoidal vibration, only do Y and Z direction, each direction 100h, total 200h, and each 50h exchange the direction.	Customer Requirement
2.2	Mating Force & Un-mating Force	Mating Force: SG1 & SG2: 29 N Max. SG3: 49 N Max. Un-mating Force: SG1: 5 N Min. SG2: 7 N Min. SG3: 20 N Min.	Measure the force required to mate/un-mate connectors at a rate of 100 mm/min.	Customized Requirement
2.3	Retention Force	59 N Min.	Measure the axial force required to remove contact crimped by wire from the housing at a rate of 100 mm/min.	Customer Requirement
2.4	Low Level Contact Resistance	10 m Ω Max.	Subject mated contact assembled in housing to 20 mV maximum open circuit at 100 mA maximum.	Customer Requirement
2.5	Examination of Product	No physical damage.	Visual Inspection: Appearance and function examination according to the applicable inspection spec.	Customer Requirement
2.6	Housing Locking Mechanical Strength	78.4 N Min.	Measure connector locking strength with the locking latches are fully engaged at a rate of 12.7 mm/min.	Customer Requirement
2.7	Insertion Force	20 N Max.	Measure force push the terminal into the housing at a rate of 25.4 mm/min.	Customer Requirement

3. SUMMARY OF TEST

Test Group	Test Sequence	Set Group Name	Test Item	Qty (pcs)	Test Result				Requirement	Conclusion	
					Max.	Min.	Avg.	Unit			
1	1	Total samples	Examination of Product	30	No physical damage.				/	No physical damage.	Meet Spec.
1	2	SG1_1-172127-1_1P_1573672-2	Retention Force	5	168.0	159.7	164.7	N	59 N Min.	Meet Spec.	
1	2	SG1_1-172128-1_1P_1573672-2	Retention Force	5	168.1	134.2	153.2	N	59 N Min.	Meet Spec.	
1	2	SG2_1-172129-1_2P_1573672-2	Retention Force	5	155.7	138.3	147.1	N	59 N Min.	Meet Spec.	
1	2	SG2_1-172130-	Retention	5	173.2	157.4	163.5	N	59 N Min.	Meet Spec.	



		1_2P_1573672-2	Force							
1	2	SG3_172133-1_4P_1573672-2	Retention Force	5	204.4	173.9	187.5	N	59 N Min.	Meet Spec.
1	2	SG3_1-172134-1_4P_1573672-2	Retention Force	5	217.7	160.9	183.1	N	59 N Min.	Meet Spec.
2	1	Total Samples	Examination of Product	15	No physical damage.			/	No physical damage.	Meet Spec.
2	2	SG1_1-172127-1,1-172128-1_1P_1573672-2	Mating Force	5	9.45	5.67	7.29	N	29 N Max.	Meet Spec.
2	2	SG2_1-172129-1,1-172130-1_2P_1573672-2	Mating Force	5	18.76	14.77	16.53	N	29 N Max.	Meet Spec.
2	2	SG3_1-172134-1,172133-1_4P_1573672-2	Mating Force	5	27.73	25.52	26.26	N	49 N Max.	Meet Spec.
2	2	SG1_1-172127-1,1-172128-1_1P_1573672-2	Un-mating Force	5	9.04	6.04	7.09	N	5 N Min.	Meet Spec.
2	2	SG2_1-172129-1,1-172130-1_2P_1573672-2	Un-mating Force	5	13.12	10.10	11.64	N	7 N Min.	Meet Spec.
2	2	SG3_1-172134-1,172133-1_4P_1573672-2	Un-mating Force	5	25.03	20.42	22.75	N	20 N Min.	Meet Spec.
3	1	Total Samples	Examination of Product	15	No physical damage.			/	No physical damage.	Meet Spec.
3	2	Total Samples	Vibration	15	No physical damage nor electrical discontinuity greater than 1 μ s.			/	No physical damage nor electrical discontinuity greater than 1 μ s.	Meet Spec.
3	3	SG1_1-172127-1,1-172128-1_1P_1573672-2	Low Level Contact Resistance	5	2.20	1.94	2.06	m Ω	10 m Ω Max.	Meet Spec.
3	3	SG2_1-172129-1,1-172130-1_2P_1573672-2	Low Level Contact Resistance	5	4.31	2.68	3.48	m Ω	10 m Ω Max.	Meet Spec.
3	3	SG3_1-172134-1,172133-1_4P_1573672-2	Low Level Contact Resistance	5	6.01	1.70	3.01	m Ω	10 m Ω Max.	Meet Spec.
3	4	Total Samples	Examination of Product	15	No physical damage.			/	No physical damage.	Meet Spec.
4	1	Total Samples	Examination of Product	30	No physical damage.			/	No physical damage.	Meet Spec.



4	2	SG1_1-172127-1_1P_1573672-2	Insertion Force	5	10.5	8.3	9.1	N	20 N Max.	Meet Spec.
4	2	SG1_1-172128-1_1P_1573672-2	Insertion Force	5	10.1	8.9	9.5	N	20 N Max.	Meet Spec.
4	2	SG2_1-172129-1_2P_1573672-2	Insertion Force	5	10.8	8.2	9.1	N	20 N Max.	Meet Spec.
4	2	SG2_1-172130-1_2P_1573672-2	Insertion Force	5	11.3	9.1	9.8	N	20 N Max.	Meet Spec.
4	2	SG3_172133-1_4P_1573672-2	Insertion Force	5	10.7	8.0	9.2	N	20 N Max.	Meet Spec.
4	2	SG3_1-172134-1_4P_1573672-2	Insertion Force	5	11.4	8.2	9.1	N	20 N Max.	Meet Spec.
5	1	Total Samples	Examination of Product	15	No physical damage.			/	No physical damage.	Meet Spec.
5	2	SG1_1-172127-1,1-172128-1_1P_1573672-2	Housing Locking Mechanical Strength	5	249.2	178.9	212.8	N	78.4 N Min.	Meet Spec.
5	2	SG2_1-172129-1,1-172130-1_2P_1573672-2	Housing Locking Mechanical Strength	5	265.9	220.5	236.1	N	78.4 N Min.	Meet Spec.
5	2	SG3_1-172134-1,172133-1_4P_1573672-2	Housing Locking Mechanical Strength	5	137.8	126.6	134.7	N	78.4 N Min.	Meet Spec.



4. VALIDATION

Requested by:

Cho, Byung Hee

2023-04-10

TE Connectivity Product Engineering

Prepared by:

John Han

2023-12-07

TE Connectivity Shanghai Electrical Components Test Lab.

Approved by:

Co L

2023-12-08

Test Manager

TE Connectivity Shanghai Electrical Components Test Lab.

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