



SGI 1.50 & 1.25 Qualification Test Report

1. INTRODUCTION

1.1. Purpose

Testing was performed on the TE Connectivity (TE) SGI 1.50 & 1.25 single row connectors to determine its conformance to the requirements of 108-106451, Revision A.

1.2. Scope

This report covers the electrical, mechanical, and environmental performance of SGI 1.50 & 1.25 single row connectors. Testing was performed at Shanghai Electrical Components Test Laboratory. The test file numbers below for this testing are on file and maintained at TE Shanghai Electrical Components Test Laboratory.

- TP-21-03929-RECORD
- TP-21-02612-RECORD
- TP-21-02882-RECORD
- TP-21-03373-RECORD
- TP-22-01179-RECORD
- TP-22-01284-RECORD
- TP-22-02596-RECORD

1.3. Conclusion

All part numbers listed in paragraph 1.5 conformed to the electrical, mechanical, and environmental performance requirements of Product Specification 108-106451, Revision A.

1.4. Product Description

TE SGI 1.50 & 1.25 single row connectors are designed to accept 24-28 AWG wire for SGI 1.50 and 26-30 AWG wire for SGI 1.25. It is available in 2-12 positions for SGI 1.50 and 2-18 positions for SGI 1.25.

1.5. Test Specimens

The test specimens were representative of normal production lots, and the following part numbers were used for testing (See table 1).

1.6. Revision History

- Revise the document to cover test results for other positions.

Table 1 – Specimen Identification

Test Group	Qty	Part Number	Description
1, 2, 3, 5, 12, 13, 14, 15, 16	3	2-2360545-8	SGI 1.50 header assembly, RA, 8pos
	3	2-2382946-8	SGI 1.50 plug housing, 8pos
	24	2371403-2	SGI 1.50 crimp terminal with 26awg wire
	3	2-2383410-8	SGI 1.50 TPA, 8pos
	3	2-2360545-9	SGI 1.50 header assembly, RA, 9pos
	3	2-2382946-9	SGI 1.50 plug housing, 9pos
	27	2371403-2	SGI 1.50 crimp terminal with 26awg wire
	3	2-2383410-9	SGI 1.50 TPA, 9pos
	3	2360540-4	SGI 1.25 header assembly, VT, 4pos
	3	2371404-4	SGI 1.25 plug housing, 4pos
	12	2371403-1	SGI 1.25 crimp terminal with 28awg wire
	3	2360538-8	SGI 1.25 header assembly, RA, 8pos
	3	2371404-8	SGI 1.25 plug housing, 8pos
	24	2371403-1	SGI 1.25 crimp terminal with 28awg wire
4	15	2360545-5	SGI 1.50 header assembly, RA, 5pos
	15	2382946-5	SGI 1.50 plug housing, 5pos
	15	2-2383410-5	SGI 1.50 TPA, 5pos
	15	2-2360545-8	SGI 1.50 header assembly, RA, 8pos
	15	2-2382946-8	SGI 1.50 plug housing, 8pos
	15	2-2383410-8	SGI 1.50 TPA, 8pos
	15	1-2360545-2	SGI 1.50 header assembly, RA, 12pos
	15	1-2382946-2	SGI 1.50 plug housing, 12pos
	15	1-2383410-2	SGI 1.50 TPA, 12pos
	125	2371403-2	SGI 1.50 crimp terminal with 24awg wire
	125	2371403-2	SGI 1.50 crimp terminal with 26awg wire
	125	2371403-2	SGI 1.50 crimp terminal with 28awg wire
	15	2360540-5	SGI 1.25 header assembly, VT, 5pos
	15	2371404-5	SGI 1.25 plug housing, 5pos
	15	2360540-8	SGI 1.25 header assembly, VT, 8pos
	15	2371404-8	SGI 1.25 plug housing, 8pos
	15	1-2360540-1	SGI 1.25 header assembly, VT, 11pos
	15	1-2371404-1	SGI 1.25 plug housing, 11pos
	15	1-2360540-5	SGI 1.25 header assembly, VT, 15pos
	15	1-2371404-5	SGI 1.25 plug housing, 15pos
6	10	2371403-2	SGI 1.50 crimp terminal with 24awg wire
	10	2371403-2	SGI 1.50 crimp terminal with 26awg wire
	10	2371403-2	SGI 1.50 crimp terminal with 28awg wire
	10	2371403-1	SGI 1.25 crimp terminal with 26awg wire
	10	2371403-1	SGI 1.25 crimp terminal with 28awg wire
	10	2371403-1	SGI 1.25 crimp terminal with 30awg wire
7,10,11	3	2-2360545-8	SGI 1.50 header assembly, RA, 8pos
	3	2-2360545-9	SGI 1.50 header assembly, RA, 9pos
	3	2360540-4	SGI 1.25 header assembly, VT, 4pos
	3	2360538-8	SGI 1.25 header assembly, RA, 8pos
8	3	2-2382946-8	SGI 1.50 plug housing, 8pos
	3	2-2382946-9	SGI 1.50 plug housing, 9pos
	20	2371403-2	SGI 1.50 crimp terminal with 26awg wire
	3	2371404-4	SGI 1.25 plug housing, 4pos
	3	2371404-8	SGI 1.25 plug housing, 8pos
	20	2371403-1	SGI 1.25 crimp terminal with 28awg wire
9	3	2-2360545-8	SGI 1.50 header assembly, RA, 8pos

3	2-2382946-8	SGI 1.50 plug housing, 8pos
24	2371403-2	SGI 1.50 crimp terminal with 26awg wire
3	2-2383410-8	SGI 1.50 TPA, 8pos
3	2-2360545-9	SGI 1.50 header assembly, RA, 9pos
3	2-2382946-9	SGI 1.50 plug housing, 9pos
27	2371403-2	SGI 1.50 crimp terminal with 26awg wire
3	2-2383410-9	SGI 1.50 TPA, 9pos
3	2360540-4	SGI 1.25 header assembly, VT, 4pos
3	2371404-4	SGI 1.25 plug housing, 4pos
12	2371403-1	SGI 1.25 crimp terminal with 28awg wire
3	2360538-8	SGI 1.25 header assembly, RA, 8pos
3	2371404-8	SGI 1.25 plug housing, 8pos
24	2371403-1	SGI 1.25 crimp terminal with 28awg wire
3	2360540-2	SGI 1.25 header assembly, VT, 2pos
3	2371404-2	SGI 1.25 plug housing, 2pos
6	2371403-1	SGI 1.25 crimp terminal with 30awg wire
3	2360540-3	SGI 1.25 header assembly, VT, 3pos
3	2371404-3	SGI 1.25 plug housing, 3pos
9	2371403-1	SGI 1.25 crimp terminal with 30awg wire
3	2360540-5	SGI 1.25 header assembly, VT, 5pos
3	2371404-3	SGI 1.25 plug housing, 5pos
15	2371403-1	SGI 1.25 crimp terminal with 30awg wire
3	2360540-6	SGI 1.25 header assembly, VT, 6pos
3	2371404-3	SGI 1.25 plug housing, 6pos
18	2371403-1	SGI 1.25 crimp terminal with 30awg wire
3	2360540-7	SGI 1.25 header assembly, VT, 7pos
3	2371404-7	SGI 1.25 plug housing, 7pos
21	2371403-1	SGI 1.25 crimp terminal with 30awg wire
3	1-2360540-0	SGI 1.25 header assembly, VT, 10pos
3	1-2371404-0	SGI 1.25 plug housing, 10pos
30	2371403-1	SGI 1.25 crimp terminal with 30awg wire
3	1-2360540-1	SGI 1.25 header assembly, VT, 11pos
3	1-2371404-1	SGI 1.25 plug housing, 11pos
33	2371403-1	SGI 1.25 crimp terminal with 30awg wire
3	1-2360540-2	SGI 1.25 header assembly, VT, 12pos
3	1-2371404-2	SGI 1.25 plug housing, 12pos
36	2371403-1	SGI 1.25 crimp terminal with 30awg wire
3	1-2360540-8	SGI 1.25 header assembly, VT, 18pos
3	1-2371404-8	SGI 1.25 plug housing, 18pos
54	2371403-1	SGI 1.25 crimp terminal with 30awg wire
3	2-2360547-2	SGI 1.50 header assembly, VT, 2pos
3	2-2382946-2	SGI 1.50 plug housing, 2pos
6	2371403-2	SGI 1.50 crimp terminal with 28awg wire
3	2-2383410-2	SGI 1.50 TPA, 2pos
3	2-2360547-3	SGI 1.50 header assembly, VT, 3pos
3	2-2382946-3	SGI 1.50 plug housing, 3pos
9	2371403-2	SGI 1.50 crimp terminal with 28awg wire
3	2-2383410-3	SGI 1.50 TPA, 3pos
3	2360547-4	SGI 1.50 header assembly, VT, 4pos
3	2382946-4	SGI 1.50 plug housing, 4pos
12	2371403-2	SGI 1.50 crimp terminal with 28awg wire
3	2383410-4	SGI 1.50 TPA, 4pos
3	2360547-5	SGI 1.50 header assembly, VT, 5pos
3	2382946-5	SGI 1.50 plug housing, 5pos
15	2371403-2	SGI 1.50 crimp terminal with 28awg wire
3	2383410-5	SGI 1.50 TPA, 5pos
3	2360547-6	SGI 1.50 header assembly, VT, 6pos
3	2382946-6	SGI 1.50 plug housing, 6pos

18	2371403-2	SGI 1.50 crimp terminal with 28awg wire
3	2383410-6	SGI 1.50 TPA, 6pos
3	2360547-7	SGI 1.50 header assembly, VT, 7pos
3	2382946-7	SGI 1.50 plug housing, 7pos
21	2371403-2	SGI 1.50 crimp terminal with 28awg wire
3	2383410-7	SGI 1.50 TPA, 7pos
3	3-2360547-0	SGI 1.50 header assembly, VT, 10pos
3	3-2382946-0	SGI 1.50 plug housing, 10pos
30	2371403-2	SGI 1.50 crimp terminal with 28awg wire
3	3-2383410-0	SGI 1.50 TPA, 10pos
3	3-2360547-1	SGI 1.50 header assembly, VT, 11pos
3	3-2382946-1	SGI 1.50 plug housing, 11pos
33	2371403-2	SGI 1.50 crimp terminal with 28awg wire
3	3-2383410-1	SGI 1.50 TPA, 11pos
3	1-2360547-2	SGI 1.50 header assembly, VT, 12pos
3	1-2382946-2	SGI 1.50 plug housing, 12pos
36	2371403-2	SGI 1.50 crimp terminal with 28awg wire
3	1-2383410-2	SGI 1.50 TPA, 12pos

1.7. Qualification Test Sequence

TEST OR EXAMINATION	TEST GROUP (a)															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	TEST SEQUENCE (b)															
Initial examination of product	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LLCR	3,7	2,4	2,5									2,4	2,4	2,4	2,4	
Withstanding Voltage					3,7											
Insulation Resistance					2,6											
Temperature Rise vs. Current				2												
Sinusoidal Vibration	5															
Mechanical Shock	6															
Durability	4															
Durability Preconditioning			3													
Connector Mating Force	2															
Connector Unmating Force	8															
Crimp Tensile Strength						2										
Contact Insertion Force								2								
Contact Retention Force								3								
Resistance to Soldering Heat							2									
Connector Locking Strength									2							
Post Retention Force										2						
Solderability											2					
Thermal Shock					4											
Humidity/Temperature Cycling			4		5											
Temperature Life		3														
Salt Spray												3				
Hydrogen Sulfide													3			
Ammonia														3		
Resistance to Cold															3	
Glow Wire Test																2
Final Examination of Product	9	5	6	3	8	3	3	4	3	3	3	5	5	5	5	3

Table 2 – Test Sequence



NOTE

- (a) See Paragraph 1.5
- (b) Numbers indicate sequence which tests were performed.

1.8. Environmental Conditions

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

Temperature: 15°C to 35°C
Relative Humidity: 20% to 80%

2. SUMMARY OF TESTING

Group	SN	Test Item	Sample		Test Result				Requirement	Conclusion
			Pitch	Pos	Max	Min	Avg	Unit		
1	1	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
	2	Connector Mating Force	1.50	8	13.8	10.4	12.4	N	24 max.	Meet
			1.50	9	10.6	9.8	10.2	N	25.5 max.	Meet
			1.25	4	7.5	6.9	7.3	N	18 max.	Meet
			1.25	8	13.9	13.0	13.4	N	24 max.	Meet
	3	LLCR	1.50	8	6.77	6.00	6.40	mΩ	20 max.	Meet
			1.50	9	6.81	5.87	6.45	mΩ		Meet
			1.25	4	6.94	5.83	6.54	mΩ		Meet
			1.25	8	7.03	6.22	6.59	mΩ		Meet
	4	Durability	-	-	No physical damage		-		No physical damage	Meet
	5	Sinusoidal Vibration	-	-	No physical damage or no electrical discontinuity greater than 1 μs		-		No physical damage or no electrical discontinuity greater than 1 μs	Meet
	6	Mechanical Shock	-	-	No physical damage or no electrical discontinuity greater than 1 μs		-		No physical damage or no electrical discontinuity greater than 1 μs	Meet
	7	LLCR	1.50	8	11.0 6	5.44	8.66	mΩ	40 max.	Meet
			1.50	9	10.9 2	5.17	8.05	mΩ		Meet
			1.25	4	9.82	6.25	7.92	mΩ		Meet
			1.25	8	11.0 2	5.47	7.30	mΩ		Meet
	8	Connector	1.50	8	7.4	7.0	7.2	N	4.0 min.	Meet

		Unmating Force	1.50	9	7.1	6.7	6.9	N	4.5 min.	Meet
			1.25	4	3.41	2.98	3.23	N	2.0 min.	Meet
			1.25	8	6.66	5.73	6.23	N	4.0 min.	Meet
	9	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
2	1	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
	2	LLCR	1.50	8	6.78	5.69	6.34	mΩ	20 max.	Meet
			1.50	9	6.57	5.84	6.32	mΩ		Meet
			1.25	4	6.34	5.41	5.81	mΩ		Meet
			1.25	8	6.46	5.52	6.05	mΩ		Meet
	3	Temperature Life	-	-	No physical damage		-		No physical damage	Meet
	4	LLCR	1.50	8	7.73	6.23	6.96	mΩ	40 max.	Meet
			1.50	9	7.83	6.33	6.91	mΩ		Meet
			1.25	4	7.63	6.58	6.97	mΩ		Meet
			1.25	8	6.90	5.85	6.42	mΩ		Meet
	5	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
3	1	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
	2	LLCR	1.50	8	6.83	5.84	6.27	mΩ	20 max.	Meet
			1.50	9	6.91	6.04	6.43	mΩ		Meet
			1.25	4	6.93	6.13	6.39	mΩ		Meet
			1.25	8	6.45	5.37	6.05	mΩ		Meet
	3	Durability Preconditioning	-	-	No physical damage		-		No physical damage	Meet
	4	Humidity/Temperature Cycling	-	-	No physical damage		-		No physical damage	Meet
	5	LLCR	1.50	8	8.00	6.02	6.86	mΩ	40 max.	Meet

			1.50	9	9.01	5.78	6.97	mΩ		Meet
			1.25	4	7.58	6.42	6.83	mΩ		Meet
			1.25	8	7.74	6.18	6.97	mΩ		Meet
	6	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
4	1	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
	2	Temperature Rise vs. Current	1.50	5	< 30		°C		30 max. @ 2.5A with 24awg	Meet
			1.50	5	< 30		°C		30 max. @ 2.0A with 26awg	Meet
			1.50	5	< 30		°C		30 max. @ 1.8A with 28awg	Meet
			1.50	8	< 30		°C		30 max. @ 2.2A with 24awg	Meet
			1.50	8	< 30		°C		30 max. @ 1.8A with 26awg	Meet
			1.50	8	< 30		°C		30 max. @ 1.6A with 28awg	Meet
			1.50	12	< 30		°C		30 max. @ 2.0A with 24awg	Meet
			1.50	12	< 30		°C		30 max. @ 1.7A with 26awg	Meet
			1.50	12	< 30		°C		30 max. @ 1.5A with 28awg	Meet
			1.25	5	< 30		°C		30 max. @ 2.2A with 26awg	Meet
			1.25	5	< 30		°C		30 max. @ 1.9A with 28awg	Meet

			1.25	5	< 30	°C	30 max. @ 1.8A with 30awg	Meet
			1.25	8	< 30	°C	30 max. @ 1.8A with 26awg	Meet
			1.25	8	< 30	°C	30 max. @ 1.7A with 28awg	Meet
			1.25	8	< 30	°C	30 max. @ 1.5A with 30awg	Meet
			1.25	11	< 30	°C	30 max. @ 1.8A with 26awg	Meet
			1.25	11	< 30	°C	30 max. @ 1.6A with 28awg	Meet
			1.25	11	< 30	°C	30 max. @ 1.4A with 30awg	Meet
			1.25	15	< 30	°C	30 max. @ 1.7A with 26awg	Meet
			1.25	15	< 30	°C	30 max. @ 1.6A with 28awg	Meet
			1.25	15	< 30	°C	30 max. @ 1.3A with 30awg	Meet
			1.25	18	< 30	°C	30 max. @ 1.7A with 26awg	Meet
			1.25	18	< 30	°C	30 max. @ 1.5A with 28awg	Meet
			1.25	18	< 30	°C	30 max. @ 1.2A with 30awg	Meet
	3	Examination of Product	-	-	No physical damage	-	No physical damage	Meet

5	1	Examination of Product	-	-	No physical damage		-		No physical damage		Meet
	2	Insulation Resistance	-	-	> 0.5		10 ⁹ Ω		0.5 min.		Meet
	3	Withstand Voltage	-	-	No breakdown or flashover		-		No breakdown or flashover		Meet
	4	Thermal Shock	-	-	No physical damage		-		No physical damage		Meet
	5	Humidity/Temperature Cycling	-	-	No physical damage		-		No physical damage		Meet
	6	Insulation Resistance	-	-	> 0.1		10 ⁹ Ω		0.1 min.		Meet
	7	Withstand Voltage	-	-	No breakdown or flashover		-		No breakdown or flashover		Meet
	8	Examination of Product	-	-	No physical damage		-		No physical damage		Meet
6	1	Examination of Product	-	-	No physical damage		-		No physical damage		Meet
	2	Crimp Tensile Strength	1.50	-	63.6	45.8	54.5	N	30 min. for 24AWG	Meet	
					32.8	22.9	29.8	N	20 min. for 26AWG	Meet	
					29.4	26.4	27.8	N	11 min. for 28AWG	Meet	
			1.25	-	40.9	26.3	36.9	N	20 min. for 26AWG	Meet	
					29.0	25.3	27.0	N	11 min. for 28AWG	Meet	
					18.3	12.1	15.4	N	6 min. for 30AWG	Meet	
	3	Examination of Product	-	-	-		-		-		Meet
7	1	Examination of Product	-	-	No physical damage		-		No physical damage		Meet
	2	Resistance to Soldering	-	-	No physical		-		No physical		Meet

		Heat			damage				damage	
	3	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
8	1	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
	2	Contact Insertion Force	1.50	8	2.4	1.8	2.1	N	7.84 max.	Meet
			1.50	9	2.4	1.8	2.1	N		Meet
			1.25	4	1.4	1.1	1.2	N		Meet
			1.25	8	1.3	1.2	1.2	N		Meet
	3	Contact Retention Force	1.50	8	18.6	14.8	16.9	N	10 min.	Meet
			1.50	9	18.4	15.1	16.5	N		Meet
			1.25	4	18.8	13.1	15.2	N		Meet
			1.25	8	16.6	13.4	14.5	N		Meet
	4	Examination of Product	-	-	-		-		-	Meet
9	1	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
	2	Connector Locking Strength	1.50	2	33.3	28.3	30.3	N	10	Meet
			1.50	3	44.5	31.1	39.8	N		Meet
			1.50	4	52.6	51.6	52.0	N	19.6	Meet
			1.50	5	70.0	68.6	69.3	N		Meet
			1.50	6	68.5	64.3	65.9	N	29.4	Meet
			1.50	7	64.9	62.2	63.9	N		Meet
			1.50	8	67.7	65.9	66.7	N		Meet
			1.50	9	70.6	67.1	69.2	N		Meet
			1.50	10	69.8	66.8	68.0	N		Meet
			1.50	11	67.1	63.8	65.9	N		Meet
			1.50	12	65.4	62.1	63.5	N		Meet
			1.25	2	24.5	23.5	23.9	N	10	Meet
			1.25	3	33.7	32.8	33.2	N		Meet

			1.25	4	47.4	39.8	42.9	N	19.6	Meet
			1.25	5	53.5	53.0	53.3	N		Meet
			1.25	6	49.9	48.4	49.1	N	29.4	Meet
			1.25	7	53.1	51.5	52.3	N		Meet
			1.25	8	59.6	58.5	59.0	N		Meet
			1.25	10	51.3	49.8	50.6	N		Meet
			1.25	11	62.4	58.0	59.8	N		Meet
			1.25	12	57.6	49.8	50.6	N		Meet
			1.25	18	52.1	45.4	48.6	N		Meet
	3	Examination of Product	-	-	-	-	-	-	-	Meet
10	1	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
	2	Post Retention Force	1.50	8	33.8	29.6	31.5	N	10 min.	Meet
			1.50	9	35.4	28.8	31.1	N		Meet
			1.25	4	32.2	21.6	25.4	N		Meet
			1.25	8	33.8	25.8	29.2	N		Meet
	3	Examination of Product	-	-	-	-	-	-	-	Meet
11	1	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
	2	Solderability	-	-	Wet solder coverage 95% Min		-		Wet solder coverage 95% Min	Meet
	3	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
12	1	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
	2	LLCR	1.50	8	6.71	5.40	6.18	mΩ	20 max.	Meet
			1.50	9	6.61	5.66	6.18	mΩ		Meet
			1.25	4	6.91	5.13	5.96	mΩ		Meet
			1.25	8	6.52	4.65	5.78	mΩ		Meet

	3	Salt Spray	-	-	No physical damage		-		No physical damage	Meet
	4	LLCR	1.50	8	9.81	6.02	7.00	mΩ	40 max.	Meet
			1.50	9	9.65	6.18	7.04	mΩ		Meet
			1.25	4	7.91	6.19	7.02	mΩ		Meet
			1.25	8	7.70	5.53	6.47	mΩ		Meet
	5	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
13	1	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
	2	LLCR	1.50	8	6.88	6.28	6.51	mΩ	20 max.	Meet
			1.50	9	6.76	6.26	6.55	mΩ		Meet
			1.25	4	6.55	5.39	5.96	mΩ		Meet
			1.25	8	6.26	5.21	5.63	mΩ		Meet
	3	Hydrogen Sulfide	-	-	No physical damage		-		No physical damage	Meet
	4	LLCR	1.50	8	7.31	6.10	6.60	mΩ	40 max.	Meet
			1.50	9	7.27	6.16	6.58	mΩ		Meet
			1.25	4	7.96	5.90	6.50	mΩ		Meet
			1.25	8	6.86	5.08	6.18	mΩ		Meet
	5	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
14	1	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
	2	LLCR	1.50	8	6.15	5.19	5.68	mΩ	20 max.	Meet
			1.50	9	6.73	5.34	5.80	mΩ		Meet
			1.25	4	7.96	5.90	6.50	mΩ		Meet
			1.25	8	6.86	5.08	6.18	mΩ		Meet
	3	Ammonia	-	-	No physical damage		-		No physical damage	Meet
	4	LLCR	1.50	8	7.47	5.97	6.58	mΩ	40 max.	Meet

			1.50	9	7.84	6.05	6.55	mΩ		Meet
			1.25	4	8.04	5.63	6.46	mΩ		Meet
			1.25	8	7.18	5.60	6.40	mΩ		Meet
	5	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
15	1	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
	2	LLCR	1.50	8	6.32	5.33	5.76	mΩ	20 max.	Meet
			1.50	9	6.76	5.31	5.81	mΩ		Meet
			1.25	4	6.62	5.32	5.81	mΩ		Meet
			1.25	8	6.90	6.01	6.49	mΩ		Meet
	3	Resistance to Cold	-	-	No physical damage		-		No physical damage	Meet
	4	LLCR	1.50	8	7.17	6.02	6.64	mΩ	40 max.	Meet
			1.50	9	7.12	5.84	6.59	mΩ		Meet
			1.25	4	6.63	5.53	6.13	mΩ		Meet
			1.25	8	6.73	5.51	6.22	mΩ		Meet
	5	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
16	1	Examination of Product	-	-	No physical damage		-		No physical damage	Meet
	2	Glow Wire Test	-	-	No flame or Te - Ti < 2s		-		Test at 750°C	Meet
	3	Examination of Product	-	-	No physical damage		-		No physical damage	Meet

3. TEST METHODS

3.1. Initial/Final Examination of Product

Testing was performed in accordance with EIA-364-18. Specimens were visually examined and no evidence of physical damage detrimental to product performance was observed.

3.2. LLCR

Testing was performed in accordance with EIA 364-23 using a test current of 100 mA and a test voltage limited to 20mV.

3.3. Withstand Voltage

Testing was performed in accordance with EIA-364-20, condition I. A test potential of 500VAC was applied by the adjacent contacts of mated specimens. This potential was applied for 1 minute and then returned to zero.

3.4. Insulation Resistance

Measure and record the insulation resistance separately between the closest adjacent contacts at 500VDC for 1 minutes. Measure and record the performance of the specimens. Execute visual check after test.

3.5. Temperature Rising

Testing was performed in accordance with EIA-364-70C. Thermocouples were soldered to each test specimen. Test specimens were connected in series in a draft free chamber. Each test current was applied until specimen temperatures were stable, then recorded. Stability occurred when 3 consecutive temperature measurements taken at 5 minutes intervals did not differ by more than 1°C.

3.6. Sinusoidal Vibration

Testing was performed in accordance with EIA-364-28, Condition I, Subject mated specimens to 10 to 55 to 10Hz traversed in 1 minute with 1.5 mm maximum total excursion. Two hours in each of 3 mutually perpendicular planes.

3.7. Mechanical Shock

Testing was performed in accordance with EIA-364-27, Condition H. Subject mated connector to 30G's half -sine shock pulse of 11 ms duration. 3 drops each to normal and reversed directions of X, Y and Z axis. Total of 18 drops.

3.8. Durability / Durability Preconditioning

Testing was performed by mating and unmating test specimens for 5 or 25 cycles at a maximum rate of 500 cycles per hour.

3.9. Connector Mating Force

Testing was performed in accordance with EIA-364-13, method A. Mating force was measured with a tensile/compression machine. The plug housing was held in a vice mounted to an X-Y table rigidly clamped to the base of the tensile/compression testing machine. The moveable crosshead was lowered at a rate of 12.7 mm/min until the specimen was fully mated. The peak force required to mate the connector was recorded.

3.10. Connector Unmating Force

Testing was performed in accordance with EIA-364-13, method A. Unmating force was measured with a tensile/compression machine. The plug housing was held in a vice mounted to an X-Y table rigidly clamped to the base of the tensile/compression testing machine with the latch disengaged. The moveable crosshead was raised at a rate of 12.7 mm/min until the specimen was fully unmated. The peak force required to unmate the connector was recorded.

3.11. Crimp Tensile Strength

Testing was performed in accordance with EIA-364-8. The force load was applied to each specimen using a tensile/compression device with the rate of travel at 25.4 mm per minute. The load is applied in axial directions as specified.

3.12. Contact Insertion Force

Testing was performed in accordance with EIA-364-5. Contact insertion force was measured by applying an increasing force to each contact using a tensile/compression device with a rate of travel at 25.4 mm per minute until the contact was properly seated in the housing.

3.13. Contact Retention Force

Testing was performed in accordance with EIA-364-29, method C. Contact retention force was measured by applying an increasing force to each contact using a tensile/compression device with a rate of travel at 25.4 mm per minute until the contact was dislodged from the housing.

3.14. Resistance to Soldering Heat

Testing was performed in accordance with 109-201 condition B. Specimens were subjected to solder temperature 260 +0/-5 °C for 5 +2/-0 Second.

3.15. Connector Locking Strength

Testing was performed in accordance with EIA-364-98. Connector locking force was measured by applying an increasing force to plug using a tensile/compression device with a rate of travel at 12.7 mm per minute until the plug was dislodged from the header assembly.

3.16. Post Retention Force

Testing was performed in accordance with EIA-364-29. The force load was applied to each post contact using a tensile/compression device with the rate of travel at 25.4 mm per minute.

3.17. Solderability

Testing was performed in according with TEC-109-11 Method B, solder Temperature: 245 ± 5°C, immersion duration: 3±0.5s.

3.18. Thermal Shock

Subject mated specimens to 10 cycles between -55 and 105°C with 30 minutes dwells at temperature extremes and 5 minutes transition between temperatures.

3.19. Humidity-Temperature Cycling

Testing was performed in accordance with EIA-364-31, method IV. Subject mated specimen to 10 cycles between 25°C and 65°C at 90-95% RH. Measurements to be recorded after specimens are held for 3 hours at ambient temperature and humidity. 1 cycle is 24 hours.

3.20. Temperature Life

Testing was performed in accordance with EIA-364-17, method A. Subject mated connector to 105 ± 2°C for a duration of 96 hours. Measurements to be recorded after specimens are held for 3 hours at ambient temperature and humidity.

3.21. Salt Spray

Testing was performed in accordance with EIA-364-26, test condition B. Mated specimens were subjected to a 5% salt spray environment for 48 hours. The temperature of the box was maintained at 35°C while the pH of the salt solution was between 6.5 and 7.2.

3.22. Hydrogen Sulfide

Mated specimens were subjected to a 3±1 ppm H₂S environment for 96 hours at a temperature of 40±2°C.

3.23. Ammonia

Mated specimens were subjected to 25 mL/L of 3% NH₃ solution environment for 7 hours.

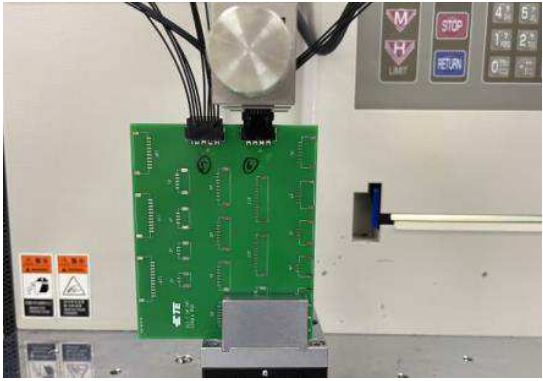
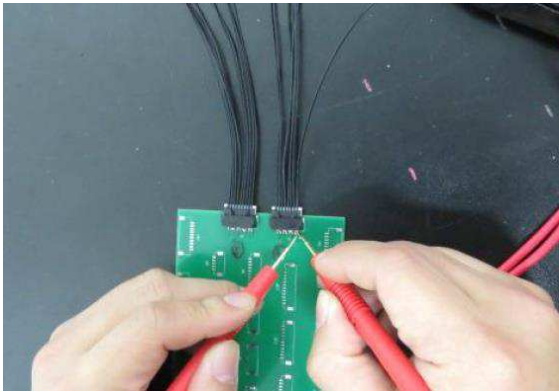
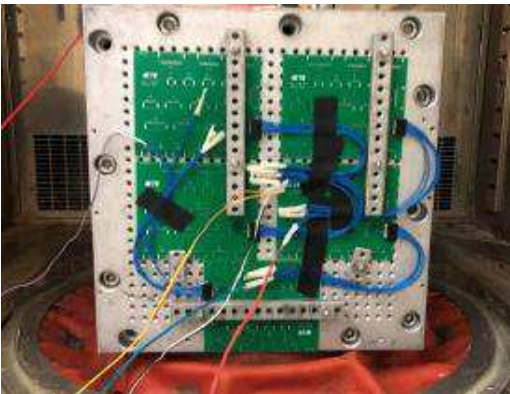
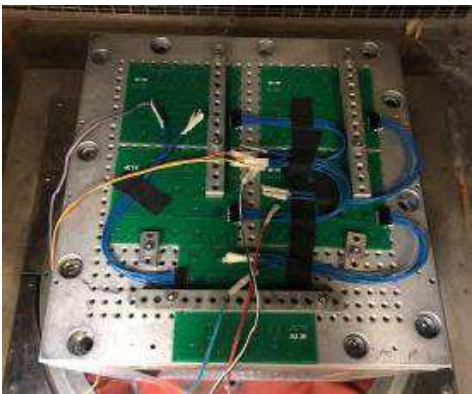

3.24. Resistance to Cold



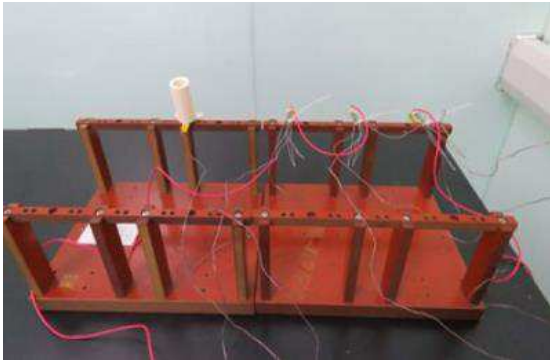
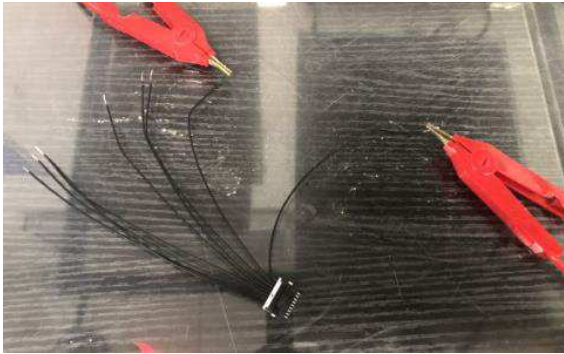

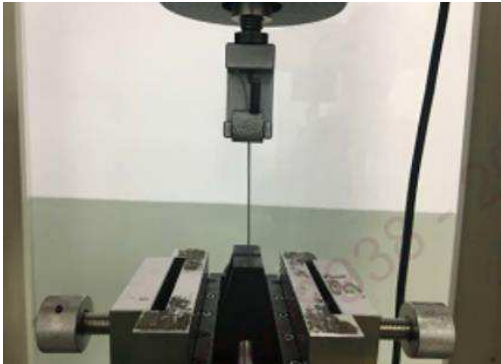
Testing was performed in accordance with IEC 60068-2-1. Mated specimens were placed in a cold storage unit at a temperature of $-40\pm 2^{\circ}\text{C}$ for 96 hours.

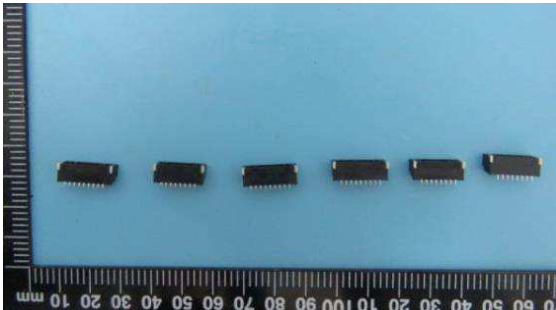
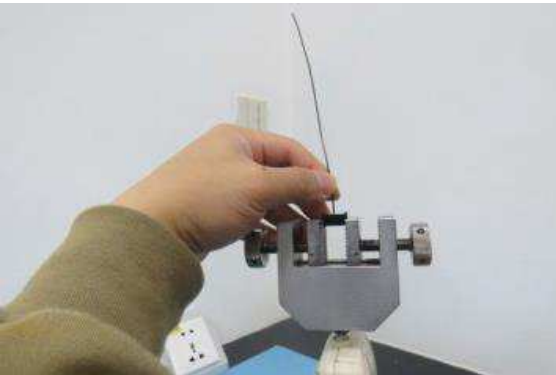


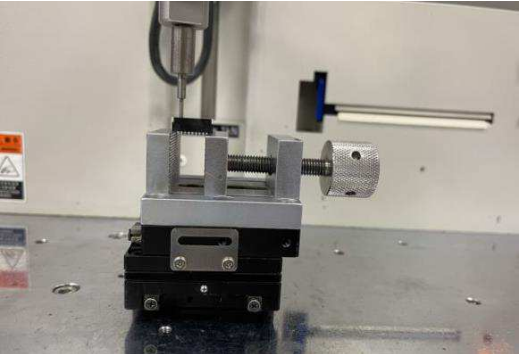
3.25. Glow Wire


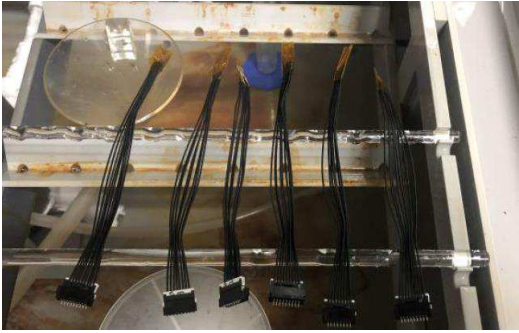
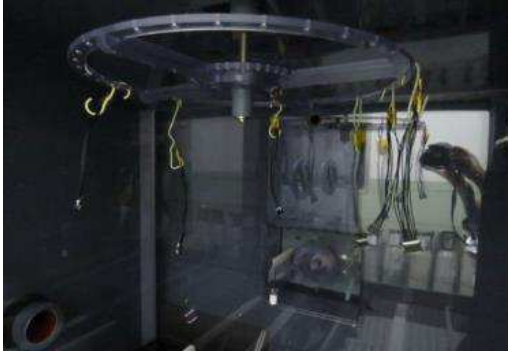

The extremity of the wire was positioned horizontally and brought into contact with the specimen with a force between 0.85N and 1.05N for a period of 30s. Penetration depth was less than 7mm, and wrapping tissue was positioned at a distance of (200 ± 5) mm below the place where the glow-wire was applied to the specimen. Test temperature: 750°C. Duration of glow tip application Ta: 30s.



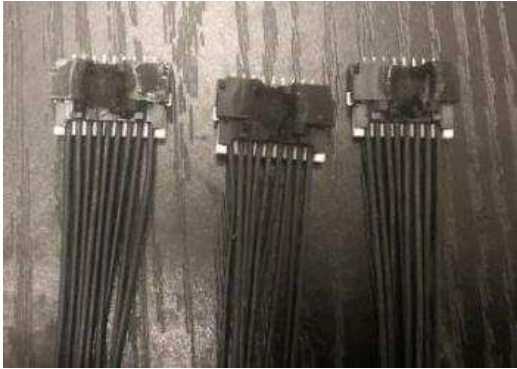
APPENDIX

Test Group	Pictures	
1	 <p data-bbox="412 726 699 758">Connector Mating Force</p>	 <p data-bbox="1110 730 1187 762">LLCR</p>
	 <p data-bbox="436 1199 675 1230">Sinusoidal Vibration</p>	 <p data-bbox="1040 1199 1256 1230">Mechanical Shock</p>
2	 <p data-bbox="451 1671 659 1703">Temperature Life</p>	

3	 <p data-bbox="402 583 704 617">Durability Preconditioning</p>	 <p data-bbox="967 560 1328 594">Humidity/Temperature Cycling</p>
4	 <p data-bbox="446 1018 660 1052">Temperature Rise</p>	
5	 <p data-bbox="427 1434 683 1467">Insulation Resistance</p>	 <p data-bbox="1057 1434 1239 1467">Thermal Shock</p>
6	 <p data-bbox="415 1873 693 1906">Crimp Tensile Strength</p>	

7	 <p data-bbox="381 514 727 548">Resistance to Soldering Heat</p>	
8	 <p data-bbox="415 995 693 1024">Contact Insertion Force</p>	 <p data-bbox="1003 976 1292 1005">Contact Retention Force</p>
9	 <p data-bbox="389 1446 719 1476">Connector Locking Strength</p>	
10	 <p data-bbox="428 1877 680 1906">Post Retention Force</p>	

11	 <p>Solderability</p>	
12	 <p>Salt Spray</p>	
13	 <p>Hydrogen Sulfide</p>	
14	 <p>Ammonia</p>	

15	 <p>Resistance to Cold</p>	
16	 <p>Before Glow Wire</p>	 <p>After Glow Wire</p>