

D-SUB, 15P, R/A, SLIM, RVS, DIP**1. INTRODUCTION****1.1. Purpose**

Testing was performed on the TE Connectivity D-SUB, 15P, R/A, SLIM, RVS, DIP TYPE Connector to determine its conformance to the requirements of Product Specification 108-57751 Revision A1.

1.2. Scope

This report covers the electrical, mechanical, and environmental performance of the TE Connectivity D-SUB, 15P, R/A, SLIM, RVS, DIP TYPE Connector.

1.3. Conclusion

The TE Connectivity D-SUB, 15P, R/A, SLIM, RVS, DIP TYPE Connector meets the electrical, mechanical, and environmental performance requirements of Product Specification 108-57751 Revision A1.

1.4. Product Description

The TE Connectivity D-SUB, 15P, R/A, SLIM, RVS, DIP TYPE Connector is designed for printed circuit board applications. The contacts are copper alloy, gold plated on the contact interface and tin plating on the soldertail, all over nickel under-plated. The housing material is glass filled insulating polymer, UL 94V-0.

1.5. Test samples

The test samples were randomly selected from normal current production lots, and the following part numbers were used for test :

Test Group	Quantity	Description	Part Number
A, B, C, D, E, F, G, H, I, J	5 EA	D-SUB, 15P, R/A, SLIM, RVS, DIP TYPE	2041127-X
A, B, C, D, E, F, G, H, I, J	5 EA	D-SUB, 15P, R/A, SLIM, REVERSED, DIP TYPE	2041475-X

1.6. Qualification Test Sequence

Test or Examination	Test Group									
	A	B	C	D	E	F	G	H	I	J
	Test Sequence (a)									
Examination of Product	1, 7	1, 9	1, 6	1, 5	1, 5	1, 5	1, 5	1, 3	1,3	1, 3
Contact Resistance		2, 8	2, 5	2, 4	2, 4	2, 4	2, 4			
Dielectric withstanding Voltage	3, 6									
Insulation Resistance	2, 5									
Temperature Rising								2		
Mating Force		3, 7								
Unmating Force		4, 6								
Durability		5								
Vibration			3 (b)							
Mechanical Shock			4 (b)							
Solderability										2
Resistance to Soldering Heat									2	
Thermal Shock				3						
Humidity Temperature Cycling	4				3					
Temperature Life						3				
Salt Spray							3			

Figure 1.

NOTE : (a) Numbers indicate sequence in which tests are performed.

(b) Discontinuities shall not take place in this test group, during tests.

2. TEST RESULT
2.1. FOR 2041127-X:

GP	Test Item	Requirement	DATA				Judgment
			Max.	Min.	Ave.	Std. Dev.	
A	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
	Insulation Resistance	1000 M Ω Min.	PASSED				ACCEPTED
	Dielectric Withstanding Voltage	No breakdown or flashover.	PASSED				ACCEPTED
	Humidity Temperature Cycling	No damage	PASSED				ACCEPTED
	Insulation Resistance	1000 M Ω Min.	PASSED				ACCEPTED
	Dielectric withstanding Voltage	No breakdown or flashover.	PASSED				ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
	B	Examination of Product	Meets Product drawing	PASSED			
Low Level Contact Resistance		20 m Ω Max.(initial)	14.4	11.8	13.1	0.95	ACCEPTED
Connector Mating Force		4.5 Kgf/Max.	3.04	2.76	2.9	0.08	ACCEPTED
Connector Unmating Force		0.45 Kgf/Min.	2.35	2.15	2.25	0.06	ACCEPTED
Durability		No Damaged	PASSED				ACCEPTED
Connector Unmating Force		0.45 Kgf/Min.	2.11	1.96	2.04	0.05	ACCEPTED
Connector Mating Force		4.5 Kgf/Max.	2.76	2.54	2.65	0.08	ACCEPTED
Low Level Contact Resistance		40 m Ω Max.(final)	14.9	13.5	14.2	0.43	ACCEPTED
Examination of Product		Meets Product drawing	PASSED				ACCEPTED
C	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
	Low Level Contact Resistance	20 m Ω Max.(initial)	12.8	11.0	11.9	0.58	ACCEPTED
	Vibration	No electrical discontinuity greater than 1 μ sec shall occur.	PASSED				ACCEPTED
	Mechanical Shock	No electrical discontinuity greater than 1 μ sec shall occur.	PASSED				ACCEPTED
	Low Level Contact Resistance	40 m Ω Max.(final)	14.6	12.9	13.7	0.64	ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
D	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
	Low Level Contact Resistance	20 m Ω Max.(initial).	12.5	10.8	11.6	0.55	ACCEPTED
	Thermal Shock	No Damaged	PASSED				ACCEPTED
	Low Level Contact Resistance	40 m Ω Max.(final)	14.2	12.6	13.4	0.48	ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED

Figure 2.1 (Cont.)

GP	Test Item	Requirement	DATA				Judgment
			Max.	Min.	Ave.	Std. Dev.	
E	Examination of Product	Meets Product drawing.	PASSED				ACCEPTED
	Low Level Contact Resistance	20 mΩ Max.(initial)	12.3	10.8	11.5	0.45	ACCEPTED
	Humidity Temperature Cycling	No damage	PASSED				ACCEPTED
	Low Level Contact Resistance	40 mΩ Max.(final)	14.9	12.6	13.7	0.62	ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
F	Examination of Product	Meets Product drawing.	PASSED				ACCEPTED
	Low Level Contact Resistance	20 mΩ Max.(initial)	12.8	10.5	11.6	0.71	ACCEPTED
	Temperature Life	No Damaged	PASSED				ACCEPTED
	Low Level Contact Resistance	40 mΩ Max.(final)	14.6	12.5	13.5	0.75	ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
G	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
	Low Level Contact Resistance	20 mΩ Max.(initial)	12.6	10.5	11.6	0.72	ACCEPTED
	Salt Spray	No damage	PASSED				ACCEPTED
	Low Level Contact Resistance	40 mΩ Max.(final)	18.3	15.2	16.8	1.18	ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
H	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
	Temperature Rising	30° C Max.	11.0	7.1	9.1	1.5	ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
I	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
	Resistance to Reflow Soldering Heat	No Damaged	PASSED				ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
J	Examination of Product	Meets Product drawing.	PASSED				ACCEPTED
	Solderability	95% Min. solder coverage	PASSED				ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED

Figure 2.1 (End)

2.2. FOR 2041475-X:

GP	Test Item	Requirement	DATA				Judgment
			Max.	Min.	Ave.	Std. Dev.	
A	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
	Insulation Resistance	1000 M Ω Min.	PASSED				ACCEPTED
	Dielectric Withstanding Voltage	No breakdown or flashover.	PASSED				ACCEPTED
	Humidity Temperature Cycling	No damage	PASSED				ACCEPTED
	Insulation Resistance	1000 M Ω Min.	PASSED				ACCEPTED
	Dielectric withstanding Voltage	No breakdown or flashover.	PASSED				ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
B	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
	Low Level Contact Resistance	20 m Ω Max.(initial)	12.7	12.1	12.4	0.26	ACCEPTED
	Connector Mating Force	4.5 Kgf/Max.	2.4	1.9	2.2	0.18	ACCEPTED
	Connector Unmating Force	0.45 Kgf/Min.	2.1	1.7	1.9	0.09	ACCEPTED
	Durability	No Damaged	PASSED				ACCEPTED
	Connector Unmating Force	0.45 Kgf/Min.	2.1	1.7	1.8	0.06	ACCEPTED
	Connector Mating Force	4.5 Kgf/Max.	2.4	1.8	2.1	0.18	ACCEPTED
	Low Level Contact Resistance	40 m Ω Max.(final)	12.8	12.5	13.7	0.14	ACCEPTED
Examination of Product	Meets Product drawing	PASSED				ACCEPTED	
C	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
	Low Level Contact Resistance	20 m Ω Max.(initial)	12.7	12.3	12.5	0.12	ACCEPTED
	Vibration	No electrical discontinuity greater than 1 μ sec shall occur.	PASSED				ACCEPTED
	Mechanical Shock	No electrical discontinuity greater than 1 μ sec shall occur.	PASSED				ACCEPTED
	Low Level Contact Resistance	40 m Ω Max.(final)	13.8	13.5	13.6	0.12	ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
D	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
	Low Level Contact Resistance	20 m Ω Max.(initial).	12.5	12.2	12.4	0.14	ACCEPTED
	Thermal Shock	No Damaged	PASSED				ACCEPTED
	Low Level Contact Resistance	40 m Ω Max.(final)	12.8	12.6	12.7	0.07	ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED

Figure 2.2 (Cont.)

GP	Test Item	Requirement	DATA				Judgment
			Max.	Min.	Ave.	Std. Dev.	
E	Examination of Product	Meets Product drawing.	PASSED				ACCEPTED
	Low Level Contact Resistance	20 mΩ Max.(initial)	12.8	12.2	12.5	0.22	ACCEPTED
	Humidity Temperature Cycling	No damage	PASSED				ACCEPTED
	Low Level Contact Resistance	40 mΩ Max.(final)	13.2	12.6	13.9	0.19	ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
F	Examination of Product	Meets Product drawing.	PASSED				ACCEPTED
	Low Level Contact Resistance	20 mΩ Max.(initial)	12.6	11.9	12.3	0.23	ACCEPTED
	Temperature Life	No Damaged	PASSED				ACCEPTED
	Low Level Contact Resistance	40 mΩ Max.(final)	13.5	12.4	13.0	0.38	ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
G	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
	Low Level Contact Resistance	20 mΩ Max.(initial)	12.7	11.9	12.3	0.25	ACCEPTED
	Salt Spray	No damage	PASSED				ACCEPTED
	Low Level Contact Resistance	40 mΩ Max.(final)	18.2	16.8	17.5	0.58	ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
H	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
	Temperature Rising	30° C Max.	23.5	19.8	21.6	1.25	ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
I	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
	Resistance to Reflow Soldering Heat	No Damaged	PASSED				ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED
J	Examination of Product	Meets Product drawing.	PASSED				ACCEPTED
	Solderability	95% Min. solder coverage	PASSED				ACCEPTED
	Examination of Product	Meets Product drawing	PASSED				ACCEPTED

Figure 2.2 (End)