DYNAMIC D4950 Connector

1. INTRODUCTION

1.1 Purpose

This document provides the qualification summery of Dynamic D4950 Connector.

1.2 Scope

This specification covers the electrical, mechanical, and environmental performance of Dynamic D4950 Connector.

1.3 Conclusion

Based on the test results, all meet the requirements according to Product Specification 108-140216 Rev.A.

1.4 Product Description

Name	Remarks
DYNAMIC D4950 CONNECTOR RECEPTACLE ASSEMBLY	-
DYNAMIC D4950 CONNECTOR HEADER ASSEMBLY	-

1.5 Test Samples

Samples were taken randomly from current production. The following samples were used

Product Part Number	Description
1-2349849-8	D4950 HDR H STD 8POSN 1ROW TRAY AU
1-2349825-8	D4950 REC 8POSN 1ROW TRAY AU

| Indicates Change

1.6 Qualification Test Sequence and Test result

TEST OR EXAMINATION	TEST GROUP												
	1	2	3	4	5	6	7	8	9	10	11	12	
	TEST SEQUENCE (a)												
Initial examination of product	1	1	1	1	1	1	1	1	1	1	1	1	
Contact Resistance				2,6		2,6	2,5	2,5	2,5	2,4			
Temperature Rise Test					2								
Dielectric Withstand Voltage Test						8			7				
Insulation Resistance						7			6				
Durability of marking	2												
Polarization and coding	3												
Pull out force of terminations			2										
Mechanical strength impact		2											
Mating and Un-mating force				3,5									
Mechanical Operation				4									
Vibration, Random								3					
Vibration, Low Frequency							3						
Shock							4	4					
Housing Locking Strength	4												
Cold						3							
Dry Heat						4							
Humidity									3				
Rapid Change of temperature									4				
Corrosion						5							
Salt Spray										3			
Solderability											2		
Resistance to Soldering Heat												2	
Final examination of product	5	3	3	7	3	9	6	6	8	5	3	3	
Judgement	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	Passed	

Figure 1

NOTE

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

2. SUMMARY OF TEST RESULTS:

Test Group	Test Item	Set	N	Test Result	Requirement	Judge ment
1	Initial examination of products	3	3	No physical damage	Meets requirements of product drawing	Passed
	Durability of marking		3	Marking is readable	Marking shall be readable	Passed
	Polarization and coding		3	No physical damage	require provision against incorrect mating	Passed
	Housing Locking Strength		3	No damage likely to impair function	No damage likely to impair function	Passed
	Final examination of products		3	No physical damage	No damage likely to impair function	Passed
2	Initial examination of products	3	3	No physical damage	Meets requirements of product drawing	Passed
	Mechanical strength impact		3	No damage likely to impair function	No damage likely to impair function	Passed
	Final examination of products		3	No damage likely to impair function	No damage likely to impair function	Passed
3	Initial examination of products	7	7	No physical damage	Meets requirements of product drawing	Passed
	Pull out force of terminations		21	No physical damage Refer to Fig. 3	No damage likely to impair function	Passed
	Final examination of products		7	No physical damage	No damage likely to impair function	Passed
4	Initial examination of products	3	3	No physical damage	Meets requirements of product drawing	Passed
	Contact Resistance		24	Max. 0.645 / Min. 0.485 / Ave. 0.531	Max.5mΩ	Passed
	Mating and Un-mating force		24	Mating: Max. 2.93, Min. 2.78, Ave. 2.84; Un-mating: Max. 2.12, Min. 1.98, Ave. 2.05	Mating:15N Max/POSN Un-mating:1~15N/POSN	Passed
	Mechanical Operation		24	No damage likely to impair function	No damage likely to impair function	Passed
	Mating and Un-mating force		24	Mating: Max. 2.31, Min. 2.01, Ave. 2.12; Un-mating: Max. 1.94, Min. 1.82, Ave. 1.88	Mating:15N Max/POSN Un-mating:1~15N/POSN	Passed
	Contact Resistance		24	Max. 0.619 / Min. 0.443 / Ave. 0.552	Max.10mΩ	Passed
	Final examination of products		10	No physical damage	No damage likely to impair function	Passed

5	Initial examination of products	3	3	No physical damage			Meets requirements of product drawing	Passed
	Temperature Rise Test		3	Refer to Fig.4			Refer to Fig.4	Passed
	Visual and dimensional examination		3	No physical damage			No damage likely to impair function	Passed
6	Initial examination of products	3	3	No physical damage			Meets requirements of product drawing	Passed
	Contact Resistance		24	Max.	Min.	Ave.	Max.5mΩ	Passed
				1.2	0.82	0.96		
	Cold		24	No physical damage			No damage likely to impair function	Passed
	Dry Heat		24	No physical damage			No damage likely to impair function	Passed
	Corrosion		24	No physical damage			No damage likely to impair function	Passed
	Contact Resistance		24	Max.	Min.	Ave.	Max.10mΩ	Passed
				1.91	1.11	1.42		
	Dielectric Withstand Voltage Test		21	No breakdown or flashover			No breakdown or flashover	Passed
	Insulation Resistance		21	>1x10^{11}Ω			Not less than 100MΩ	Passed
	Final examination of products		3	No physical damage			No damage likely to impair function	Passed
7	Initial examination of products	3	3	No physical damage			Meets requirements of product drawing	Passed
	Contact Resistance		24	Max.	Min.	Ave.	Max.5mΩ	Passed
				0.609	0.480	0.543		
	Vibration, Vibration, Low Frequency		3	No breakdown or flashover			No damage likely to impair function No discontinuities greater than t>1μs	Passed
	Shock		3	No breakdown or flashover			No damage likely to impair function No discontinuities greater than t>1μs	Passed
	Contact Resistance		24	Max.	Min.	Ave.	Max.10mΩ	Passed
				0.761	0.516	0.604		
	Final examination of products		3	No physical damage			No damage likely to impair function	Passed

8	Initial examination of products	3	3	No physical damage			Meets requirements of product drawing	Passed
	Contact Resistance		24	Max.	Min.	Ave.	Max.5mΩ	Passed
				0.569	0.436	0.506		
	Vibration, Random		3	No breakdown or flashover			No damage likely to impair function No discontinuities greater than t>1μs	Passed
	Shock		3	No breakdown or flashover			No damage likely to impair function No discontinuities greater than t>1μs	Passed
	Contact Resistance		24	Max.	Min.	Ave.	Max.10mΩ	Passed
				0.632	0.481	0.563		
	Final examination of products		3	No physical damage			No damage likely to impair function	Passed
8	Initial examination of products	3	3	No physical damage			Meets requirements of product drawing	Passed
	Contact Resistance		24	Max.	Min.	Ave.	Max.5mΩ	Passed
				1.23	0.8	0.932		
	Damp Heat, cyclic		3	No physical damage			No damage likely to impair function	Passed
	Rapid Change of temperature (Temperature Cycle)		3	No physical damage			No damage likely to impair function	Passed
	Contact Resistance		24	Max.	Min.	Ave.	Max.10mΩ	Passed
				2.65	1.09	1.669		
	Dielectric Withstand Voltage Test		21	No breakdown or flashover			No breakdown or flashover	Passed
	Insulation Resistance		21	>1x10^{14}Ω			Not less than 100MΩ	Passed
	Final examination of products		7	No physical damage			No damage likely to impair function	Passed
9	Initial examination of products	3	3	No physical damage			Meets requirements of product drawing	Passed
	Contact Resistance		24	Max.	Min.	Ave.	Max.5mΩ	Passed
				0.864	0.526	0.659		
	Salt Spray		3	No physical damage			No damage likely to impair function	Passed
	Contact Resistance		24	Max.	Min.	Ave.	Max.10mΩ	Passed
				3.341	0.729	1.975		
	Final examination of products		3	No physical damage			No damage likely to impair function	Passed

10	Initial examination of products	3	3	No physical damage	Meets requirements of product drawing	Passed
	Solderability		12	Wet solder coverage 95% Min	Wet solder coverage 95% Min	Passed
	Final examination of products		3	No physical damage	No damage likely to impair function	Passed
11	Initial examination of products	3	3	No physical damage	Meets requirements of product drawing	Passed
	Resistance to Soldering Heat		3	No damage likely to impair function	No damage likely to impair function	Passed
	Final examination of products		3	No physical damage	No damage likely to impair function	Passed

Figure 2

AWG	SQmm	N	UL1059	IEC60947-7-1	Judgement	Reference Pull out force Min.
16	1.5	3	40	40	Passed	68N
14	2.5	3	50	50	Passed	92N
12	4	3	60	60	Passed	138N
10	-	3	80	-	Passed	164N

Figure 3

	8POSN			
AWG(SQ)	Current(A)	△T(℃)	Requirement	Judgement
10(-)	22	18.95	△T :30℃	Passed
	-	-	-	-
12(4)	19	17.7	△T :30℃	Passed
	24	27.8	△T :45℃	Passed
14(2.5)	15	21	△T :30℃	Passed
	18	29.8	△T :45℃	Passed
16(1.5)	10	11.8	△T :30℃	Passed
	16	28.3	△T :45℃	Passed

Figure 4