

1. Introduction

1.1 Testing was performed on the 0.6mm Pitch Card Edge Connector to determine if it meets the requirements of TYCO Specification, 108-78191, Rev. O.

1.2 Scope

This report covers the electrical, mechanical and environmental performance requirements of the 0.6mm Pitch Card Edge Connector.

The qualification testing was performed between 29th JUL 2005 and 13th SEP 2005.

1.3 Conclusion

The 0.6mm Pitch Card Edge Connector meets the electrical, mechanical and environmental performance requirements of Product Specification, 108-78191, Rev. O.

1.4 Product Description

This connector has been designed the combination of terminating application for Card Bus Connector.

1.5 Test Samples

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

Part Number	Description
6123088-1	Receptacle Assembly 150pos.
	PWB for Cardbus 1746942-1

Fig. 1

2. Test Contents

No.	Test Items	Requirements	Judgment
2.1	Examination of Product	Meets requirements of product drawing.	Acceptable
Electrical Requirements			
2.2	Termination Resistance (Low Level)	Initial : 30mΩ Max. Final : 50mΩ Max.	Acceptable
2.3	Insulation Resistance	Initial : 100MΩ Min. Final : 50MΩ Min.	Acceptable
2.4	Dielectric Withstanding Voltage	Initial/Final : 250V AC, 1 minute No abnormality allowed.	Acceptable
2.5	Temperature Rise	30°C Max. under loaded rated current.(0.5A)	Acceptable

Fig. 2 (to be continued)

No.	Test Items	Requirements	Judgment
Mechanical Requirements			
2.6	Vibration (Low Frequency)	10-55-10Hz/1minutes Amplitude : 1.52mm, X, Y & Z Axes :2hours each No electrical discontinuity greater than 1 μ sec shall occur. Final : 50m Ω Max.	Acceptable
2.7	Physical Shock	No electrical discontinuity greater than 1 μ sec allowed. 490m/s ² (50G), Halfsine Wave. XYZ 3 drops, Total 18 drops Final : 50m Ω Max.	Acceptable
2.8	PWB Insertion Force	0.686N(70gf)Max.(Initial:per contact) Head Operation Speed:100mm/minute	Acceptable
2.9	PWB Extraction Force	0.098N(10gf)Min.(Initial:per contact) Head Operation Speed:100mm/minute	Acceptable
2.10	Contact Retention Force	1.96N(200gf)Min.	Acceptable
2.11	Durability(Repeated Mating/unmating)	Repeated mating/unmating for 20 cycles. Final : $\Delta R=50m \Omega$ Max.	Acceptable
2.12	Solderability	Provisional standard of EIAJ RCX-0102/101,Para2.4.2. No physical damage shall occur.	Acceptable
2.13	Resistance to Soldering Heat	Provisional standard of EIAJ RCX-0102/102,Para3.3.4. No physical damage shall occur.	Acceptable
Environmental Requirements			
2.14	Thermal Shock	-55°C/30 min.,85°C/30 min,25 Cycles Final : 50m Ω Max.	Acceptable
2.15	Humidity- Temperature Cycling	25°C~65°C, 90~95% RH, 10 Cycle Final : 50m Ω Max.,50M Ω Min.	Acceptable
2.16	Humidity,Steady Stete	90~95% R.H. 40°C、 500hours Final : 50m Ω Max.,50M Ω Min.	Acceptable
2.17	Temperature Life (Heat Aging)	85°C, 500Hrs. Final : 50m Ω Max.	Acceptable
2.18	Resistance to cold	-40°C, 500Hrs. Final : 50m Ω Max.	Acceptable
2.19	Industrial Gas (SO ₂)	10ppm, 25°C, 95% RH, 96Hrs. Final : 50m Ω Max.	Acceptable

Fig. 2 (End)

3. Product Qualification Test Sequence

Test Items	Test Group														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Test Sequence (a)														
Examination of Product	1,4	1,3	1,5	1,5	1,4	1	1,5	1,3	1,3	1,5	1,5	1,5	1,5	1,5	1,5
Termination Resistance (Low Level)			2,4	2,4			2,4			2,4	2,4	2,4	2,4	2,4	2,4
Insulation Resistance	2										6	6			
Dielectric Withstanding Voltage	3														
Temperature Rise		2													
Vibration (Low Frequency)			3												
Physical Shock				3											
PWB Insertion Force					2										
PWB Extraction Force					3										
Contact Retention Force						2									
Durability							3								
Solderability								2							
Resistance to Soldering Heat									2						
Thermal Shock										3					
Humidity-Temperature Cycling											3				
Humidity, Steady State												3			
Temperature Life													3		
Resistance to Cold														3	
Industrial Gas (SO ₂)															3

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

Fig. 3

4. Test Results

Test Group	Test Item	Conditions	Measure Item	n	Unit	RESULTS				SPEC	Judge-ment
						MAX	MIN	AVE	SIG		
1	Insulation Resistance	Initial	Insulation Resistance	40	Ω	1 × 10 ⁸ Ω Min.				1 × 10 ⁸ Ω Min.	Acceptable
	Dielectric Strength	Initial	Dielectric Strength	40	—	No abnormalities				No abnormalities	Acceptable
2	Temperature Rising	Initial	Temperature Rise	5 set	°C	13.9	—	—	—	30°C MAX.	Acceptable
3	Vibration	Initial	Termination Resistance	100	mΩ	25.64	8.17	18.99	4.43	30mΩ MAX.	Acceptable
		During Test	Circuit Continuity	100	Ms	No Discontinuity				1 μs MAX.	Acceptable
		Final	Termination Resistance	100	mΩ	29.09	10.19	19.34	4.11	50mΩ MAX.	Acceptable
4	Physical Shock	Initial	Termination Resistance	100	mΩ	24.33	8.46	18.51	4.19	30mΩ MAX.	Acceptable
		During Test	Circuit Continuity	100	μs	No Discontinuity				1 μs MAX.	Acceptable
		Final	Termination Resistance	100	mΩ	31.19	9.61	21.04	4.01	50mΩ MAX.	Acceptable
5	PWB Insertion Force	Initial	PWB Insertion Force	3 set	N (Kgf)	43.68 (4.46)	33.16 (3.38)	38.39 (3.92)	—	102.9 MAX. (10.5 MAX.)	Acceptable
	PWD Extraction Force	Initial	PWD Extraction Force	3 set	N (Kgf)	22.91 (2.34)	18.83 (1.92)	20.91 (2.13)	—	14.7 MIN. (1.5 MIN.)	Acceptable
6	Contact Retention Force	Initial	Contact Retention Force	30	N (kgf)	6.19 (0.63)	3.19 (0.33)	4.81 (0.49)	—	1.96 MIN. (0.2 MIN.)	Acceptable
7	Durability	Initial	Termination Resistance	100	mΩ	25.28	9.353	18.67	3.98	30mΩ MAX.	Acceptable
		Final	Termination Resistance	100	mΩ	35.81	6.18	23.37	4.56	50mΩ MAX.	Acceptable
8	Solderability	Final	Appearance	5 set	—	No abnormalities				No abnormalities	Acceptable
9	Resistance to Soldering Heat	Final	Appearance	5 set	—	No abnormalities				No abnormalities	Acceptable
10	Thermal Shock	Initial	Termination Resistance	100	mΩ	25.74	9.01	19.39	4.01	30mΩ MAX.	Acceptable
		Final	Termination Resistance	100	mΩ	31.09	11.73	21.81	4.30	50mΩ MAX.	Acceptable

Fig. 4 (to be continued)

Test Group	Test Item	Conditions	Measure Item	n	Unit	RESULTS				SPEC	Judge-ment
						MAX	MIN	AVE	S		
11	Temperature Humidity Cycling	Initial	Termination Resistance	100	mΩ	25.75	8.15	19.40	5.46	30mΩ MAX.	Acceptable
		Final	Termination Resistance	100	mΩ	35.88	12.11	28.86	6.88	50mΩ MAX.	Acceptable
		Final	Insulation Resistance	5 set	Ω	5 × 10 ⁷ Ω Min.				5 × 10 ⁷ Ω Min.	Acceptable
12	Humidity Steady State	Initial	Termination Resistance	100	mΩ	25.64	8.56	18.70	4.81	30mΩ MAX.	Acceptable
		Final	Termination Resistance	100	mΩ	34.24	10.69	24.21	6.80	50mΩ MAX.	Acceptable
		Final	Insulation Resistance	5 set	Ω	5 × 10 ⁷ Ω Min.				5 × 10 ⁷ Ω Min.	Acceptable
13	Temperature Life	Initial	Termination Resistance	100	mΩ	27.78	6.51	17.59	5.08	30mΩ MAX.	Acceptable
		Final	Termination Resistance	100	mΩ	35.68	6.56	23.32	7.06	50mΩ MAX.	Acceptable
14	Resistance to Cold	Initial	Termination Resistance	100	mΩ	25.61	8.15	18.18	4.65	30mΩ MAX.	Acceptable
		Final	Termination Resistance	100	mΩ	35.84	11.24	30.82	6.59	50mΩ MAX.	Acceptable
15	Industrial Gas	Initial	Termination Resistance	100	mΩ	25.65	6.86	18.21	4.81	30mΩ MAX.	Acceptable
		Final	Termination Resistance	100	mΩ	35.97	10.12	24.57	6.10	50mΩ MAX.	Acceptable

Fig. 4 (End)

Note : All contact resistance data are included GND circuit