1. Introduction

1.1 Testing was performed on the DDR SODIMM SOCKET 200P Vertical Type to determine if it meets the requirement of Product Specification , 108-78628

1.2 Scope

This report covers the electrical, mechanical and environmental performance requirements of the DDR SODIMM SOCKET 200P Vertical Type.

The qualification testing was performed between 5 MAR 2010 and 11 APR 2010

1.3 Conclusion

DDR SODIMM SOCKET 200P Vertical Type meets the electrical, mechanical and environmental performance requirements of Product Specification, 108-78628

1.4 Test Samples

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

Part Number	Description
2040910-*	DDR SODIMM SOCKET 200P Vertical Type

Tyco Electronics Japan G.K. (3-5-8 Hisamoto Takatsu-ku Kawasaki, 213-8535)

2. Test Contents

NO.	Test Items	Requirements	Judgment
2.1	Examination of Product	Visual, inspection No physical damage.	Acceptable
	Electrical Requirements		
2.2	Termination Resistance (Low Level)	40mΩ Max. (Initial) ⊿R = 20mΩMax. (Final)	Acceptable
2.3	Dielectric withstanding Voltage	0.25k V AC for 1 minute. Test between adjacent circuits of unmated connector. No creeping discharge or flashover shall occur. Current leakage : 0.5mA Max.	Acceptable
2.4	Insulation Resistance	500V DC for 1 minute. Test between adjacent circuits of unmated connector. 250MΩ Min. (Initial) 50MΩ Min. (Final)	Acceptable

Fig. 2 (to be continued)

Mechanical Requirements			
2.5	Vibration	Subject mated connector to 10-55-10 Hz traversed in 1 minute at 1.52mm amplitude 2 hours each of 3 mutually perpendicular plans. 100mA applied. AMP Spec. 109-5201 No electrical discontinuity greater than 0.1μsec. Shall occur. ⊿R = 20mΩ Max. (Final)	Acceptable
2.6	Physical Shock	Mated connector. Accelerated Velocity : 490m/s² (50G) Waveform: Half sine. Duration: 11m sec. Number of Drops: 3drops each to normal and reversed directions of X, Y and Z axes, totally 18drops. AMP Spec. 109-5208 Condition A No electrical discontinuity greater than 0.1μsec. Shall occur. ⊿R = 20mΩ Max. (Final)	Acceptable
2.7	P.C Board Mating Force	Operation speed : 100mm/minute Measure the force required to mate connectors. (In this test, the force required to turn PCB before it engages on Latch, is excluded.) AMP Spec. 109-5206 Condition B 200Pos.59.8N (6.1kgf) Max.	Acceptable
2.8	Durability (Repeated Mating/Unmating)	Repeated insertion and extraction of P.C.B to and from the connector with the turns to lock it and then unlock it for 25 cycles. ⊿R = 20mΩ Max. (Final)	Acceptable

Fig. 2 (to be continued)

2.9	Solder ability	Solder Temperature:245±5℃ immersion Duration:5±0.5seconds Flux : Alpha 100 AMP Spec. 109-5203 Wet Solder Coverage: 95% Min.	Acceptable
2.10	Resistance to Reflow Soldering Heat	Test connector on P.C.Board Pre-Heat 150～180℃：90±30 sec. Heat 230℃ Min. ：30±10 sec Heat Peak 260℃ Max. No physical damage shall occur.	Acceptable
	Environmental Requirements		
2.11	Thermal Shock	Mated connector. - 55℃/30 min. ,85℃/30 min. Making this a cycle, repeat 5 cycles. ⊿R = 20mΩMax (Final)	Acceptable
2.12	Humidity-Temperature Cycling	Mated connector. 25～65℃、90～95%R.H 5 cycles. Cold shock - 10℃ performed Insulation Resistance : 50MΩ Min. (Final) ⊿R = 20mΩMax (Final)	Acceptable
2.13	Salt Spray	Subject mated connector to 5% salt concentration for 24 hours ⊿R = 20mΩMax (Final)	Acceptable
2.14	Industrial Gas (SO_2)	Mated connector SO_2 Gas : 10 ppm,95% R.H. 25℃, 24 hours ⊿R = 20mΩMax (Final)	Acceptable
2.15	Temperature Life (Heat Aging)	Mated connector 85℃, Duration : 2 days ⊿R = 20mΩMax (Final)	Acceptable

Fig. 2 (End)

3. Product Qualification Test Sequence

Test Examination	Test Group											
	1	2(b)	3(b)	4	5	6	7	8	9	10	11	12
	Test Sequence (a)											
Examination of Product	1,7	1,5	1,5	1,3	1,5	1,3	1,3	1,5	1,5	1,5	1,5	1,5
TerminationResistance (Low Level)		2,4	2,4		2,4			2,4	2,4	2,4	2,4	2,4
Dielectric withstanding Voltage	3,6											
Insulation Resistance	2,5											
Vibration(Low Frequency)		3										
Physical Shock			3									
P.C Board Mating Force				2								
Durability(Repeated Mating/Unmating)					3							
Solder ability						2						
Resistance to Reflow Soldering Heat							2					
Thermal Shock								3				
Temperature Humidity Cycling	4											3
Salt Spray									3			
Industrial SO_2 Gas										3		
Temperature Life (Heat Aging)											3	

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

(b) Discontinuities shall nit take place in this test group, during tests

Fig. 3 (End)

4. TEST RESULT

Condition	Measure Item	N	Unit	Results				Requirement	Judgment
				MAX.	MIN.	AVE.	SIG.		
Test Group 1									
Initial	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
	Insulation Resistance	15	Ω	250MΩMIN.				250MΩMIN.	Acceptable
	Dielectric withstanding Voltage	15	-	No abnormalities				No abnormalities	Acceptable
After Temperature Humidity Cycling	Insulation Resistance	15	Ω	50MΩMIN.				50MΩ以上 50MΩMIN.	Acceptable
	Dielectric withstanding Voltage	15	-	No abnormalities				No abnormalities	Acceptable
	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
Test Group 2									
Initial	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
	Termination Resistance	600	mΩ	29.78	25.01	26.657	1.815	40mΩMAX.	Acceptable
Vibration During test	Circuit Continuity	3	μS	No discontinuity				1μS MAX.	Acceptable
After Vibration	Termination Resistance	600	mΩ	33.81	24.33	26.523	2.603	40mΩMAX.	Acceptable
	⊿R	600	mΩ	5.73	-2.47	-0.113	2.101	20mΩMAX.	Acceptable
	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable

Fig. 4 (to be continued)

Condition	Measure Item	N	Unit	Results				Requirement	Judgment
				MAX.	MIN.	AVE.	SIG.		
Test Group 3									
Initial	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
	Termination Resistance	600	mΩ	37.43	25.09	27.184	1.466	40mΩMAX.	Acceptable
Physical Shock During test	Circuit Continuity	3	μS	No discontinuity				1μS MAX.	Acceptable
After Physical Shock	Termination Resistance	600	mΩ	36.70	25.32	27.030	1.303	40mΩMAX.	Acceptable
	⊿R	600	mΩ	7.85	-9.70	-0.154	1.455	20mΩMAX.	Acceptable
	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
Test Group 4									
Initial	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
	P.C Board Mating Force	3	N	40.50	37.20	38.400	1.825	59.8N MAX.	Acceptable
After P.C Board Mating	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable

Fig. 4 (to be continued)

Condition	Measure Item	N	Unit	Results				Requirement	Judgment
				MAX.	MIN.	AVE.	SIG.		
Test Group 5									
Initial	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
	Termination Resistance	600	mΩ	31.97	25.17	26.990	0.945	40mΩMAX.	Acceptable
After Durability	Termination Resistance	600	mΩ	29.61	24.85	26.402	0.909	40mΩMAX.	Acceptable
	⊿R	600	mΩ	1.96	-5.69	-0.589	0.691	20mΩMAX.	Acceptable
	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
Test Group 6									
Solder ability	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
	Appearances	3	-	Wet solder Coverage : 95% Min.				95% Min.	Acceptable
After Solder ability	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
Test Group 7									
Resistance to Reflow Soldering Heat	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
	Appearances	3	-	No physical damage shall occur..				No abnormalities	Acceptable
After Resistance to Reflow Soldering Heat	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable

Fig. 4 (to be continued)

Condition	Measure Item	N	Unit	Results				Requirement	Judgment
				MAX.	MIN.	AVE.	SIG.		
Test Group 8									
Initial	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
	Termination Resistance	600	mΩ	31.52	25.45	27.050	0.858	40mΩMAX.	Acceptable
After Thermal Shock	Termination Resistance	600	mΩ	30.35	25.35	26.741	0.886	40mΩMAX.	Acceptable
	⊿R	600	mΩ	3.90	-5.06	-0.309	0.901	20mΩMAX.	Acceptable
	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
Test Group 9									
Initial	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
	Termination Resistance	600	mΩ	30.28	25.37	27.197	1.022	40mΩMAX.	Acceptable
After Salt Spray	Termination Resistance	600	mΩ	30.44	25.02	27.180	1.066	40mΩMAX.	Acceptable
	⊿R	600	mΩ	3.69	-2.89	-0.018	1.294	20mΩMAX.	Acceptable
	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable

Fig. 4 (to be continued)

Condition	Measure Item	N	Unit	Results				Requirement	Judgment
				MAX.	MIN.	AVE.	SIG.		
Test Group 10									
Initial	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
	Termination Resistance	600	mΩ	31.59	25.43	27.312	0.893	40mΩMAX.	Acceptable
After Industrial SO_2 Gas	Termination Resistance	600	mΩ	36.74	25.46	28.497	1.976	40mΩMAX.	Acceptable
	⊿R	600	mΩ	10.35	-2.22	1.185	1.714	20mΩMAX.	Acceptable
	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
Test Group 11									
Initial	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
	Termination Resistance	600	mΩ	29.63	21.97	26.437	1.018	40mΩMAX.	Acceptable
After Temperature Humidity Cycling	Termination Resistance	600	mΩ	33.17	24.43	26.619	1.298	40mΩMAX.	Acceptable
	⊿R	600	mΩ	5.93	-2.36	0.182	1.008	20mΩMAX.	Acceptable
	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
Test Group 12									
Initial	Examination of Product	3	-	No abnormalities				No abnormalities	Acceptable
	Termination Resistance	600	mΩ	30.45	20.62	26.618	1.185	40mΩMAX.	Acceptable
After Temperature Life (Heat Aging)	Termination Resistance	600	mΩ	30.09	24.46	26.491	1.043	40mΩMAX.	Acceptable
	⊿R	600	mΩ	5.15	-2.51	-0.127	0.800	20mΩMAX.	Acceptable

Fig. 4 (End)