PCI Express Card Edge Connector, Vertical , DIP Type

1. INTRODUCTION

1.1. PURPOSE

Testing was performed on the TE PCI Express Card Edge Connector, Vertical, DIP Type to determine its conformance to the requirements of Product Specification 108-57787, Revision A.

1.2. SCOPE

This report covers the electrical, mechanical, and environmental performance of the PCI Express Card Edge Connector, Vertical DIP Type.

1.3. CONCLUSION

The PCI Express Card Edge Connector, Vertical, DIP Type listed in paragraph 1.5. conformed to the electrical, mechanical, and environmental performance requirements of Product Specification 108-57787, Revision A.

1.4. PRODUCT DESCRIPTION

The PCI Express Card Edge connector is used in ATX or ATX-based systems, supporting x1, x4, x8, and x16 link widths to suit different bandwidth requirements. These connectors support the PCI Express signal and power requirements, as well as auxiliary signals used to facilitate the interface between motherboard and add-in card hardware.

1.5. TEST SPECIMENS

Test specimens were representative of normal production lots. The following specimens were used for test.

Test Group	Quantity	Description	P/N
A, B, C, D, E, F, G, H	8	PCI Express Card Edge Connector,	2041612-x

1.6. QUALIFICATION TEST SEQUENCE

Test or Examination	Test Group								
	A	B	C	D	E	F	G	H	I
	Test Sequence (a)								
Examination of product.	1, 9	1, 8	1, 10	1, 8	1, 8	1, 3	1, 3	1, 3	1, 3
Low level contact resistance.	3, 7	2, 5, 7	2, 5, 7, 9	2, 5, 7					
Dielectric withstanding voltage.					2, 6				
Insulation resistance.					3, 7				
Mating force.	2, 6								
Unmating force.	4, 8								
Durability.	5	3	3	3					
Reseating.		6	8						
Vibration, random.				6					
Solderability.						2			
Resistance to wave soldering heat.							2		
Resistance to Reflow soldering heat									2
Temperature life.		4							
Temperature life (Preconditioning).				4					
Thermal shock.			4		4				
Humidity-temperature cycling.			6		5				
Contact current rating/ Temperature rise.								2	

NOTE (a) Numbers indicate sequence in which test are performed.
(b) Discontinuities shall not take place in this test group, during tests.

Figure 1

2. TEST RESULT

Test Group	Test Description	Requirement	Test Result				Judgment
			Max.	Min.	Ave.	Std. Dev.	
A	Examination of product.	Meets product drawing.	PASSED				Accepted
	Mating force.	117 g/contact pair max.	94.28	70.12	80.18	7.45	Accepted
	Contact resistance.	30 mΩ max.	12.03	8.06	10.02	1.02	Accepted
	Unmating force.	15g/contact pair min.	19.20	16.08	17.88	0.83	Accepted
	Durability.	No damage.	PASSED				Accepted
	Mating force.	117g/contact pair max.	88.62	58.88	72.49	7.74	Accepted
	Contact resistance.	30 mΩ max.	11.27	6.01	9.15	1.32	Accepted
	Unmating Force.	0.15 N/contact pair min.	18.78	15.52	17.63	0.91	Accepted
	Examination of product.	Meets product drawing.	PASSED				Accepted
B	Examination of product.	Meets product drawing.	PASSED				Accepted
	Contact resistance.	30 mΩ max.	15.68	10.18	12.79	1.55	Accepted
	Durability.	No damage.	PASSED				Accepted
	Temperature life.	No damage.	PASSED				Accepted
	Contact resistance.	30 mΩ max.	13.05	10.03	11.36	0.78	Accepted
	Reseating.	No damage.	PASSED				Accepted
	Contact resistance.	30 mΩ max.	12.20	7.72	9.34	1.18	Accepted
	Examination of product.	Meets product drawing.	PASSED				Accepted
C	Examination of product.	Meets product drawing.	PASSED				Accepted
	Contact resistance.	30 mΩ Max.	15.52	10.28	12.17	1.57	Accepted
	Durability.	No damage.	PASSED				Accepted
	Thermal shock.	No damage.	PASSED				Accepted
	Contact resistance.	30 mΩ Max.	14.43	9.76	11.99	1.31	Accepted
	Humidity-temperature cycling.	No damage.	PASSED				Accepted
	Contact resistance.	30 mΩ max.	13.32	8.95	11.30	1.35	Accepted
	Reseating.	No damage.	PASSED				Accepted
	Contact resistance.	30 mΩ max.	11.68	8.86	10.16	0.69	Accepted
	Examination of product.	Meets product drawing.	PASSED				Accepted
D	Examination of product.	Meets product drawing.	PASSED				Accepted
	Contact resistance.	30 mΩ Max.	15.59	11.25	13.72	1.35	Accepted
	Durability.	No damage.	PASSED				Accepted
	Temperature life (Preconditioning).	No damage.	PASSED				Accepted
	Contact resistance.	30 mΩ max.	15.02	9.85	11.90	1.49	Accepted
	Vibration, random.	No discontinuities of 1 µs or longer duration.	PASSED				Accepted
	Contact resistance.	30 mΩ max.	12.38	8.68	10.53	1.05	Accepted
	Examination of product.	Meets product drawing.	PASSED				Accepted

Figure 2 (continued)

Test Group	Test Description	Requirement	Test Result				Judgment
			Max.	Min.	Ave.	Std. Dev.	
E	Examination of product.	Meets product drawing.	PASSED				Accepted
	Dielectric withstanding voltage.	No breakdown or flashover.	PASSED				Accepted
	Insulation resistance.	800 MΩ Min.	PASSED				Accepted
	Thermal shock.	No damage.	PASSED				Accepted
	Humidity-temperature cycling.	No damage.	PASSED				Accepted
	Dielectric withstanding voltage.	No breakdown or flashover.	PASSED				Accepted
	Insulation resistance.	800MΩ Min.	PASSED				Accepted
	Examination of product.	Meets product drawing.	PASSED				Accepted
F	Examination of product.	Meets product drawing.	PASSED				Accepted
	Solderability.	95% solder coverage min.	PASSED				Accepted
	Examination of product.	Meets product drawing.	PASSED				Accepted
G	Examination of product.	Meets product drawing.	PASSED				Accepted
	Resistance to wave solder heat.	No damage.	PASSED				Accepted
	Examination of product.	Meets product drawing.	PASSED				Accepted
H	Examination of product.	Meets product drawing.	PASSED				Accepted
	Contact current rating/ Temperature rise.	Less than 30°C temp rise.	PASSED				Accepted
	Examination of product.	Meets product drawing.	PASSED				Accepted
I	Examination of product.	Meets product drawing.	PASSED				Accepted
	Resistance to Reflow solder heat.	No damage.	PASSED				Accepted
	Examination of product.	Meets product drawing.	PASSED				Accepted

Figure 2 (end)