SPECIFICATION

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SPEC. NO.: PS-52701-XXXXX-XXX **REVISION:** B

PRODUCT NAME: 1.0mm PITCH EDGE CARD CONNECTOR

PRODUCT NO: 52701 , 52704 , 52705、52755 SERIES

PREPARED:	CHECKED:	APPROVED:
CH.LIANG	**IH.LEE**	**IH.LEE**
DATE: **2024/03/18**	DATE: **2024/03/18**	DATE: **2024/03/18**

1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
1	ECN-1805194	NEW PRODUCT RELEASE	IH.LEE	2018/05/14
O	ECN-1808391	ADD 52704 SERIES	IH.LEE	2018/08/21
A	ECN-013419	1. ADD 52705、52755 SERIES 2. ADD Resistance to Reflow Soldering Heat 3. ADD Salt Spray Gold plating add 15u” 4. Modify Mating/Un-mating Force: per pin->per contact pair	CH.LIANG	2023/08/04
B	ECN-015825	ADD Salt Spray Gold plating add 15u”	CH.LIANG	2024/03/18

2 SCOPE

This specification covers performance, tests and quality requirements for 1.0mm PITCH EDGE CARD Connector

3 APPLICABLE DOCUMENTS

EIA-364: ELECTRONICS INDUSTRIES ASSOCIATION
TS-1000: ENVIRONMENTAL TEST METHODOLOGY
PCI Express Card Electromechanical Specification Revision 4.0

4 REQUIREMENTS

4.1 Design and Construction

4.1.1 Product shall be of design, construction and physical dimensions specified on applicable product drawing.
4.1.2 All materials conform to R.o.H.S. and the standard depends on TQ-WI-140101.

4.2 Materials and Finish

4.2.1 Contact: High performance copper alloy (Phosphor Bronze)
Finish: (a) Contact Area: Refer to the drawing.
(b) Under plate: Refer to the drawing.
(c) Solder area: Refer to the drawing.
4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0
4.2.3 Mylar: Polyester., UL94V-0
4.2.4 Fit Nail: High performance alloy(Brass or Stainless steel)
Finish: (a) Under plate: Refer to the drawing.
(b) Solder area: Refer to the drawing.

4.3 Ratings

4.3.1 Voltage : 50 Volts AC/DC (per pin)
4.3.2 Current : 1.1 Amperes (per pin)
4.3.3 Operating Temperature : -40℃ to +85℃

5 Performance

5.1. Test Requirements and Procedures Summary

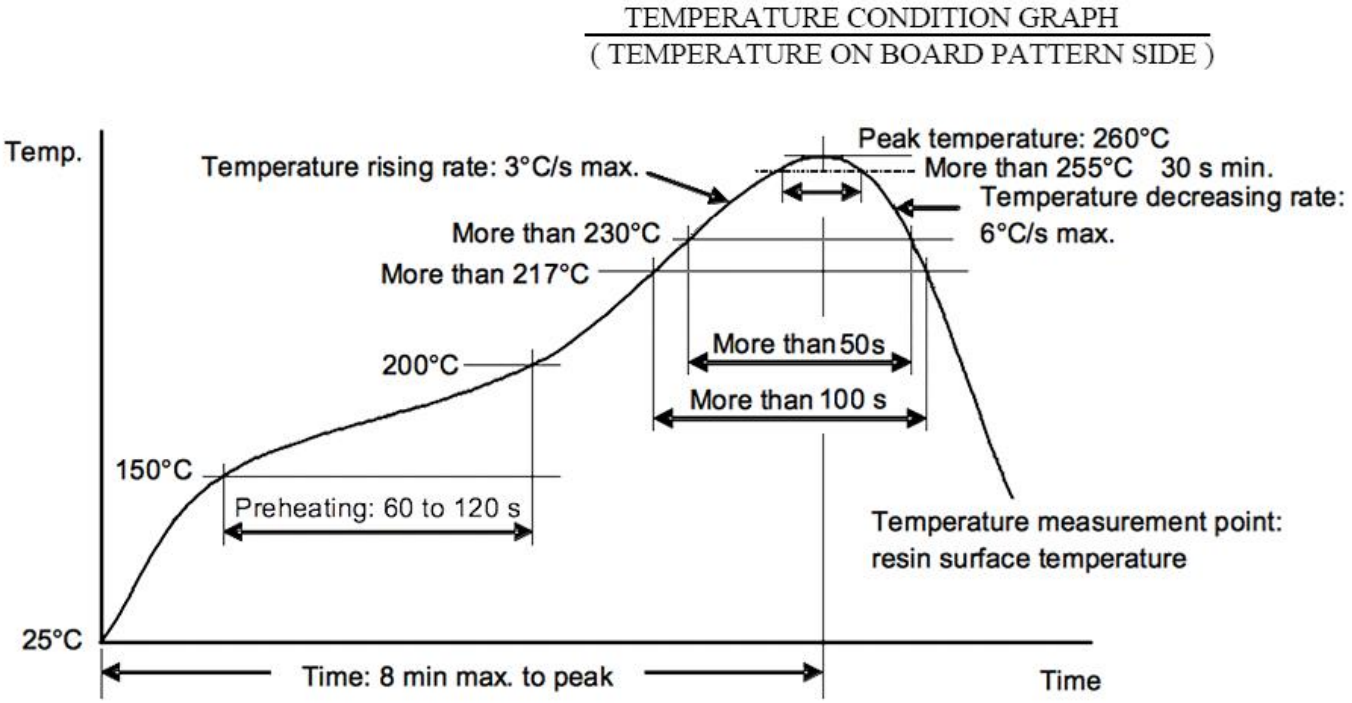
Item	Requirement	Standard
Examination of Product	Product shall meet requirements of applicable product drawing and specification.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Item	**Requirement**	**Standard**
Low Level Contact Resistance	Initial: 30 mΩ Max. After test: 10 mΩ Max. change allowed	Mate connectors, measure by dry circuit, 20mV Max., 100mA Max. (EIA-364-23)
Insulation Resistance	1000 MΩ Min.	Unmated connectors, apply 500 V DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	No discharge, flashover or breakdown. Current leakage: 1 mA max.	500 V AC Min. at sea level for 1 minute. Test between adjacent contacts of unmated connectors. (EIA-364-20)
Temperature Rise	30℃ Max. Change allowed	Mate connectors: measure the temperature rise at rated current until temperature stable. The ambient condition is still air at 25℃ (EIA-364-70,Method2)

MECHANICAL		
Item	**Requirement**	**Standard**
Durability	50 Cycles for Backplane Receptacle After test: 10 mΩ Max. change allowed	The sample should be mounted in the tester and fully mated and unmated the number of cycles. (EIA-364-09)
Durability(precondition)	Perform 5 mate/unmate cycles.	No evidence of physical damage (EIA-364-09)
Mating Un-mating Force	Mating Force: 1.15N Max.per contact pair Un-mating Force: 0.13N Min. per contact pair (Initial) 0.05N Min. per contact pair (After test)	Measure the force required to mate/unmate connector. (EIA-364-13 Method A)
Contact & Fit Nail Retention	Retention Force: 2N Min.	Measure the retention force of contact and Fit Nail in the housing.
Vibration	No discontinuity longer than 1 microsecond allowed. 10 mΩ Max. change from initial contact resistance.	Subject mated specimens to 3.10G's rms between 20-500 Hz for 15 minutes in each of 3 mutually perpendicular planes. (EIA-364-28 Condition Ⅶ)
Mechanical Shock	No discontinuity longer than 1 microsecond allowed. 10 mΩ Max. change from initial contact resistance.	Subject mated specimens to 30G's half-sine shook pulses of 11milliseconds duration 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks. (EIA-364-27)
Resistance to **Reflow** Soldering Heat	No discharge	Preheating：150℃~200℃, 60~120sec. Heat： above 217℃, more than 100sec. above 230℃, more than 50sec. above 255℃, more than 30sec Peak Temp.：260℃ Max,
Reseating	Appearance: No damage	Manually mated/unmated the connector or socket perform 3 cycles.

ENVIRONMENTAL		
Item	**Requirement**	**Standard**
Resistance to **Reflow** Soldering Heat	See Product Qualification and Test Sequence Group 9 **(Lead Free)**	Pre Heat：150℃~200℃, 60~120sec. Heat：217℃ Min., 100sec Min. & 230℃ Min., 50sec Min. Peak Temp.：260℃Max, 10sec Max. Reflow number cycle: 2 times (EIA-364-56)
Thermal Shock	See Product Qualification and Test Sequence Group 5	Mate module and subject to follow condition for 100 cycles. 1 cycles: -55℃ and +85 ℃each 30min. (EIA-364-32,Test condition I)
Temperature Life	See Product Qualification and Test Sequence Group 3	Subject mated connectors to temperature life at 105℃ for 168 hours. (EIA-364-17B)
Temperature Life (precondition)	No physical damage	Subject mated connectors to temperature life at 105℃ for 92 hours. (EIA-364-17, method A)
Salt Spray	See Product Qualification and Test Sequence Group 1	Subject mated connectors to 5% salt-solution concentration, 35℃ Gold plating 15u”、30 u” are both for 96 hours. (EIA-364-26)
Humidity	No Physical damege Initial: 30 mΩ Max. After test: 10 mΩ Max. change allowed	Subject mated connectors to temperature and humidity of 40℃with 90% to 95% RH for 96 hours. (EIA-364-31 Method II Test Condition A)
Solder Ability	Tin plating: Solder able area shall have minimum of 95% solder coverage. Gold plating: Solder able area shall have minimum of 75% solder coverage	Add then into solder bath, Temperature at 245 ±5℃, for 4-5 sec. (EIA-364-52)

Note. Flowing Mixed Gas shall be conduct by customer request.

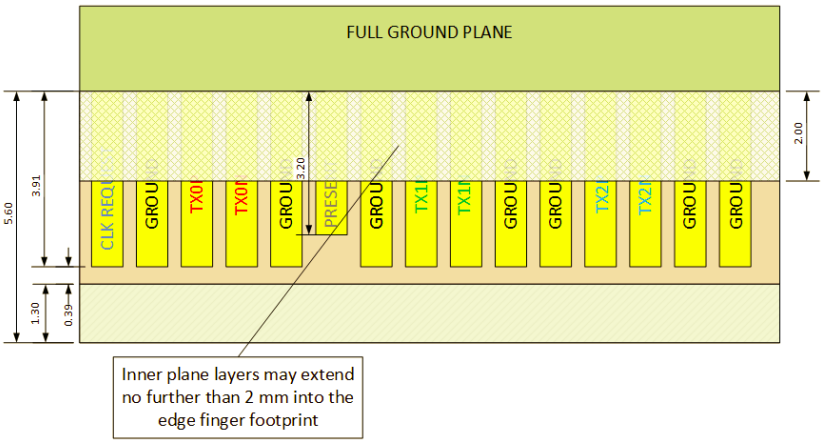
6 INFRARED REFLOW CONDITION

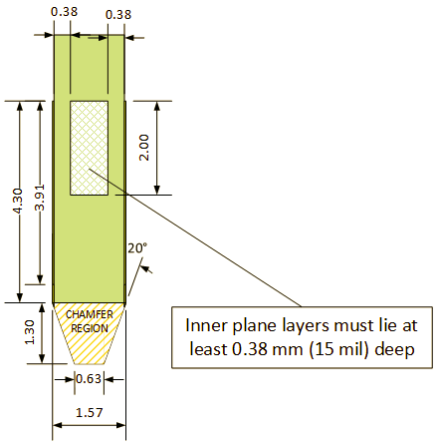


7 RECOMMENDED P.C.B. LAYOUT

There shall be no inner-layer conductors of any kind, including ground or power planes, beneath the edge fingers (for a distance of 25 mils?). Any conductors in this region increase capacitance with respect to the high-speed signal lines, which degrades insertion loss and increases return loss.

Inner plane layers may be added beneath the edge fingers if they extend no more than 2 mm into the edge finger region from the main routing area of the board and are at a depth of least 15 mil (0.38 mm) beneath the edge finger copper pads on the surface of the PCB.





8 PRODUCT QUALIFICATION AND TEST SEQUENCE

Test or Examination	Test Group								
	1	2	3	4	5	6	7	8	9
	Test Sequence								
Examination of Product	1、5 8	1、6 10	1、5 8、11	1、6	1、8 11、14	1、7	1、3	1、3	1、3
Low Level Contact Resistance	2、4 7	2、5 9	2、4 7、10		2、7 10、13	3、6			
Insulation Resistance					3、15				
Dielectric Withstanding Voltage					4、16				
Temperature Rise				5					
Durability	3					4			
Durability(precondition)		3	3	2	5				
Mating / Unmating Forces						2、5			
Contact & Fit Nail Retention								2	
Vibration		7							
Mechanical Shock		8							
Resistance to Reflow Soldering Heat									2
Reseating			9	4	12				
Thermal Shock					6				
Temperature Life			6	3					
Temperature Life(precondition)		4							
Salt Spray	6								
Humidity					9				
Solder Ability							2		
Sample Size	4	4	4	4	4	4	4	4	4