



SPECIFICATION

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SPEC. NO.: PS-52710-XXXXX-XXX REVISION: F

PRODUCT NAME: 1.0mm PITCH EDGE CARD CONNECTOR

PRODUCT NO: 52710, 52712, 52717, 52762, 52763, 52768, 52775 SERIES

PREPARED: CHEN HUAN.LIANG DATE: 2024/03/28	CHECKED: I HUNG.LEE DATE: 2024/03/28	APPROVED: I HUNG.LEE DATE: 2024/03/28
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RELEASE DATE: **2024.03.28**

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ECN No: **ECN-015825**

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1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
A	ECN-2007327	ADD 52710 SERIES	CA.LIN	2020/07/29
B	ECN-003320	ADD 52712 SERIES	CA.LIN	2021/03/23
C	ECN-004148	ADD 52717 SERIES	CA.LIN	2021/08/06
D	ECN-012364	ADD 52762 、 52763 SERIES	CH.LIANG	2023/06/09
E	ECN-013419	ADD (1)52768 SERIES (2)Resistance to Reflow Soldering Heat (3) Salt Spray Gold plating add 15u”	CH.LIANG	2023/08/04
F	ECN-015825	ADD 52775 SERIES	CH.LIANG	2024/03/28

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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 5.0

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°C to +85°C**

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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: Delta 20 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°C Max. Change allowed	Mate connectors: measure the temperature rise at rated current until temperature stable. The ambient condition is still air at 25°C (EIA-364-70,Method2)

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MECHANICAL

Item	Requirement	Standard
Durability	50 Cycles for Backplane Receptacle After test: Delta 20 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: 0.15N Min.per contact pair	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 shock pulses of 11 milliseconds 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°C~200°C , 60~120sec. Heat : above 217°C, more than 100sec. above 230°C, more than 50sec. above 255°C, more than 30sec Peak Temp. : 260°C Max,
Reseating	Appearance: No damage	Manually mated/unmated the connector or socket perform 3 cycles.

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ENVIRONMENTAL

Item	Requirement	Standard
Resistance to Reflow Soldering Heat	See Product Qualification and Test Sequence Group 9 (Lead Free)	Pre Heat : 150°C~200°C ,60~120sec. Heat : 217°C Min., 100sec Min. & 230°C Min., 50sec Min. Peak Temp. : 260°CMax, 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°C and +85 °C 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°C for 168- hours. (EIA-364-17B)
Temperature Life (precondition)	No physical damage	Subject mated connectors to temperature life at 105°C 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°C Gold plating 15u" 、 30u" both for 96 hours. (EIA-364-26)
Humidity	No Physical damage Initial: 30 mΩ Max. After test: 10 mΩ Max. change allowed	Subject mated connectors to temperature and humidity of 40°C 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°C , for 4-5 sec. (EIA-364-52)

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

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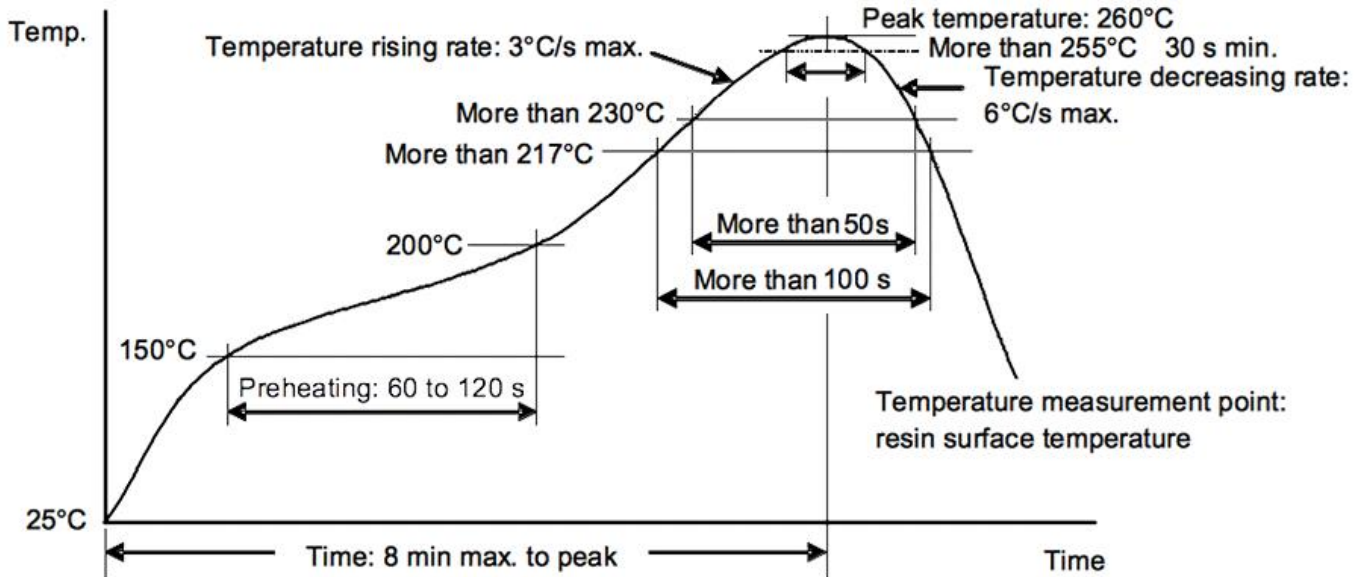
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6 INFRARED REFLOW CONDITION

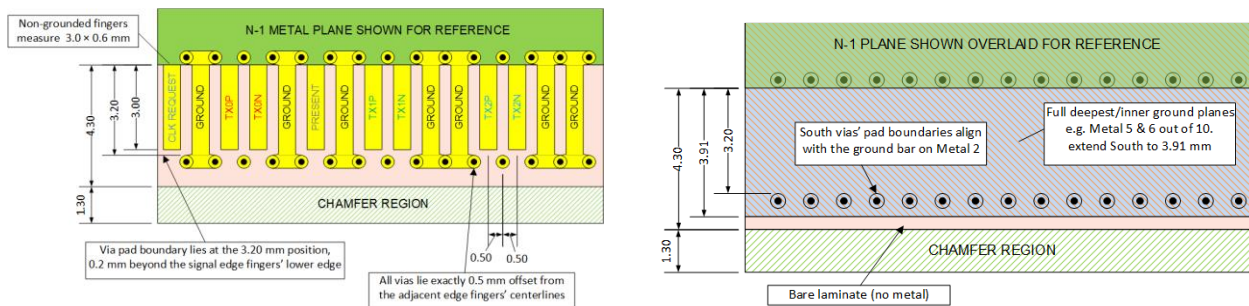
TEMPERATURE CONDITION GRAPH
(TEMPERATURE ON BOARD PATTERN SIDE)



7 RECOMMENDED P.C.B. LAYOUT

The inner layer ground plane must lie at a depth of 0.52 mm (20.5 mil) or deeper beneath the edge finger copper pads on the surface of the PCB.

For an Add-in Card that supports 32.0 GT/s, there must be an inner layer ground under edge-fingers in the high-speed region comprising pins A12/B12 and beyond. This requirement applies to both sides of the Add-in Card, so a symmetric pair of shielding planes is used. These planes greatly reduce crosstalk between the Tx and Rx lanes in the edge finger region. In the case of a high-layer count board multiple deep planes may lie within this region.



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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