

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

**REVISION:** 0

**PRODUCT NAME:** 1.0mm PITCH EDGE CARD CONNECTOR

**PRODUCT NO:** 52701 , 52704 SERIES

<p>PREPARED:</p> <p style="text-align: center;"><b>IH.LEE</b></p> <p>DATE: <b>2018/08/21</b></p>	<p>CHECKED:</p> <p style="text-align: center;"><b>CY.CHEN</b></p> <p>DATE: <b>2018/08/21</b></p>	<p>APPROVED:</p> <p style="text-align: center;"><b>CS.WANG</b></p> <p>DATE: <b>2018/08/21</b></p>
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ECN No: **1808391**

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## 1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
1	ECN-1805194	NEW PRODUCT RELEASE	IH.LEE	2018/05/14
0	ECN-1808391	ADD 52704 SERIES	IH.LEE	2018/08/21

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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 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°C to +85°C**

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## 5.1. Test Requirements and Procedures Summary

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

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**MECHANICAL**

<b>Item</b>	<b>Requirement</b>	<b>Standard</b>
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 pin Un-mating Force: 0.13N Min.per pin(Initial) 0.05N Min.per pin(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 shock 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	Pre Heat : 150°C~180°C , 60~120sec. Heat : 230°C Min., 40sec Min. Peak Temp. : 260°C Max, 10sec Max.
Reseating	Appearance: No damage	Manually mated/unmated the connector or socket perform 3 cycles.

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<b>Item</b>	<b>Requirement</b>	<b>Standard</b>
Thermal Shock	See Product Qualification and Test Sequence Group <b>5</b>	Mate module and subject to follow condition for <b>100</b> cycles. 1 cycles: <b>-55°C and +85 °C each 30min.</b> (EIA-364-32, Test condition I)
Temperature Life	See Product Qualification and Test Sequence Group <b>3</b>	Subject mated connectors to temperature life at <b>105°C</b> for <b>168</b> hours. (EIA-364-17B)
Temperature Life (precondition)	No physical damage	Subject mated connectors to temperature life at <b>105°C</b> for <b>92</b> hours. (EIA-364-17, method A)
Salt Spray	See Product Qualification and Test Sequence Group <b>1</b>	Subject mated connectors to <b>5%</b> salt-solution concentration, <b>35°C</b> <b>Gold plating 30 u" for 96 hours.</b> (EIA-364-26)
Humidity	No Physical damage Initial: <b>30 mΩ</b> Max. After test: <b>10 mΩ</b> Max. change allowed	Subject mated connectors to temperature and humidity of <b>40°C</b> with <b>90%</b> to <b>95%</b> RH for <b>96</b> 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 <b>245 ±5°C</b> , for 4-5 sec. (EIA-364-52)

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

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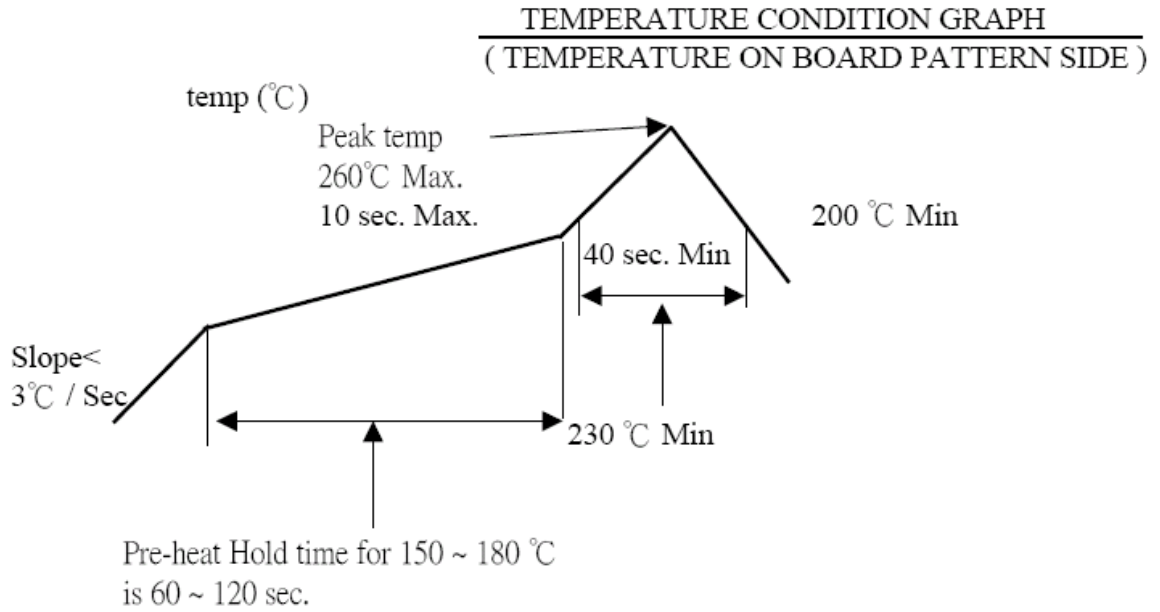
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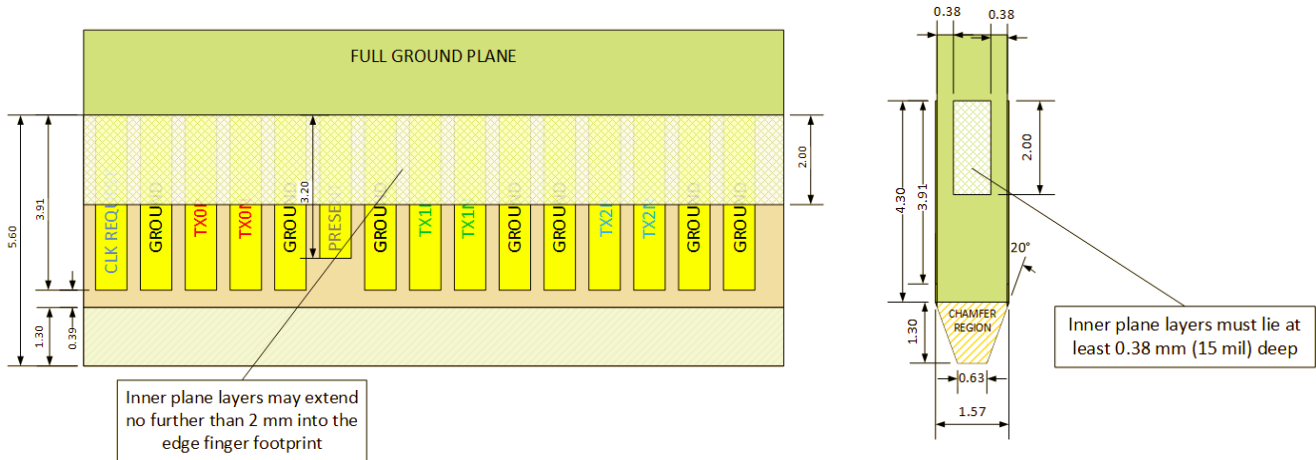
**6 INFRARED REFLOW CONDITION**



**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.





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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