

**SPEC. NO.:** PS-50144-XXXXX-XXX

**REVISION:** B

**PRODUCT NAME:** 1.0mm BOARD TO BOARD CONN.

**PRODUCT NO:** 50144-XXXXX-XXX 50145-XXXXX-XXX

<b>PREPARED:</b>  <b>FENGXIAO</b>  <b>DATE: 2014/01/18</b>	<b>CHECKED:</b>  <b>DAVID</b>  <b>DATE: 2014/01/18</b>	<b>APPROVED:</b>  <b>SIMON</b>  <b>DATE: 2014/01/18</b>
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RELEASE DATE: 2014/01/18

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ECN No: 1401262

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### 1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
O	ECN-0812153	NEW DRAWING	KEEN	08/12/18
A	ECN-1106412	MODIFY WITHDRAW FORCES AND TERMINAL/ HUSING RETENTION FORCE	XHX	11/06/27
B	ECN-1401262	UPDATE WORKING VOLTAGE	FENGXIAO	2014/01/18

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## 2 SCOPE

This specification covers performance, tests and quality requirements for **1.0mm pitch Board To Board CONN**.

## 3 APPLICABLE DOCUMENTS

EIA-364: ELECTRONICS INDUSTRIES ASSOCIATION

## 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: SEE ORDER INFORMATION
- 4.2.2 Housing: **Thermoplastic, high temp. UL94V-0**

### 4.3 Ratings

- 4.3.1 Working Voltage Less than **36 Volts AC (per pin)**
- 4.3.2 Voltage: **100 V (AC(rms)/DC)**
- 4.3.3 Current: **0.5 Amperes (per pin)**
- 4.3.4 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.
<b>ELECTRICAL</b>		
Item	Requirement	Standard
Low Level Contact Resistance	100m $\Omega$ Max.(initial)per contact 150 m $\Omega$ Max.(After test)	Mate connectors, measure by dry circuit, 20mV Max., 100mA Max. (EIA-364-23)
Insulation Resistance	Initial : 1000 M $\Omega$ Min. After test : 100 M $\Omega$ Min.	Unmated connectors, apply 500 V DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	No discharge, flashover or breakdown. Current leakage: 2 mA max.	300 VAC Min. at sea level for 1 minute. Test between adjacent contacts of unmated connectors. (EIA-364-20)

<b>MECHANICAL</b>		
Item	Requirement	Standard
Durability	30 cycles.	The sample should be mounted in the tester and fully mated and unmated the number of cycles specified at the rate of 25.4 $\pm$ 3mm/min. (EIA-364-09)
Insertion and Withdraw Forces	I.F.: 0.98 N(100gf)Max./CKT. W.F.:0.098N(10gf)Min./CKT.	Mate and withdraw connectors at a rate of 25.4 $\pm$ 3 mm/min. (EIA-364-13)
Terminal / Housing Retention Force	1.47 N ( 0.15Kgf ) Min.	Apply axial pull out force on the terminal assembled in the housing at a rate of 25.4 $\pm$ 3 mm/min.
Fitting Nail / Housing Retention Force	0.15Kgf Min.	Operation Speed : 25.4 $\pm$ 3 mm/minute. Measure the contact retention force with Tensile strength tester..
Vibration	1 $\mu$ s Max.	The electrical load condition shall be 100 mA maximum for all contacts. Subject to a simple harmonic motion having amplitude of 0.76mm (1.52mm maximum total excursion) in frequency between the limits of 10 and 55 Hz.

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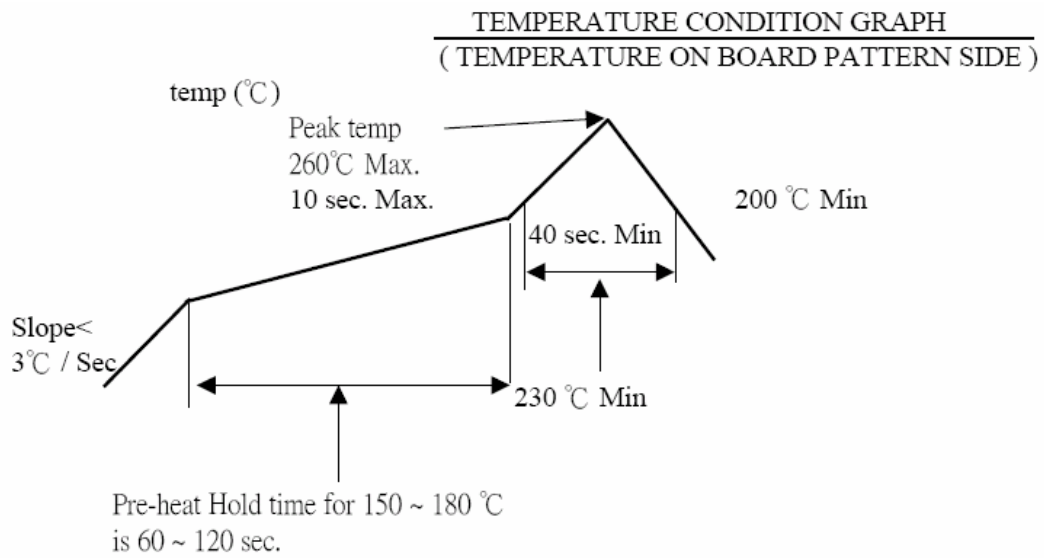
		The entire frequency range, from <b>10 to 55 Hz</b> and return to <b>10Hz</b> , shall be traversed in approximately 1 minute. This motion shall be applied for 2 hours in each of three mutually perpendicular directions. (EIA-364-28 Condition I)
Shock (Mechanical)	<b>1 µs Max.</b>	Subject mated connectors to <b>50 G's</b> (peak value) <b>half-sine</b> shock pulses of <b>11 milliseconds</b> duration. Three shocks in each direction shall be applied along the three mutually perpendicular axes of the test specimen (18 shocks). The electrical load condition shall be 100mA maximum for all contacts. (EIA-364-27, test condition A)

**ENVIRONMENTAL**

Item	Requirement	Standard
Resistance to <b>Reflow Soldering Heat</b>	See Product Qualification and Test Sequence Group <b>9 (Lead Free)</b>	Pre Heat : 150°C~180°C, 60~120sec. Heat : 230°C Min., 40sec Min. Peak Temp. : 260°C Max, 10sec Max. <b>Reflow number cycle: 2 times</b>
Thermal Shock	See Product Qualification and Test Sequence Group <b>3</b>	Mate module and subject to follow condition for 5 cycles. 1 cycles: -55 +0/-3 °C, 30 minutes +85 +3/-0 °C, 30 minutes (EIA-364-32, test condition I)
Humidity	See Product Qualification and Test Sequence Group <b>3</b>	Mated Connector 40°C, 90~95% RH, 96 hours. (EIA-364-31,Condition A, Method II)
Temperature life	See Product Qualification and Test Sequence Group <b>4</b>	Subject mated connectors to temperature life at 85°C for 96 hours. (EIA-364-17, Test condition A)
Salt Spray	See Product Qualification and Test Sequence Group <b>5</b>	Subject mated/unmated connectors to 5% salt-solution concentration, 35°C for <b>8 hours</b> . (EIA-364-26,Test condition B)
Solderability	Tin plating: Solder able area shall have minimum of 95% solder coverage. Gold plating: Solder able area shall have minimum of 75% solder coverage	And then into solder bath, Temperature at <b>245 ±5°C</b> , for <b>4-5 sec.</b> (EIA-364-52)sec.

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

## 6 FRARED REFLOW CONDITION



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**7 PRODUCT QUALIFICATION AND TEST SEQUENCE**

Test or Examination	Test Group									
	1	2	3	4	5	6	7	8	9	10
	Test Sequence									
Examination of Product			1、7	1、6	1、4			1		
Low Level Contact Resistance	1、5	1、4	2、10	2、9	2、5			3		
Insulation Resistance			3、9	3、8						
Dielectric Withstanding Voltage			4、8	4、7						
Mating / Unmating Forces	2、4									
Durability	3									
Vibration		2								
Shock (Mechanical)		3								
Thermal Shock			5							
Humidity			6							
Temperature life				5						
Salt Spray					3					
Solder ability						1				
Terminal / Housing Retention Force							1			
Fitting Nail /Housing Retention Force							2			
Resistance to Soldering Heat								2		
Sample Size	4	4	4	4	4	2	4	4		