



## SPECIFICATION

### 宏致電子股份有限公司

桃園縣中壢市東園路13號

No.13, Dongyuan Rd., Zhongli City,

Taoyuan County 320, Taiwan (R.O.C.)

TEL: +886-3-463-2808

FAX: +886-3-463-1800

SPEC. NO.: PS-50128-XXXXX-XXX REVISION: A

PRODUCT NAME: 0.8mm H=11.0mm BOARD TO BOARD CONNECTOR

PRODUCT NO: 50128、50129 SERIES

PREPARED:  <b>FENGXIAO</b>  DATE: <b>2014/01/18</b>	CHECKED:  <b>ERIC</b>  DATE: <b>2014/01/18</b>	APPROVED:  <b>SIMON</b>  DATE: <b>2014/01/18</b>
--	---	---



**TITLE: 0.8mm H=11.0 mm BOARD TO BOARD CONNECTOR**

RELEASE DATE: 2014/01/18

REVISION: A

ECN No: ECN-1401248

PAGE: **2** OF **9**

1	REVISION HISTORY .....	3
2	SCOPE .....	4
3	APPLICABLE DOCUMENTS.....	4
4	REQUIREMENTS .....	4
5	PERFORMANCE .....	5
6	INFRARED REFLOW CONDITION .....	7
7	MATING/UNMATING FORCE TABLE .....	8
8	PRODUCT QUALIFICATION AND TEST SEQUENCE.....	9



Aces P/N: **50128 series**

TITLE: **0.8mm H=11.0 mm BOARD TO BOARD CONNECTOR**

RELEASE DATE: 2014/01/18

REVISION: A

ECN No: ECN-1401248

PAGE: **3** OF **9**

### 1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
1	ECN-1105047	NEW SPEC	MARK	2011/5/04
O	ECN-1108433	RELEASE	MARK	2011/08/23
A	ECN-1401248	UPDATE WORKING VOLTAGE	FENGXIAO	2014/01/18

TITLE: **0.8mm H=11.0 mm BOARD TO BOARD CONNECTOR**

RELEASE DATE: 2014/01/18

REVISION: A

ECN No: ECN-1401248

PAGE: **4** OF **9**

## 2 SCOPE

This specification covers performance, tests and quality requirements for **0.8mm H=11.0mm board to board connector**.

## 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: (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

### 4.3 Ratings

- 4.3.1 Working Voltage Less than **36 Volts AC (per pin)**
- 4.3.2 Voltage: **50 Volts AC/DC (per pin)**
- 4.3.3 Current: **0.5 Amperes (per pin)**
- 4.3.4 Operating Temperature : **-40°C to +85°C**

## 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	<b>50 m Ω</b> Max.(initial)per contact <b>ΔR 20 m Ω</b> Max.	Mate connectors, measure by dry circuit, <b>20mV</b> Max., <b>100mA</b> Max. (EIA-364-23)
Insulation Resistance	<b>500 M Ω</b> Min. initial <b>100 M Ω</b> Min. final	Unmated connectors, apply <b>250 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>150 VAC</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 connector: measure the temperature rise at rated current until temperature stable. The ambient condition is still air at 25°C (EIA-364-70,METHOD1,CONDITION1)
<b>MECHANICAL</b>		
Item	Requirement	Standard
Durability	<b>60</b> cycles.	The sample should be mounted in the tester and fully mated and unmated the number of cycles specified at the rate of <b>25.4 ± 3mm/min.</b> (EIA-364-09)
Mating / Unmating Forces	Mating Force: 0.15kgf * n (CKT) Max. Unmating Force: 0.015kgf * n (CKT) Min.	Operation Speed : <b>25.4 ± 3</b> mm/minute. Measure the force required to mate/unmate connector. (EIA-364-13)

**TITLE: 0.8mm H=11.0 mm BOARD TO BOARD CONNECTOR**

RELEASE DATE: 2014/01/18

REVISION: A

ECN No: ECN-1401248

PAGE: **6 OF 9**

**MECHANICAL**

Item	Requirement	Standard
Contact Retention Force	150gf Min.	Operation Speed : 25.4 ± 3 mm/minute. Measure the contact retention force with Tensile strength tester.
Vibration	1 μs 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. The entire frequency range, from 10 to 55 Hz and return to 10 Hz, 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)	1 μs Max.	Subject mated connectors to 50 G's (peak value) half-sine shock pulses of 11 milliseconds 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**

Resistance to Reflow Soldering Heat	See Product Qualification and Test Sequence Group 4 (Lead Free)	Pre Heat: 150°C~180°C, 60~120sec. Heat : 230°C Min., 40sec Min. Peak Temp. : 260°C Max, 10sec Max.
Thermal Shock	See Product Qualification and Test Sequence Group 4	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 4	Mated Connector 40°C, 90~95% RH, 96 hours. (EIA-364-31, Condition A, Method II)

**TITLE: 0.8mm H=11.0 mm BOARD TO BOARD CONNECTOR**

RELEASE DATE: 2014/01/18

REVISION: A

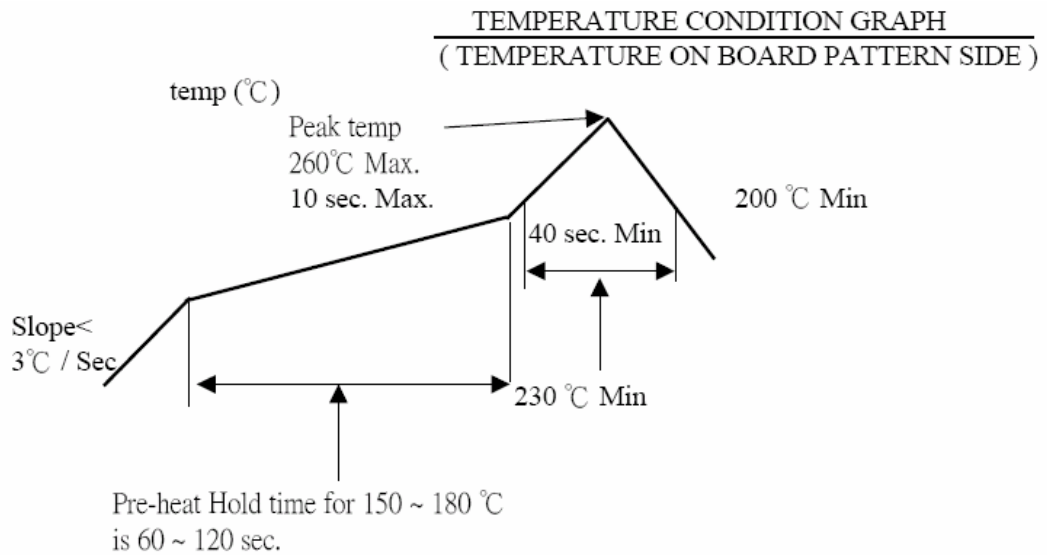
ECN No: ECN-1401248

PAGE: **7** OF **9**

Temperature life	See Product Qualification and Test Sequence Group 5	Subject mated connectors to temperature life at <b>85°C for 96 hours.</b> (EIA-364-17, Test condition A)
Salt Spray (Only For Gold Plating)	See Product Qualification and Test Sequence Group 6	Subject mated/unmated connectors to 5% salt-solution concentration, 35°C <b>(I) Gold flash for 8 hours</b> (EIA-364-26)
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	And then into solder bath, Temperature at <b>245 ±5°C</b> , for <b>4-5 sec.</b> (EIA-364-52)
Hand Soldering Temperature Resistance	Appearance: No damage	T ≥ 350°C, 3sec at least.

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

**6 INFRARED REFLOW CONDITION**



TITLE: **0.8mm H=11.0 mm BOARD TO BOARD CONNECTOR**

RELEASE DATE: 2014/01/18

REVISION: A

ECN No: ECN-1401248

PAGE: **8** OF **9****7 MATING/UNMATING FORCE TABLE**

Unit : Kgf

Pin	Mating Force (Max.)	Unmating Force (Min.)
40	6.0	0.6



TITLE: **0.8mm H=11.0 mm BOARD TO BOARD CONNECTOR**

RELEASE DATE: 2014/01/18

REVISION: A

ECN No: ECN-1401248

PAGE: **9 OF 9**

## 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、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					
Temperature rise	1									
Mating / Unmating Forces		2、4								
Durability		3								
Contact Retention Force								2		
Vibration			2							
Shock (Mechanical)			3							
Thermal Shock				5						
Humidity				6						
Temperature life					5					
Salt Spray(Only For Gold Plating)						3				
Solder ability							1			
Terminal / Housing Retention Force								1		
Resistance to Soldering Heat									2	
<b>Sample Size</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>4</b>	<b>4</b>	