

**SPEC. NO.:** PS-51035-XXXXX-XXX

**REVISION:** 0

**PRODUCT NAME:** 1.25mm PITCH BTB D/R CONN SMT S/T TYPE

**PRODUCT NO:** 51035 & 51036 SERIES

<b>PREPARED:</b>  <b>TANGENHUI</b>  <b>DATE:</b> <b>2014/3/21</b>	<b>CHECKED:</b>  <b>DAVID</b>  <b>DATE:</b> <b>2014/3/21</b>	<b>APPROVED:</b>  <b>SIMON</b>  <b>DATE:</b> <b>2014/3/21</b>
--	---	--

TITLE: **1.25 mm PITCH BTB D/R CONN SMT S/T TYPE**

RELEASE DATE: **2014/3/21**

REVISION: **0**

ECN No: **1403295**

PAGE: **2** OF **11**

1	REVISION HISTORY .....	3
2	SCOPE .....	4
3	APPLICABLE DOCUMENTS.....	4
4	REQUIREMENTS .....	4
5	PERFORMANCE .....	5
6	INFRARED REFLOW CONDITION .....	7
7	CONNECTOR USAGE .....	8
8	CONNECTOR MATING / UNMATING FORCE .....	9
9	PRODUCT QUALIFICATION AND TEST SEQUENCE.....	10
10	CONNECTOR OPERATION.....	11

Aces P/N: **51035 series**

TITLE: **1.25 mm PITCH BTB D/R CONN SMT S/T TYPE**

RELEASE DATE: 2014/3/21

REVISION: 0

ECN No: 1403295

PAGE: 3 OF 11

## 1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
1	ECN-1304263	NEW DRAWING	TANGENHUI	2013/04/20
2	ECN-1309276	REVISED ELECTRICAL	TANGENHUI	2013/07/30
3	ECN-1401165	ADD Working Voltage	XIAOXIONG	2014/01/18
0	ECN-1403295	REVISED COTACT RETENTION FORCE	TANGENHUI	2014/03/21

TITLE: **1.25 mm PITCH BTB D/R CONN SMT S/T TYPE**

RELEASE DATE: 2014/3/21

REVISION: 0

ECN No: 1403295

PAGE: 4 OF 11

## 2 SCOPE

This specification covers performance, tests and quality requirements for 1.25 mm pitch 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 And Brass)  
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 (per pin)
- 4.3.3 Current: 0.5 Amperes (per pin)
- 4.3.4 Operating Temperature : -30°C to +105°C

TITLE: **1.25 mm PITCH BTB D/R CONN SMT S/T TYPE**

RELEASE DATE: 2014/3/21

REVISION: 0

ECN No: 1403295

PAGE: 5 OF 11

**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	10 m $\Omega$ Max.(Initial)per contact 20 m $\Omega$ Max.(Final)per contact	Mate connectors, measure by dry circuit, 20mV Max., 10mA Max. (EIA-364-23)
Insulation Resistance	500 M $\Omega$ Min. (Initial) 100 M $\Omega$ Min. (Final)	Unmated connectors, apply 100 V DC between adjacent terminals. (EIA-364-21)
Dielectric Withstanding Voltage	No discharge, flashover or breakdown. Current leakage: 0.5 mA max.	500 VAC 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 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	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)
Mating / Unmating Forces	Refer to page.9 Mating / Unmating Forces	Operation Speed : 25.4 $\pm$ 3 mm/minute.. Measure the force required to mate/unmate connector. (EIA-364-13)
Contact Retention Force	0.30kgf Min.	Operation Speed : 25.4 $\pm$ 3 mm/minute. Measure the contact retention force with tester.

TITLE: **1.25 mm PITCH BTB D/R CONN SMT S/T TYPE**

RELEASE DATE: 2014/3/21

REVISION: 0

ECN No: 1403295

PAGE: 6 OF 11

**MECHANICAL**

Item	Requirement	Standard
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. 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 $\mu$ s 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**

Item	Requirement	Standard
Resistance to <b>Reflow</b> Soldering Heat	See Product Qualification and Test Sequence Group 9 ( <b>Lead Free</b> )	Pre Heat : 150°C~180°C, 60~120sec. Heat : 230°C Min., 40sec Min. Peak Temp. : 260°C Max, 10sec Max. Reflow number cycle: 2 times
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: **1.25 mm PITCH BTB D/R CONN SMT S/T TYPE**

RELEASE DATE: 2014/3/21

REVISION: 0

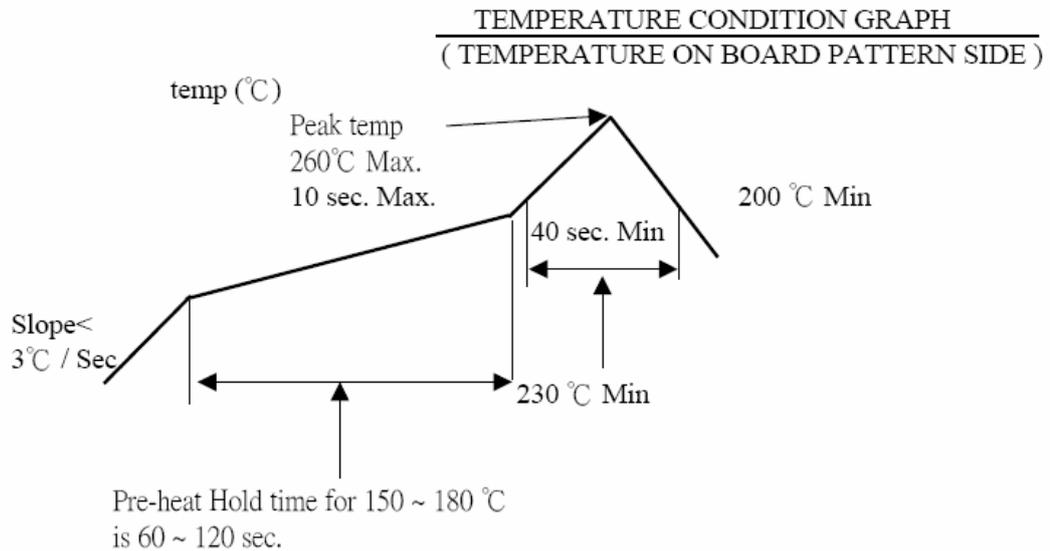
ECN No: 1403295

PAGE: 7 OF 11

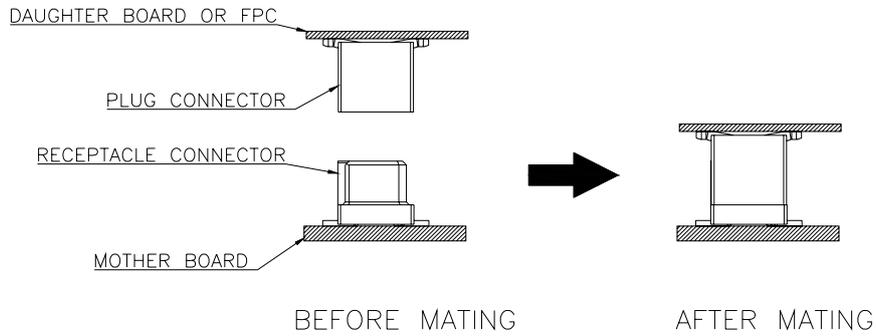
<b>ENVIRONMENTAL</b>		
<b>Item</b>	<b>Requirement</b>	<b>Standard</b>
Temperature Life	See Product Qualification and Test Sequence Group 5	Subject mated connectors to temperature life at 85°C for 96 hours. (EIA-364-17, Test condition A)
Salt Spray (Only For Gold Plating)	See Product Qualification and Test Sequence Group 6	Subject mated/unmated connectors to 5% salt-solution concentration, 35°C (I) Gold flash for 8 hours (II) Gold plating 5 u" for 96 hours. (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 245 ±5°C, for 4-5 sec. (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

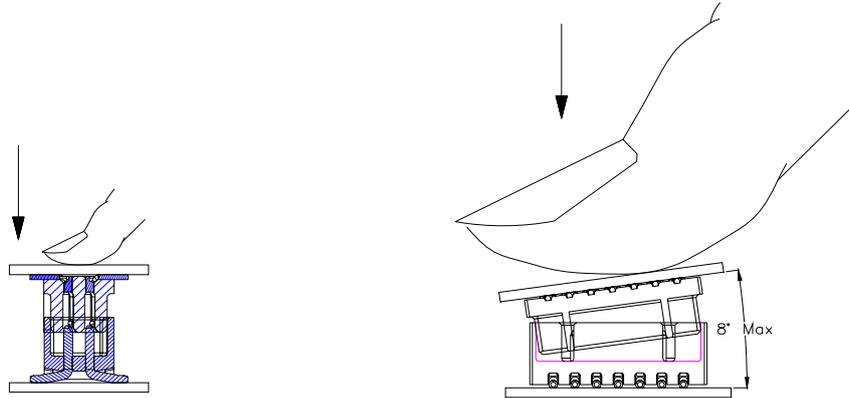


### 7 CONNECTOR USAGE

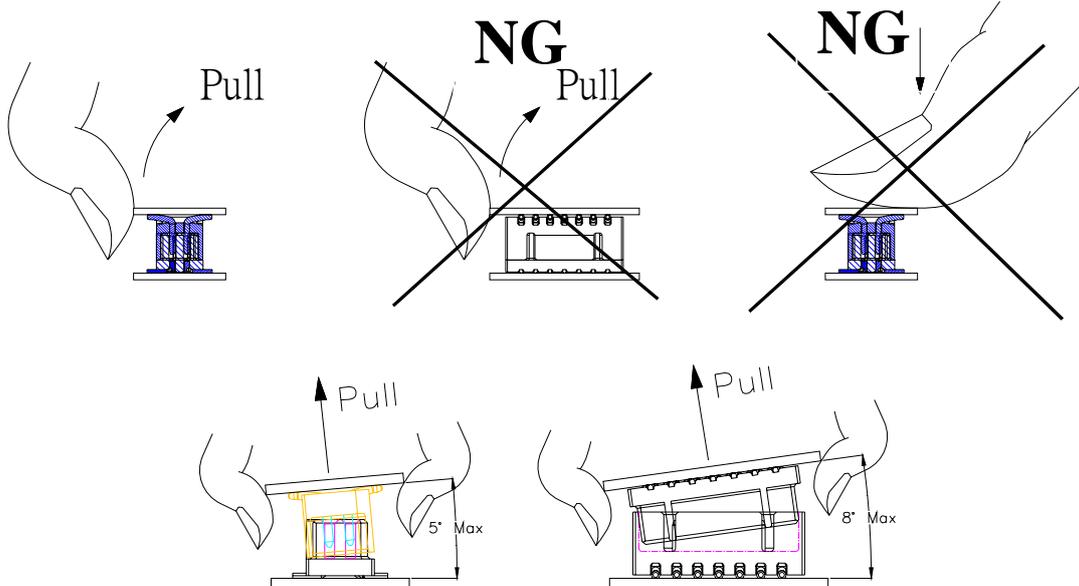


### MATING PROCEDURE

Check the mating condition



### UNMATING PROCEDURE





Aces P/N: **51035 series**

TITLE: **1.25 mm PITCH BTB D/R CONN SMT S/T TYPE**

RELEASE DATE: 2014/3/21

REVISION: 0

ECN No: 1403295

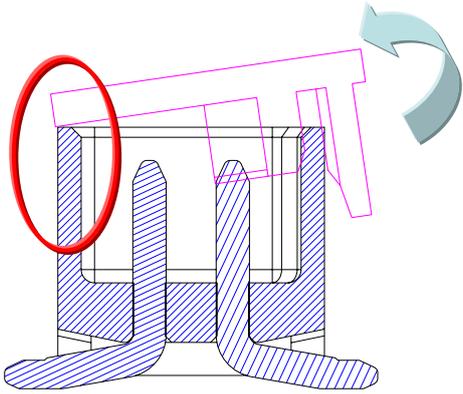
PAGE: 10 OF 11

## 9 PRODUCT QUALIFICATION AND TEST SEQUENCE

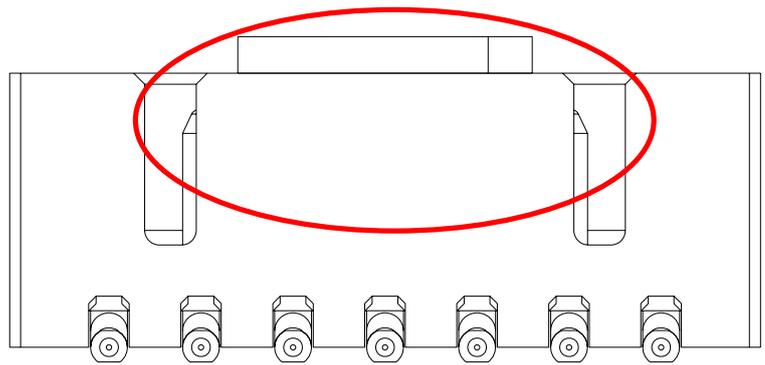
Test or Examination	Test Group									
	1	2	3	4	5	6	7	8	9	10
	Test Sequence									
Examination of Product				1、7	1、6	1、4			1	1
Low Level Contact Resistance		1、5	1、4	2、10	2、9	2、5			3	
Insulation Resistance				3、9	3、8					
Dielectric Withstanding Voltage				4、8	4、7					
Temperature Rise	1									
Mating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

### 10 CONNECTOR OPERATION

Exercise care when removing nozzle caps prior and after IR process. Follow recommendations given below.



Flip cap towards weaker wall



Weaker portion of walls