SPECIFICATION

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SPEC. NO.: PS-51347-xxxxx-xxx **REVISION:** D

PRODUCT NAME: 1.0 mm PITCH WTB CONNECTOR

PRODUCT NO: 51347 SERIES

PREPARED:	CHECKED:	APPROVED:
LUTAOTAO	**BRAVE**	**BRAVE**
DATE: **2019/07/17**	DATE: **2019/07/17**	DATE: **2019/07/17**

1 REVISION HISTORY

Rev.	ECN #	Revision Description	Prepared	Date
O	ECN-1706332	NEW SPEC	JINTAO	2017/03/06
A	ECN-1804150	Revise AWG NO.	JINTAO	2018/03/26
B	ECN-1805167	FOR APD1070077 ADD 50PIN	Chai, Yun he	2018/05/11
C	ECN-1812307	FOR APD1070391 ADD 40PIN	HUYANG	2019/06/04
D	ECN- 1907391	FOR APD1080135 ADD 24PIN	LUTAOTAO	2019/07/17

2 SCOPE

This specification covers performance, tests and quality requirements for 1.0 mm pitch WTB 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.
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

4.3.1 Voltage: 50 Volts AC (per pin)
4.3.2 Current: AWG#28: 1.0 Amperes (per pin)
AWG#30: 1.0 Amperes (per pin)
AWG#32: 0.8 Amperes (per pin)
4.3.3 Operating Temperature : -40℃ to +85℃

5 Performance

5.1. Test Requirements and Procedures Summary

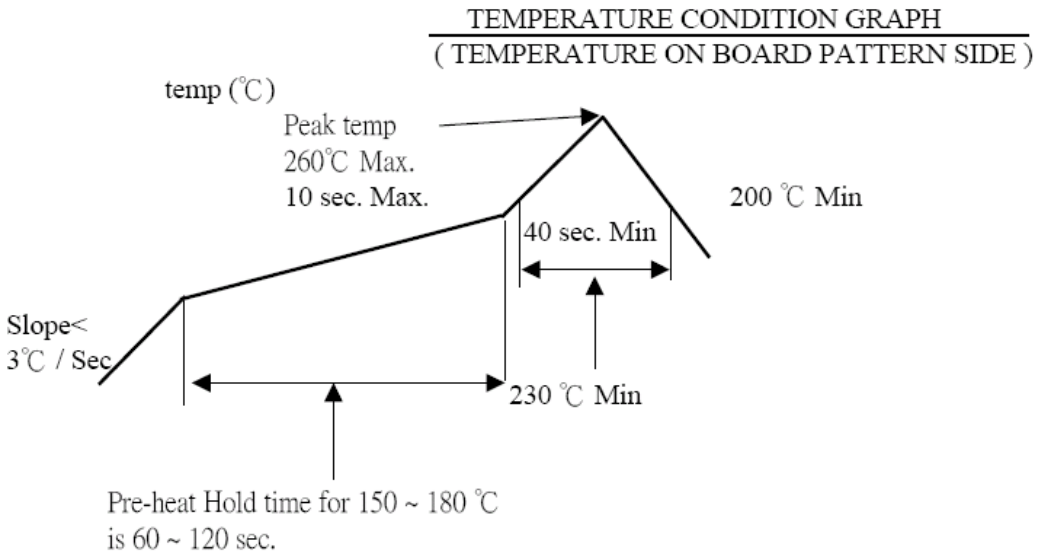
Item	Requirement	Standard
Examination of Product	Product shall meet requirements of applicable product drawing and specification.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Item	**Requirement**	**Standard**
Low Level Contact Resistance	55 m Ω Max. per contact △R 20 m Ω Max.	Mate connectors, measure by dry circuit, 20mV Max., 100mA Max. (EIA-364-23)
Insulation Resistance	100 M Ω 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.	500V AC Min. at sea level for 1 minute. Test between adjacent contacts of unmated connectors. (EIA-364-20)
Temperature Rise	30℃ Max. Change allowed	Mate connector: measure the temperature rise at rated current until temperature stable. The ambient condition is still air at 25℃ (EIA-364-70,METHOD1,CONDITION1)
MECHANICAL		
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 ± 3mm/min.
Mating / Unmating Forces (Remove Lock)	Please see Item 8	Operation Speed： 25.4 ± 3 mm/minute.. Measure the force required to mate/unmate connector. (EIA-364-13)
Housing Lock Strength (Positive Lock)	2.0 Kgf MIN.	Mated Connectors,and apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute.
Terminal /Housing Retention Force (Board Side)	0.25 Kgf MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the fitting nail assembled in the housing.

Fitting Nail /Housing Retention Force (Board Side)	0.15 Kgf MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the terminal assembled in the housing.
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		
Item	**Requirement**	**Standard**
Resistance to **Reflow** Soldering Heat (Board Side)	See Product Qualification and Test Sequence Group 9 **(Lead Free)**	Pre Heat：150℃~180℃, 60~120sec. Heat：230℃ Min., 40sec Min. Peak Temp.：260℃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: -40 +0/-3 ℃, 30 minutes +85 +3/-0 ℃, 30 minutes (EIA-364-32, test condition I)
Humidity	See Product Qualification and Test Sequence Group 4	Mated Connector 40℃+2/-2℃, 90~95% RH, 96 hours. (EIA-364-31,Condition A, Method II)

Temperature Life	See Product Qualification and Test Sequence Group 5	Subject mated connectors to temperature life at 85℃ 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℃ (I) Gold plating ＜3u" for 8 hours. (II) 3u"≤Gold plating＜5u" for 48 hours (III) Gold plating≥5u" for 96 hours. (EIA-364-26)
Solder ability (Board Side)	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℃, for 4-5 sec. (EIA-364-52)
Hand Soldering Temperature Resistance (Board Side)	Appearance: No damage	T≧350℃, 3sec at least.

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

6 INFRARED REFLOW CONDITION



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、3	1、7	1、6	1、7	1、6	1、4	1、3		1、4	1、3
Low Level Contact Resistance		2、6	2、5	2、10	2、9	2、5			3	
Insulation Resistance				3、9	3、8					
Dielectric Withstanding Voltage				4、8	4、7					
Temperature Rise	2									
Mating / Unmating Force		3、5								
Durability		4								
Contact Retention Force (Board Side)								1		
Vibration			3							
Shock (Mechanical)			4							
Thermal Shock				5						
Humidity				6						
Temperature Life					5					
Salt Spray (Only For Gold Plating)						3				
Solder ability (Board Side)							2			
Fitting Nail /Housing Retention Force								2		
Resistance to Soldering Heat (Board Side)									2	
Hand Soldering Temperature Resistance (Board Side)										2
Sample Size	2	4	4	4	4	4	2	4	4	4

8 MATING / UNMATING FORCE

Number of circuits	mating Force kgf. (MAX.)		Unmating Force kgf. (Min.)	
	1st	30th	1st	30th
020	3.0	3.0	0.35	0.35
024	3.6	3.6	0.40	0.40
040	6.0	6.0	0.70	0.70
050	7.5	7.5	0.85	0.85