# SPECIFICATION


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**SPEC. NO.:** PS-51355-xxxxx-xxx **REVISION:** A

**PRODUCT NAME:** 2.0MM PITCH WTB(WAFER) CONNECTOR

**PRODUCT NO:** 51355series、51356series

| PREPARED: | CHECKED: | APPROVED: |
|---|---|---|
| Hu,Shui Hong | Lu,Jing Quan | hsieh,fu yu |
| DATE: 2019.08.1 | DATE: 2019.08.1 | DATE: 2019.08.1 |

# 1 Revision History

| Rev. | ECN # | Revision Description | Prepared | Date |
|---|---|---|---|---|
| 1 | ECN-1903245 | ADD 51355,51356 SERIES | Hu,Shui Hong | 2018.09.13 |
| A | ECN-1906291 | CHANGE THE TEST ORDER OF GROUP 3 | Rong, Li Ping | 2019.08.3 |
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## 2 SCOPE

This specification covers performance, tests and quality requirements for 2.0mm pitch Wire to Board wafer SMT T/H Type. This Product SPEC refer to Aces's P/N:51355;51356 series.

## 3 APPLICABLE DOCUMENTS

**EIA-364** **ELECTRONICS INDUSTRIES ASSOCIATION**

## 4 REQUIREMENTS

4.1 Design and Construction

Product shall be of design, construction and physical dimensions specified on applicable product drawing.

4.2 Materials and Finish

4.2.1 Contact: High performance copper alloy (Brass)
Finish: (a) Contact Area: Matt Tin
(b) Under plate: Nickel-plated all over
(c) Solder area: Tin-Lead plated
4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0

4.3 Ratings

4.3.1 Working voltage less than 36 volts (per pin)
4.3.2 Voltage: 250 Volts AC ,DC
4.3.3 Current: 3 Amperes AC,DC
4.3.4 Operating Temperature : -25℃ 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. |

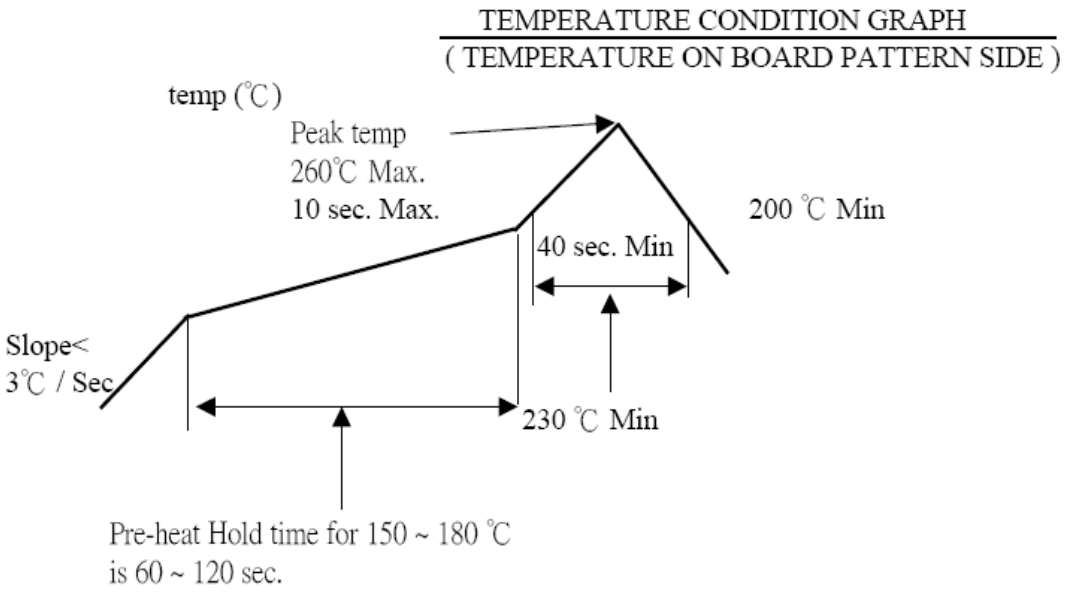
| ELECTRICAL | | |
|---|---|---|
| **Item** | **Requirement** | **Standard** |
| Low-signal Level Contact Resistance | 10 m Ω Max.(initial)per contact<br>20 m Ω Max. Change allowed | Mate connectors, measure by dry circuit, 20mV Max., 100mA Max.<br>(EIA-364-23) |
| Insulation Resistance | Initial/1000 M Ω Min. | Unmated connectors, apply 500 V DC between adjacent terminals.<br>(EIA-364-21) |
| Dielectric Withstanding Voltage | 800 VAC Min. at sea level for 1 minute.<br>No discharge, flashover or breakdown.<br>Current leakage: 1 mA max. | Test between adjacent contacts of unmated connectors.<br>(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℃<br>(EIA-364-70<br>METHOD 1,CONDITION 1) |
| **MECHANICAL** | | |
| Durability | 30 cycles. | The sample should be fully mated and unmated **manually** the number of cycles specified at the rate of 25.4 ± 3mm/min.<br>(EIA-364-09) |
| Lock Retention Forces | Force: 2.0 Kg Min. | Operation Speed：<br>25.4 ± 3 mm/minute..<br>Measure the lock retention force with Tensile strength tester.<br>While withdrawing header & receptacle |
| Contact Retention Force | 300gf Min. | Operation Speed：<br>25.4 ± 3 mm/minute.<br>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.<br>(EIA-364-28 Condition I) |

| MECHANICAL | | |
|---|---|---|
| **Item** | **Requirement** | **Standard** |
| 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 10 **(Lead Free)** | Solder Temp.： 260±5℃, 10±0.5sec. |
| Thermal Shock | See Product Qualification and Test Sequence Group 5 | Mate module and subject to follow condition for 5 cycles. 1 cycles: -25 +0/-3 ℃, 30 minutes +85 +3/-0 ℃, 30 minutes (EIA-364-32, test condition A) |
| Humidity | See Product Qualification and Test Sequence Group 5 | Mated Connector 40℃, 90~95% RH, Reefer to Method II. (EIA-364-31, Test condition A) |
| Temperature life | See Product Qualification and Test Sequence Group 6 | Subject mated connectors to temperature life at 85℃ for 96 hours. Measure Signal. (EIA-364-17, Test condition A) |
| Salt Spray | See Product Qualification and Test Sequence Group 7 | Subject mated/unmated connectors to 5% salt-solution concentration, 35 ℃ . 1. Gold Flash for 8 hours 2. Gold plating 3u"for 48 hours 3. Gold plating 5u"for 96 hours (EIA-364-26,Test condition B) |
| Solder ability | Solder able area shall have minimum of 75% solder coverage. | Subject the test area of contacts into the flux for 5-10 sec. And then into solder bath, Temperature at 245 ±5 ℃, for 4-5 sec. (EIA-364-52) |

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

# 6 INFRARED REFLOW CONDITION

Lead-free Process



## 7 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 | 1 | 1 | 1、7 | 1、6 | 1、4 | 1 | 1 | 1 | | |
| Low-signal Level Contact Resistance | | 2、4 | 2、5 | 2、10 | 2、9 | 2、5 | | | 3 | | |
| Insulation Resistance | | | | 3、9 | 3、8 | | | | | | |
| Dielectric Withstanding Voltage | | | | 4、8 | 4、7 | | | | | | |
| Temperature rise | 1 | | | | | | | | | | |
| Lock Retention Forces | | 5 | | | | | | | | | |
| Durability | | 3 | | | | | | | | | |
| Contact Retention Force | | | | | | | | 2 | | | |
| Vibration | | | 3 | | | | | | | | |
| Shock (Mechanical) | | | 4 | | | | | | | | |
| Thermal Shock | | | | 5 | | | | | | | |
| Humidity | | | | 6 | | | | | | | |
| Temperature life | | | | | 5 | | | | | | |
| Salt Spray | | | | | | 3 | | | | | |
| Solder ability | | | | | | | 2 | | | | |
| Resistance to Reflow Soldering Heat | | | | | | | | | 2 | | |
| | | | | | | | | | | | |
| Sample Size | 2 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | | |