



SPECIFICATION

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SPEC. NO.: PS-50050-XXXXX-XXX REVISION: C

PRODUCT NAME: 0.5 mm PITCH BTB CONN SMT D/R S/T TYPE

PRODUCT NO: 50050 SERIES. 50019 SERIES. 50051 SERIES.

| | | |
|---|--|---|
| PREPARED: TANGENHUI DATE: 2014/01/18 | CHECKED: DAVID DATE: 2014/01/18 | APPROVED: SIMON DATE: 2014/01/18 |
|---|--|---|



Aces P/N: **50050 series**

TITLE: **0.5 MM PITCH BTB CONN SMT D/R S/T TYPE**

RELEASE DATE: 14/01/18

REVISION: C

ECN No: ECN-1401255

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1 Revision History

| Rev. | ECN # | Revision Description | Prepared | Date |
|------|-------------|----------------------|-----------|------------|
| O | ECN-0812038 | NEW SPEC | JINGQUAN | 08/11/25 |
| A | ECN-1004172 | REVISE ERRORS | WEIXING | 10/04/21 |
| B | ECN-1011192 | REVISE ERRORS | WEIXING | 10/11/25 |
| C | ECN-1401255 | ADD WORKING VOLTAGE | TANGENHUI | 2014/01/18 |
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2 SCOPE

This specification covers performance, tests and quality requirements for **0.5 mm PITCH BTB CONN SMT D/R S/T TYPE**.

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 (**Phosphor Bronze**)
Finish: **Refer to the drawing**.
- 4.2.1 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0
- 4.2.2 Nut or Ear: **Copper Alloy**.

4.3 Ratings

- 4.3.1 **Working Voltage Less than 36 Volts AC (per pin)**
- 4.3.2 Voltage: **100 Volts AC (per pin)**
- 4.3.3 Current: 0.5 Amperes (per pin)
- 4.3.3 Operating Temperature: **-40°C to +80°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. |
| ELECTRICAL | | |
| Item | Requirement | Standard |
| Low Level Contact Resistance | 40 m Ω Max.(initial)per contact 20 m Ω Max. Change allowed | Mate connectors, measure by dry circuit, 20mV Max., 100mA Max. (EIA-364-23) |
| Insulation Resistance | 1000 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: 1mA max. | 250 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-364-70METHOD1 , CONDITION 1) |

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| 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. (EIA-364-09) |
| Mating / Unmating Forces | Mating Force: 75g Max./CKT Unmating Force: 12g Min/CKT | Operation Speed : 25.4 ± 3 mm/minute.. Measure the force required to mate/unmate connector. (EIA-364-13) |
| Contact Retention Force | 300gf Min. | Operation Speed : 25.4 ± 3 mm/minute. Measure the contact retention force with Tensile strength tester. |
| Fitting Nail /Housing Retention Force | 0.2kgf MIN. | Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the fitting nail assembled in the housing. |
| Vibration | 1 μ 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 μ 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) |

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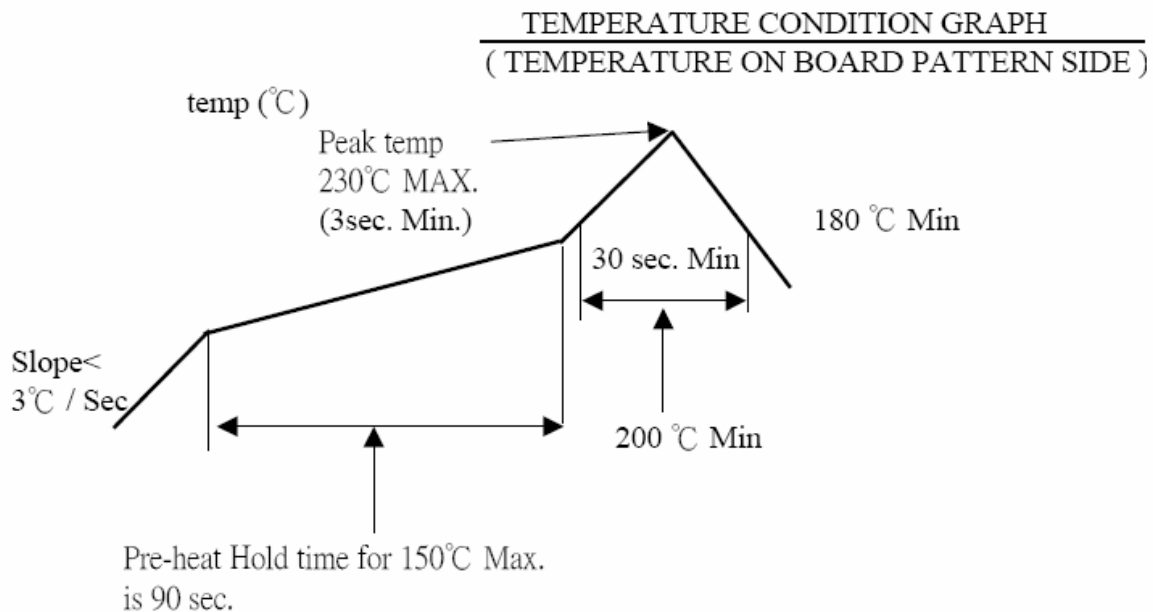
ENVIRONMENTAL

| Item | Requirement | Standard |
|---|--|--|
| Resistance to Wave Soldering Heat | See Product Qualification and Test Sequence Group 9 (Lead Free) | Solder Temp. : 265±5°C, 10±0.5sec. |
| Resistance to Reflow Soldering Heat | See Product Qualification and Test Sequence Group 9 (Lead Free) | Pre Heat : 150°C~180°C, 60~90sec. 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: -40+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) |
| 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 | See Product Qualification and Test Sequence Group 6 | Subject mated/unmated connectors to 5% salt-solution concentration, 35°C for 8 hours. (EIA-364-26, Test condition B) |
| Solder ability | Solder able area shall have minimum of 95% solder coverage. | Subject the test area of contacts into the flux for 5-10 sec. And then into solder bath, Temperature at 245 ±5°C , for 4-5 sec. (EIA-364-52) |

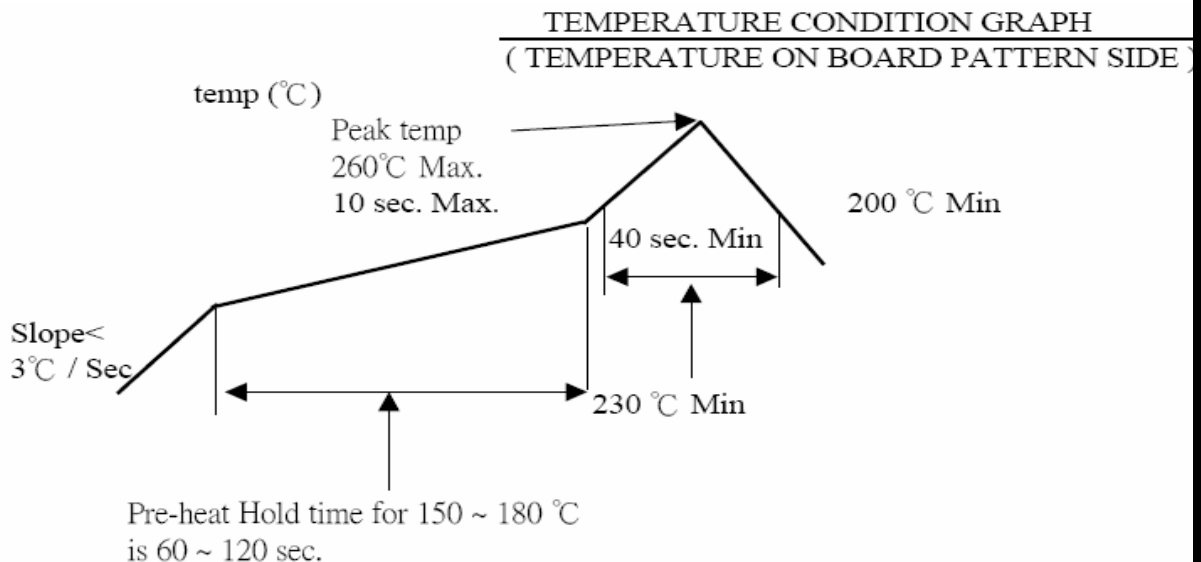
Note. Flowing Mixed Gas shall be conduct by customer request.

6 INFRARED REFLOW CONDITION

6.1 General Process



6.2. Lead-free Process



6.3 Hand soldering iron: 350°±5°, **Duration 3Sec at least.**

6.4 IR Reflow 2 times.

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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、3 | |
| Low Level Contact Resistance | | 1、5 | 1、4 | 2、10 | 2、9 | 2、5 | | | | |
| 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 | | | | | | | | 1 | | |
| Vibration | | | 2 | | | | | | | |
| Shock (Mechanical) | | | 3 | | | | | | | |
| Thermal Shock | | | | 5 | | | | | | |
| Humidity | | | | 6 | | | | | | |
| Temperature life | | | | | 5 | | | | | |
| Salt Spray | | | | | | 3 | | | | |
| Solder ability | | | | | | | 1 | | | |
| Fitting Nail /Housing Retention Force | | | | | | | | 2 | | |
| Resistance to Soldering Heat | | | | | | | | | 2 | |
| Sample Size | 2 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | |