# SPECIFICATION


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**SPEC. NO.:** PS-92004-XXXXX **REVISION:** A

**PRODUCT NAME:** 2.54MM MICRO POWER QUADLOK

**PRODUCT NO:** 92004-0401L-001

| PREPARED: | CHECKED: | APPROVED: |
|---|---|---|
| LLJ | ANDREW | SIMON |
| DATE: 2014/08/12 | DATE: 2014/08/12 | DATE: 2014/08/12 |

## 1 Revision History

| Rev. | ECN # | Revision Description | Prepared | Date |
|---|---|---|---|---|
| O | ECN-1112223 | NEW RELEASED | STANLEY | 2011.12.13 |
| A | ECN-1406001 | Terminal / Housing Retention Force Is 2.5kgfMin | LLJ | 2014.08.12 |
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## 2 SCOPE

This specification covers performance, tests and quality requirements for 2.54mm Micro Power Quadlok These connectors are used in cars.

## 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: Tin plated
(b) Under plate: Nickel-plated all over
(c) Solder area: Tin plated

4.2.2 Housing: Thermoplastic High Temp., UL94V-0

4.3 Ratings

4.3.1 Voltage: 80 Volts AC (per pin)
4.3.2 Current: 3 Amperes (per pin)
4.3.3 Operating Temperature : -40℃ to +105℃

## 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 | 20 m Ω Max.(initial)per contact △R (after test)15 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. | 300 VAC 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-364-70METHOD1,CONDITION 1) |
| **MECHANICAL** | | |
| **Item** | **Requirement** | **Standard** |
| Mating / Unmating Forces | Mating Force: 20 Kg Max. (With Lock) Unmating Force: 25 Kg Max. (Without Lock) | Operation Speed： 25.4±3mm/minute. Measure the force required to mate/Unmate connector. (EIA-364-13) |
| 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) |
| Terminal / Housing Retention Force | 2.5kgf Min. | Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the terminal assembled in the housing. |
| 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 **Wave** Soldering Heat | See Product Qualification and Test Sequence Group 6 **(Lead Free)** | Solder Temp.：<br>265±5℃, 10±0.5sec. |
| Thermal Shock | See Product Qualification and Test Sequence Group 4 | Mate module and subject to follow condition for 5 cycles.<br>1 cycles:<br>-55 +0/-3 ℃, 30 minutes<br>+85 +3/-0 ℃, 30 minutes<br>(EIA-364-32, test condition I) |
| Humidity | See Product Qualification and Test Sequence Group 4 | Mated Connector<br>40℃, 90~95% RH,<br>96 hours.<br>(EIA-364-31,Condition A, Method II) |
| Solder ability | Solder able area shall have minimum of 95% solder coverage. | And then into solder bath, Temperature at 245 ±5℃, for 4-5 sec.<br>(EIA-364-52) |
| Low Temperature test | See Product Qualification and Test Sequence Group 7 | Subject mated connectors to temperature life at -40℃ for 96 hours. Measure Signal.<br>(EIA-364-59) |
| Temperature life(Heat) | See Product Qualification and Test Sequence Group 8 | Subject mated connectors to temperature life at 105℃ for 96 hours. Measure Signal.<br>(EIA-364-17, Test condition A) |

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

## 5 PRODUCT QUALIFICATION AND TEST SEQUENCE

| Test or Examination | Test Group | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | Test Sequence | | | | | | | |
| Examination of Product | | | | 1、7 | | 1 | 1、6 | 1、6 |
| Low Level Contact Resistance | | 1 | 1、4 | 2、10 | | 3 | 2、9 | 2、9 |
| Insulation Resistance | | | | 3、9 | | | 3、8 | 3、8 |
| Dielectric Withstanding Voltage | | | | 4、8 | | | 4、7 | 4、7 |
| Temperature rise | 1 | | | | | | | |
| Mating / Unmating Forces | | 2 | | | | | | |
| Terminal / Housing Retention Force | | | | | 1 | | | |
| Vibration | | | 2 | | | | | |
| Shock (Mechanical) | | | 3 | | | | | |
| Thermal Shock | | | | 5 | | | | |
| Humidity | | | | 6 | | | | |
| Solder ability | | | | | 2 | | | |
| Resistance to Wave Soldering Heat | | | | | | 2 | | |
| Low Temperature test | | | | | | | 5 | |
| Temperature life (Heat) | | | | | | | | 5 |
| Sample Size | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 4 |