# 7 Pin Header Serial ATA II Connector

## 1. INTRODUCTION

1.1. Purpose

Testing was performed on the Tyco Electronics 7 Pin Serial ATA II connector to determine its conformance to the requirements of Product Specification 108-57469, Revision B.

1.2. Scope

This report covers the electrical, mechanical, and environmental performance of the 7 Pin Serial ATA II connector.

1.3. Conclusion

The 7 Pin Serial ATA II connector listed in paragraph 1.5. conformed to the electrical, mechanical, and environmental performance requirements of Product Specification 108-57469, Revision B.

1.4. Product Description

The 7 Pin Serial ATA II connector is a high-speed serial link replacement for the parallel ATA attachment of mass storage devices.

1.5. Test Specimens

Test specimens were representative of normal production lots. The following specimens were used for test.

| Test Group | Quantity | Description |
|---|---|---|
| A, B, C, D, E, F | 5 ea. | 7 Pin Serial ATA II connector DIP |
| A, B, C, D, F, G | 5 ea. | 7 Pin Serial ATA II connector SMT |

1.6. Qualification Test Sequence

| Test or Examination | Test Group | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G |
| | Test Sequence (a) | | | | | | |
| Examination of the connector | 1, 5 | 1, 9 | 1, 5 | 1, 8 | 1, 3 | 1, 3 | 1, 3 |
| Low Level Contact Resistance | 2, 4 | 3, 7 | 2, 4 | | | | |
| Insulation Resistance | | | | 2, 6 | | | |
| Dielectric Withstanding Voltage | | | | 3, 7 | | | |
| Mating Force | | 2 | | | | | |
| Unmating Force | | 8 | | | | | |
| Durability | 3(b) | 4(b) | | | | | |
| Physical Shock | | 6 | | | | | |
| Vibration | | 5 | | | | | |
| Humidity | | | | 5 | | | |
| Temperature Life | | | 3 | | | | |
| Thermal Shock | | | | 4 | | | |
| Resistance to Wave Soldering Heat | | | | | 2 | | |
| Solderability | | | | | | 2 | |
| Resistance to Reflow Soldering Heat | | | | | | | 2 |

NOTE
(a) Numbers indicate sequence in which test are performed.
(b) Preconditioning, 20cycles for the 50-durability cycles requirement, 50cyles for the 500-durability cycles requirement. The insertion and removal cycle is at the maximum rate of 200cycles per hours.
(c) Discontinuities shall not take place in this test group, during tests.

Figure 1



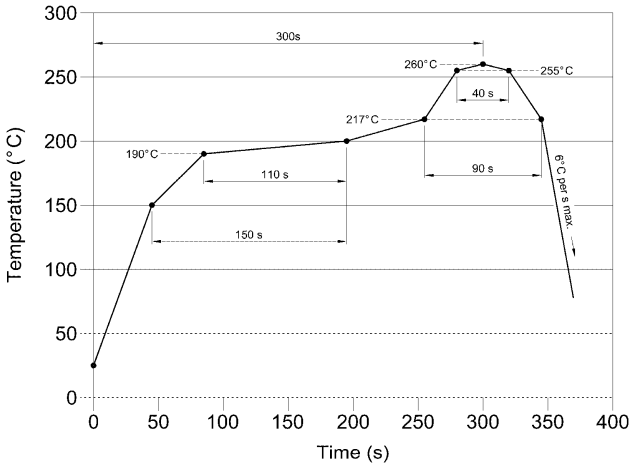
tyco Electronics

Tyco Holdings (Bermuda) VII LTD.
Taiwan Branch
3F, No. 45, Dongsing Road,
Taipei 11070, Taiwan. ROC.
TEL: 886-2-8768-2788

## 2. TEST RESULT

| Test Group | Test Description | Requirement | Test Result | | | | Judgment |
|---|---|---|---|---|---|---|---|
| | | | Max. | Min. | Ave. | σ | |
| A | Contact Resistance | 30 mΩ Max. | 15.10 | 12.50 | 13.788 | 0.986 | Accepted |
| | Durability | No damage. | PASSED | | | | Accepted |
| | Contact Resistance | 30 mΩ Max. | 15.30 | 13.60 | 14.563 | 0.609 | Accepted |
| | Examination of product. | Meets product drawing. | PASSED | | | | Accepted |
| B | Mating Force | 20 N Max. | 10.35 | 10.19 | 10.268 | 0.060 | Accepted |
| | Contact Resistance | 30 mΩ Max. | 15.20 | 13.50 | 14.375 | 0.643 | Accepted |
| | Durability | No damage. | PASSED | | | | Accepted |
| | Vibration | No discontinuities or damage. | PASSED | | | | Accepted |
| | Physical Shock | No discontinuities or damage. | PASSED | | | | Accepted |
| | Contact Resistance | 30 mΩ Max. | 15.20 | 13.80 | 14.688 | 0.567 | Accepted |
| | Un-mating Force | 4 N Min. | 10.60 | 10.39 | 10.499 | 0.069 | Accepted |
| | Examination of product. | Meets product drawing. | PASSED | | | | Accepted |
| C | Contact Resistance | 30 mΩ Max. | 15.20 | 13.60 | 14.438 | 0.621 | Accepted |
| | Temperature Life | No damage. | PASSED | | | | Accepted |
| | Contact Resistance | 30 mΩ Max. | 15.10 | 12.50 | 13.638 | 0.950 | Accepted |
| | Examination of product. | Meets product drawing. | PASSED | | | | Accepted |
| D | Insulation Resistance | 1000 MΩ minimum. | PASSED | | | | Accepted |
| | Dielectric Withstanding Voltage | No breakdown or flashover. | PASSED | | | | Accepted |
| | Thermal Shock | No Damage | PASSED | | | | Accepted |
| | Humidity | No Damage | PASSED | | | | Accepted |
| | Insulation Resistance | 1000 MΩ minimum. | PASSED | | | | Accepted |
| | Dielectric Withstanding Voltage | No breakdown or flashover. | PASSED | | | | Accepted |
| | Examination of product. | Meets product drawing. | PASSED | | | | Accepted |
| E | Resistance to Wave Soldering Heat | No Damage | PASSED | | | | Accepted |
| | Examination of product. | Meets requirements of product drawing. | PASSED | | | | Accepted |
| F | Solderability | 95% solder coverage min. | PASSED | | | | Accepted |
| | Examination of product. | Meets product drawing. | PASSED | | | | Accepted |
| G | Resistance to Reflow Soldering Heat | No Damage | PASSED | | | | Accepted |
| | Examination of product. | Meets product drawing. | PASSED | | | | Accepted |

Figure 2 (end)




Temperature Profile of Reflow Soldering
Figure 3