



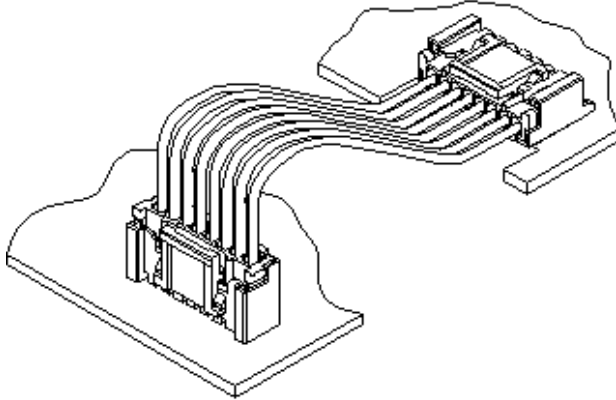
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TITLE : 2.0 PITCH W/B CONN. (P-LOCK)

1.0 적용범위 (SCOPE)

이 사양서는 2.0 mm pitch connector(Positive Lock) LEAD FREE series에 대하여 규정한다.
This Product Specification covers the 2.0 mm pitch connector(Positive Lock) LEAD FREE series.



2.0 제품사양 (PRODUCT DESCRIPTION)

2.1 제품명 및 제품번호 (PRODUCT NAME AND SERIES NUMBERS)

| 제품명 (PRODUCT NAME) | 제품번호 (PART NUMBER) |
|--------------------|--|
| HOUSING | 35507-**0* |
| WAFER ASSY – ST | 35362-**0*, -**5*, -**6*, -**7*, -**8* 104065-1670, 104065-1676 |
| WAFER ASSY – RA | 35363-**6* |
| TERMINAL | 50212-8000 |

2.2 SAFETY AGENCY APPROVALS

UL / CSA 인증 (UL/CSA APPROVALS)

3.0 RATINGS

| 항 목 (ITEM)) | 규 격 (STANDARD) | |
|---|----------------|-------|
| 최대허용전압 [RATED VOLTAGE (MAX.)] | 125V | |
| 최대허용전류 및 사용 전선 [RATED CURRENT (MAX.) AND APPLICABLE WIRES | AWG #24 | 2.0 A |
| | AWG #26 | 1.5 A |
| | AWG #28 | 1.0 A |
| | AWG #30 | 0.5 A |
| 사용온도범위 (AMBIENT TEMP. RANGE) | -40°C ~ 105°C | |
| 저장온도범위(Non-operating Temperature) | -20°C ~ 60°C | |

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|---|---|---|--------------------------------|
| REVISION: B2 | ECR/ECN INFORMATION: EC No: KOR2013-0018 DATE: 2012/ 08/ 16 | TITLE: 2.0 W/B CONN. (Positive Lock) (2-20P, 6Kinds of color version) | SHEET No. 1 of 6 |
| DOCUMENT NUMBER: PS-35507-003 | CREATED / REVISED BY: HJEONG/SKCHO | CHECKED BY: SHCHU | APPROVED BY: YSOOKIM |

4.0 성능 (PERFORMANCE)

4.1 전기적 성능 (ELECTRICAL REQUIREMENTS)

| ITEM | DESCRIPTION | TEST CONDITION | REQUIREMENT |
|-------|---|---|--------------|
| 4.1.1 | 접촉저항 Contact Resistance | 결합된 Connector를 개방전압 20mV이하, 단락전류 10mA에서 측정 | 20 mΩ MAX. |
| | | Mate connectors measure by dry circuit, 20mV Max. 10mA | |
| 4.1.2 | 압착상태의 접촉저항 Contact Resistance of Wire Termination | Wire를 사용하여 터미널을 압착한 상태에서 개방전압 20mV이하, 단락전류 10mA에서 측정한다. | 5 mΩ MAX. |
| | | Crimp the applicable connectors at the speed rated of 25±3mm per minute | |
| 4.1.3 | 절연저항 Insulation Resistance | 결합된 Connector를 인접 Terminal사이 및 Terminal과 GND간에 DC500V를 인가하여 측정한다. | 1000 MΩ MIN. |
| | | Mate connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground. | |
| 4.1.4 | 내전압 Dielectric Withstanding Voltage | 결합된 Connector를 인접 Terminal사이 및 Terminal과 GND간에 AC500V를 1분간 인가한다. | No breakdown |
| | | Mate connectors: apply 500VAC for 1 minute between adjacent terminals and between terminals to ground. | |
| 4.1.5 | 온도상승 Temperature Rise | 결합된 커넥터의 최대허용전류를 통전하고 커넥터의 온도 상승 분을 측정한다. | 30°C MAXIMUM |
| | | Mate connectors: measure the temperature rise at the rated current | |

4.2 기계적 성능 (MECHANICAL REQUIREMENTS)

| ITEM | DESCRIPTION | TEST CONDITION | REQUIREMENT |
|-------|--|--|-----------------------------------|
| 4.2.1 | 커넥터삽입력 및 발거력 Connector Mate and Unmate Forces | Connector를 25 ± 3 mm/분의 속도로 삽, 발거를 실시한다 | 제 6항 참조 (REFER TO PARAGRAPH 6) |
| | | Mate and unmate connector at a rate of 25 ± 3 mm per minute. | |

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4.2 MECHANICAL REQUIREMENTS (continued)

| | | | | |
|-------|---|--|--------------------|---------------|
| 4.2.2 | 전선 압착강도 Crimping Pullout Forces | 압착된 터미널을 매분 25±3mm의 속도로 WIRE를 축방향으로 당긴다. | AWG#24 | 3.0Kgf/MIN |
| | | | AWG#26 | 2.0Kgf/MIN. |
| | | Fix the crimped terminal, apply axial pullout force on the wire at a rate of 25 ± 3 mm per minute. | AWG#28 | 1.0Kgf/MIN. |
| | | | AWG#30 | 0.5Kgf/MIN. |
| 4.2.3 | 단자 삽입력 Terminal Insertion Force (into Housing) | 하우징에 압착된 단자를 25 ± 6 mm/분의 속도로 삽입한다. | 1.0 kgf MAXIMUM | |
| | | Apply an axial insertion force on the terminal at a rate of 25 ± 3 mm per minute | | |
| 4.2.4 | 단자 유지력 Terminal Retention Force (in Housing) | 하우징과 단자를 조립한 상태에서 매분 25±3mm의 속도로 축 방향으로 당긴다. | 1.5 kgf MINIMUM | |
| | | Apply axial pullout force on the terminal in the housing at a rate of 25 ± 3 mm per minute. | | |
| 4.2.5 | PIN 유지력 Pin Retention Force | 하우징과 터미널을 조립한 상태에서 매분 25±3mm의 속도로 축 방향으로 당긴다. | 1.0 kgf MINIMUM | |
| | | Apply an axial push force on the pin at a rate of 25 ± 3 mm per minute | | |
| 4.2.6 | Connector 결합력 Locking Strength | 단자간 결합이 제외된 결합된 커넥터를 매분 25±3mm의 속도로 축방향으로 당긴다. | 2~3ckts | 2 kgf MINIMUM |
| | | Mated connector (Only mold part), apply axial pullout force at the speed rate of 25±3mm per minute | 4~20ckts | 3 kgf MINIMUM |
| 4.2.7 | 내구성 Durability | 커넥터를 최대 10회/1분의 속도로 삽,발거를 30회 실시한다. | 접촉저항 | 40 mΩ MAX. |
| | | Mate connectors up to 30 cycles at a maximum rate of 10 cycles per minute. | Contact Resistance | |

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4.2 MECHANICAL REQUIREMENTS (continued)

| ITEM | DESCRIPTION | TEST CONDITION | REQUIREMENT | |
|-------|--|--|-------------|------------|
| 4.2.8 | 내진동성 VIBRATION | 커넥터를 결합하여 아래 진동상태를 가한다. 진 폭 : 1.5mm P-P 진동수 : 10-55-10 Hz/분 진동시간 : X.Y.Z축 각 2시간 | 외관 | 이상 없을 것 |
| | | | 접촉저항 | 40 mΩ MAX. |
| | | | 순간단락 | 1 μs MAX. |
| | Mate connectors and subject to the following vibration conditions: Amplitude : 1.5mm P-P Sweep Time : 10-55-10 Hz in 1 minute Duration : 2 Hours in each X.Y.Z axes | Appearance | No Damage | |
| | | Contact Resistance | 40 mΩ MAX. | |
| | | Discontinuity | 1 μs MAX. | |
| 4.2.9 | 내충격성 SHOCK | 커넥터를 결합하여 반정현파 50G (490ms)의 충격을 ±X,±Y,±Z축 방향에 3회 가한다.(총 18회) | 외관 | 이상 없을 것 |
| | | | 접촉저항 | 40 mΩ MAX. |
| | | | 순간단락 | 1 μs MAX. |
| | Mate connectors and shock at 50 g's with ½ sine wave (11 milliseconds) shocks in the ±X,±Y,±Z axes (18 shocks total). | Appearance | No Damage | |
| | | Contact Resistance | 40 mΩ MAX. | |
| | | Discontinuity | 1 μs MAX. | |

4.3 환경적 특성(ENVIRONMENTAL REQUIREMENTS)

| ITEM | DESCRIPTION | TEST CONDITION | REQUIREMENT | |
|-------|---|--|-------------|------------|
| 4.3.1 | 내열성 Heat Resistance | 커넥터를 결합하여 주위온도 105 ± 2°C에서 96시간 방치 후 꺼내어 측정한다. | 외관 | No Damage. |
| | | | 접촉저항변화 | 40mΩ MAX |
| | Mate connectors; expose to: 96 hours at 105 ± 2°C | Appearance | No Damage | |
| | | Contact Resistance | 40mΩ MAX | |
| 4.3.2 | 내한성 Cold Resistance | 주위온도 -40 ± 3°C에서 96시간 방치 후 꺼내어 측정한다. | 외관 | No Damage. |
| | | | 접촉저항변화 | 40mΩ MAX |
| | Mate connectors: Duration: 96 hours; Temperature: -40 ± 3°C | Appearance | No Damage | |
| | | Contact Resistance | 40mΩ MAX | |

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|---|---|---|--------------------------------|
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4.3 ENVIRONMENTAL REQUIREMENTS (continued)

| ITEM | DESCRIPTION | TEST CONDITION | REQUIREMENT | |
|-------|---|--|--------------------|-----------|
| 4.3.3 | 열충격 Thermal Shock | 커넥터를 결합하고, 아래의 방법으로 5Cycle 적용 온도 °C 시간 (분) -40 +0/-3 30 +25 ±10 5 MAXIMUM +105 +3/-0 30 +25 ±10 5 MAXIMUM | 외관 | 이상없을것 |
| | | | 접촉저항 | 40mΩ MAX |
| | | Mate connectors; expose to 5 cycles of: Temperature °C Duration (Minutes) -40 +0/-3 30 +25 ±10 5 MAXIMUM +105 +3/-0 30 +25 ±10 5 MAXIMUM | Appearance | No Damage |
| | | | Contact Resistance | 40mΩ MAX |
| 4.3.4 | 내습성 Humidity (Steady State) | 커넥터를 결합하여 상대습도 90-95% , 온도 60 ± 2°C 상태에서 96 시간 방치한다. 측정 전 수분을 제거하고 대기 에서 1시간 건조한다 | 외관 | 이상없을것 |
| | | | 접촉저항 | 40mΩ MAX |
| | | | 내전압 | 4.1.4항 만족 |
| | | | 절연저항 | 100MΩ MAX |
| | | Mate connectors: expose to a temperature of 60 ± 2°C with a relative humidity of 90-95% for 96 hours. Note: Remove surface moisture and air dry for 1 hour prior to measurements. | Appearance | No Damage |
| | | | Contact Resistance | 40mΩ MAX |
| 4.3.5 | 염수분무 Salt Spray | 결합된 커넥터를 35 ± 2°C에서 5 ± 1% 중량비의 염수를 48시간 분무하고 시험 후 상온에서 물로 씻은후 실온에서 건조시킨다. | 외관 | 이상없을것 |
| | | | 접촉저항 | 40mΩ MAX |
| | | 48hours exposure to a salt spray from 5 ± 1% solution at 35 ± 2°C | Appearance | No Damage |
| | | | Contact Resistance | 40mΩ MAX |
| 4.3.6 | 아황산가스 Corrosive Atmosphere: Sulfur Dioxide Gas (SO₂) | 결합된 커넥터를 40 ± 2°C의 온도에서 50 ± 2 ppm의 아황산가스에 24시간 방치한다. | 외관 | 이상없을것 |
| | | | 접촉저항 | 40mΩ MAX |
| | | Mate connectors: Duration: 24 hours exposure; Atmosphere: 50 parts per million (ppm) SO ₂ gas; Temperature: 40 ± 2°C | Appearance | No Damage |
| | | | Contact Resistance | 40mΩ MAX |

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4.3 ENVIRONMENTAL REQUIREMENTS (continued)

| ITEM | DESCRIPTION | TEST CONDITION | REQUIREMENT |
|-------|-------------------|---|---|
| 4.3.7 | 납땀성 | 납땀시간 : 3 ± 0.5 sec 납땀온도 : 245 ± 5 °C | 침적면적 95%이상 |
| | Solder ability | Soldering time : 3 ± 0.5 sec Solder temperature : 245 ± 5 °C | Solder coverage: 95% MIN. (Must be no voids, pin holes) |
| 4.3.8 | 납땀내열성 | 납땀시간 : 5 ± 0.5 sec 납땀온도 : 260 ± 5 °C | 이상없을것 |
| | Solder Resistance | Dip connector terminal tails in solder: Solder Duration: 5 ± 0.5 seconds; Solder Temperature: 260 ± 5°C | Visual: No Damage to insulator material |

5.0 외관, 형상, 치수 및 재질 (PRODUCT SHAPE, DIMENSION & MATERIAL)

→ 도면참조 (Refer to the drawing)

6.0 삽입력 및 발거력 (INSERTION / WITHDRAWAL FORCE)

| 극 수 (Ckt size) | 삽입력[최대] INSERTION[MAX.] | | | 발거력[최소] WITHDRAWAL[MIN.] | | |
|-------------------|-------------------------|-------------|---------------|--------------------------|-------------|---------------|
| | 1회 (INITIAL) | 6회 (6th) | 30회 (30th) | 1회 (INITIAL) | 6회 (6th) | 30회 (30th) |
| 2 | 3.6 | 3.4 | 3.4 | 0.1 | 0.07 | 0.07 |
| 3 | 4.4 | 4.1 | 4.1 | 0.1 | 0.07 | 0.07 |
| 4 | 5.2 | 4.8 | 4.8 | 0.1 | 0.07 | 0.07 |
| 5 | 6.0 | 5.5 | 5.5 | 0.25 | 0.15 | 0.15 |
| 6 | 6.6 | 6.0 | 6.0 | 0.25 | 0.15 | 0.15 |
| 7 | 7.2 | 6.5 | 6.5 | 0.25 | 0.15 | 0.15 |
| 8 | 7.8 | 7.0 | 7.0 | 0.25 | 0.15 | 0.15 |
| 9 | 8.4 | 7.5 | 7.5 | 0.45 | 0.30 | 0.30 |
| 10 | 9.0 | 8.0 | 8.0 | 0.45 | 0.30 | 0.30 |
| 11 | 9.6 | 8.5 | 8.5 | 0.45 | 0.30 | 0.30 |
| 12 | 10.2 | 9.0 | 9.0 | 0.45 | 0.30 | 0.30 |
| 13 | 10.8 | 9.5 | 9.5 | 0.65 | 0.45 | 0.45 |
| 14 | 11.4 | 10.0 | 10.0 | 0.65 | 0.45 | 0.45 |
| 15 | 12.0 | 10.5 | 10.5 | 0.65 | 0.45 | 0.45 |
| 16 | 12.6 | 11.0 | 11.0 | 0.65 | 0.45 | 0.45 |
| 17 | 13.2 | 11.5 | 11.5 | 0.85 | 0.60 | 0.60 |
| 18 | 13.8 | 12.0 | 12.0 | 0.85 | 0.60 | 0.60 |
| 19 | 14.4 | 12.5 | 12.5 | 0.85 | 0.60 | 0.60 |
| 20 | 15.0 | 13.0 | 13.0 | 0.85 | 0.60 | 0.60 |

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