

molex[®] PRODUCT SPECIFICATION

1.25mm WIRE TO BOARD CONNECTOR 4P, 6P

1. SCOPE (적용범위)

This Product Specification covers the 1.25mm Pitch Wire to Board Connector 4P, 6P.
(이 Spec은 1.25mm Wire to Board Connector 4P, 6P 에 대하여 규정한다)

2. PRODUCT DESCRIPTION (제품구성)

2.1 PRODUCT NAME AND SERIES NUMBER (제품명 & 제품번호)

| CKT Size (극수) | Product Name (제품명칭) | Parts Number (제품번호) |
|---------------------------|---|---------------------|
| 4P | Header Assembly -4P (Embossed Tape Packing) | 104086-0420 |
| | Housing -4P | 104085-0400/0430 |
| 6P | Header Assembly -6P (Embossed Tape Packing) | 104078-0620 |
| | Housing -6P | 104077-0600/0630 |
| Crimp Receptacle Terminal | | 104505-8003 |

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS(치수, 재질, 도금 및 마킹)

See the appropriate Sales Drawings for information on dimensions, materials, platings, and markings. (관련도면 참조)

3. APPLICABLE DOCUMENTS AND SPECIFICATIONS

Sales drawing : SD-104086-005, SD-104086-006, SD-104085-001, SD-104085-005
SD-104505-001 SD-104078-003, SD-104078-004, SD-104077-001, SD-104077-003
Crimping specification : CS-104505-001
Packing specification : PK-104086-001, PK-104085-001 , PK-104505-001
PK-104078-001, PK-104077-001

4. RATINGS (정격)

| ITEM (항목) | STANDARD (규격) | |
|---|---|------|
| Rated Voltage (Max.) 최대허용전압 | 200V | |
| Rated Current (Max.) and Applicable wires 최대허용전류 및 사용전선 | AWG#28 | 1.0A |
| | [AC(rms 실효치)/DC] Outside Insulation Dia. 절연피복외경 : Φ 0.97 mm Max. | |
| Ambient Temp. Range (Operating and Non-operating) 사용온도 범위 | -25°C ~ + 130°C Include Terminal Temperature Rise 통전에 의한 온도상승 포함. | |

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| REVISION: A1 | ECR/ECN INFORMATION: EC No: KOR2014-0077 DATE: 2013/10/24 | TITLE: 1.25mm Pitch Wire to Board Connector 4P, 6P | SHEET No. 1 of 6 |
| DOCUMENT NUMBER: PS-104086-004 | CREATED / REVISED BY: JS.SHIN | CHECKED BY: SH.CHU | APPROVED BY: YSOO.KIM |

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5. PERFORMANCE(성능)

5-1. ELECTRICAL REQUIREMENTS(전기적 특성)

| ITEM 항 목 | TEST CONDITION 시 험 조 건 | REQUIREMENT 규 격 |
|--|--|--|
| 1 Contact Resistance 접촉저항 | Mate Connectors: apply a maximum voltage of 20 mV and a current of 100mA . Wire resistance shall be removed from the measured value. 커넥터를 결합하여, 20mV 이하의 전압, 100mA 이하의 전류를 인가한다. 저항 측정 값에서 전선 저항치는 제외한다 | 20 milliohms MAXIMUM |
| 2 Contact Resistance of Wire Termination 압착부 접촉저항 | Terminate the applicable wire to the terminal and measure wire using a voltage of 20 mV and a current of 100 mA . 적용전선을 단자에 압착한 상태에서, 전압 20mV , 전류 100mA 를 인가하여 압착부 저항을 측정한다. | 5 milliohms MAXIMUM |
| 3 Insulation Resistance 절연저항 | Mate connectors: apply a voltage of 500 VDC between adjacent terminals and between terminals to ground. 커넥터를 결합하여, 인접단자 간 그리고 단자와 그라운드간에 DC500V 를 인가한다 | 1,000 Megohms MINIMUM |
| 4 Dielectric Withstanding Voltage 내전압 | Mate Connectors: apply a voltage of 900 VAC for 1 minute between adjacent terminals and between terminals to ground. 커넥터를 결합하여, 인접단자 간 그리고 단자와 그라운드간에 AC900V 를 1분간 인가한다. | No breakdown 이상 없을 것 current leakage < 5 mA 누설전류 < 5 mA |
| 5 Temperature Rise 온도상승 | Mate connectors: measure the temperature rise at the rated current. 커넥터를 결합하여, 정격 전류를 인가하여 온도 상승을 측정한다. | +30°C MAXIMUM |

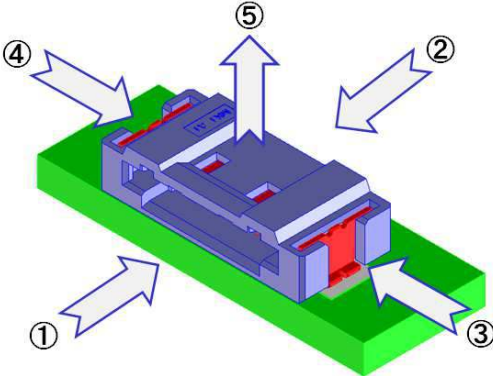
5-2. MECHANICAL REQUIREMENTS(기계적 특성)

| ITEM 항 목 | TEST CONDITION 시 험 조 건 | REQUIREMENT 규 격 |
|---|---|------------------------------------|
| 6 Connector Mate and Unmate Forces 커넥터 삽입력 및 발거력 | Mate and unmate connector at a rate of 25 ± 6 mm per minute. Connector를 25 ± 6 mm/분의 속도로 삽, 발거를 실시한다. | 제 8 항 참조 (Refer to paragraph 8) |

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5-2. MECHANICAL REQUIREMENTS(기계적 특성)

| ITEM 항 목 | TEST CONDITION 시험 조건 | REQUIREMENT 규 격 |
|--|---|------------------------------|
| 7 PCB Retention Force PCB 접합력 | <p>After soldering the connector on PCB , measured the force to pull off the connector till connector solder part break away from PCB. (Testing speed : 25 ± 6mm/min) ▶ Refer to below [Fig]</p>  <p>PCB에 납땜 된, Connector 에 25 ± 6mm/분의 속도로, 그림 방향으로 힘을 가해 PCB와 connector의 납땜 부위가 파손 될 때의 힘을 측정한다</p> | 3.0 kg.f MINIMUM |
| 8 Wire Pullout Force 전선 압착강도 | <p>Apply an axial pullout force on the wire at a rate of 25 ± 6 mm.</p> <p>단자를 압착하여 전선을 25 ± 6 mm/분의 속도로 축 방향으로 당긴다.</p> | AWG#28 : 1.0 kg.f MINIMUM |
| 9 Terminal Insertion Force (into Housing) 단자 삽입력 | <p>Apply an axial insertion force on the terminal at a rate of 25 ± 6 mm</p> <p>하우징에 압착된 단자를 25 ± 6 mm/분의 속도로 삽입한다.</p> | 1.0 kg.f MAXIMUM |
| 10 Terminal Retention Force (in Housing) 단자 유지력 | <p>Axial pullout force on the terminal in the housing at a rate of 25 ± 6 mm per minute.</p> <p>하우징과 단자를 조립한 상태에서 25 ± 6 mm/분의 속도로 축 방향으로 잡아 당긴다.</p> | 0.5 kg.f MINIMUM |
| 11 Locking Strength (Housing) 결합부 해체력 | <p>Mate the connectors and apply the force by pulling axially the housing at a rate of 25 ± 6 mm per minute. Strength is determined when locking device disengaged locking, or is broken by the load.</p> <p>커넥터를 조립하고, 하우징을 25 ± 6 mm/분의 잡아당겨 결합장치가 파손되는 힘을 측정 한다.</p> | 1.5 kg.f MINIMUM |

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5-2. MECHANICAL REQUIREMENTS(기계적 특성)

| ITEM 항 목 | TEST CONDITION 시험 조건 | REQUIREMENT 규 격 |
|--|--|--|
| 12 Durability 내구성 | Mate connectors up to 30 cycles at a maximum rate of 10 cycles per minute. 커넥터를 최대 10 회/1분의 속도로 삽, 발거를 30 회 실시한다. | 20 milliohms MAXIMUM |
| 13 Vibration 내진동성 | 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 커넥터를 결합하여 아래 진동상태를 가한다. 진폭 : 1.5mm P-P 진동수 : 10-55-10 Hz/분 진동시간 : X.Y.Z축 각 2 시간 | No Damage 이상 없을 것 Contact Resistance (접촉저항) 20 milliohms MAXIMUM Discontinuity(순간단락) < 1 microsecond |
| 14 Shock (Mechanical) 내충격성 | Mate connectors and shock at 50 g's with ½ sine wave (11 milliseconds) shocks in the ±X,±Y,±Z axes (18 shocks total). 커넥터를 결합하여 반정현파 50G (490ms²) 의 충격을 ±X,±Y,±Z축 방향에 3 회 가한다.(총 18 회) | No Damage 이상 없을 것 Contact Resistance (접촉저항) 20 milliohms MAXIMUM Discontinuity(순간단락) < 1 microsecon |

5-3. ENVIRONMENTAL REQUIREMENTS(환경적 특성)

| ITEM 항 목 | TEST CONDITION 시험 조건 | REQUIREMENT 규 격 |
|-------------------------------------|---|---|
| 15 Thermal Aging 내열성 | Mate connectors; expose to: 96 hours at 105 ± 2°C 커넥터를 결합하여 주위온도 105 ± 2°C에서 96시간 방치 후 꺼내어 측정한다. | No Damage 이상 없을 것 Contact Resistance (접촉저항) 20 milliohms MAXIMUM |
| 16 Cold Resistance 내한성 | Mate connectors: Duration: 96 hours; Temperature: -40 ± 3°C 주위온도 -40 ± 3°C에서 96시간 방치 후 꺼내어 측정한다. | No Damage 이상 없을 것 Contact Resistance (접촉저항) 20 milliohms MAXIMUM |

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5-4. ENVIRONMENTAL REQUIREMENTS(환경적 특성)

| ITEM 항 목 | TEST CONDITION 시험 조건 | REQUIREMENT 규 격 | | | | | | | | | | |
|-----------------------------|---|--|------------------------------------|------------------|-----------|----------------|------------------|-------------------|-----------|----------------|------------------|---|
| 17 | <p>Humidity (Steady State) 내 습 성</p> <p>Mate connectors: expose to a temperature of 60 ± 2°C with a relative humidity of 90-95% for 96 hours.</p> <p>Note: Remove surface moisture and air dry for 1 hour prior to measurements.</p> <p>커넥터를 결합하여 상대습도 90-95%, 온도 60 ± 2°C 상태에서 96 시간 방치한다. 측정 전 수분을 제거하고 대기 에서 1시간 건조한다</p> | <p>No Damage 이상 없을 것</p> <p>Contact Resistance (접촉저항): 40 milliohms MAXIMUM</p> <p>Insulation Resistance (절연저항): 100 Megohms MINIMUM</p> <p>Dielectric Withstanding Voltage (내전압): No breakdown at 900 VAC</p> | | | | | | | | | | |
| 18 | <p>Shock (Thermal) 열 충격</p> <p>Mate connectors; expose to 5 cycles of: 커넥터를 결합하여 아래 상태에서 5회 방치.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Temperature °C</u> 온도</th> <th style="text-align: left;"><u>Duration (Minutes)</u> 시간(분)</th> </tr> </thead> <tbody> <tr> <td>-40 +0/-3</td> <td>30</td> </tr> <tr> <td>+25 ±10</td> <td>5 MAXIMUM</td> </tr> <tr> <td>+105 +3/-0</td> <td>30</td> </tr> <tr> <td>+25 ±10</td> <td>5 MAXIMUM</td> </tr> </tbody> </table> | <u>Temperature °C</u> 온도 | <u>Duration (Minutes)</u> 시간(분) | -40 +0/-3 | 30 | +25 ±10 | 5 MAXIMUM | +105 +3/-0 | 30 | +25 ±10 | 5 MAXIMUM | <p>No Damage 이상 없을 것</p> <p>Contact Resistance (접촉저항) 20 milliohms MAXIMUM</p> |
| <u>Temperature °C</u> 온도 | <u>Duration (Minutes)</u> 시간(분) | | | | | | | | | | | |
| -40 +0/-3 | 30 | | | | | | | | | | | |
| +25 ±10 | 5 MAXIMUM | | | | | | | | | | | |
| +105 +3/-0 | 30 | | | | | | | | | | | |
| +25 ±10 | 5 MAXIMUM | | | | | | | | | | | |
| 19 | <p>Salt Spray 염수분무</p> <p>Mate connectors: Duration: 48 hours exposure; Atmosphere: salt spray from a 5% solution; Temperature: 35 +1/-2°C</p> <p>주위온도 : 35 +1/-2°C 에서 5% 중량비의 염수를 48시간 분무하고 시험후 상온에서 물로 씻은후 실온에서 건조시킨다.</p> | <p>No Damage 이상 없을 것</p> <p>Contact Resistance (접촉저항) 20 milliohms MAXIMUM</p> | | | | | | | | | | |
| 20 | <p>Solderability 납땀성</p> <p>SOLDER(Sn3Ag0.5Cu) Solder Duration : 3 ± 0.5 seconds Solder Temperature : 245 ± 5°C</p> <p>SOLDER(Sn3Ah0.5Cu) 납땀시간 : 3 ± 0.5 seconds 납땀온도: 245 ± 5°C</p> | <p>Solder coverage: 90% MINIMUM</p> <p>90% MINIMUM 침적</p> | | | | | | | | | | |
| 21 | <p>Solder Resistance 납땀내열성</p> <p>Reflow Soldering Method (See para.7) Solder Duration: 3 ± 0.5 seconds; Solder Temperature: 260 ± 5°C</p> <p>Reflow Soldering 방식 (제 5항 참조) 납땀시간 : 3 ± 0.5 seconds 납땀온도: 260 ± 5°C</p> | <p>Visual: No Damage to insulator material</p> <p>외관 변형 없을 것</p> | | | | | | | | | | |

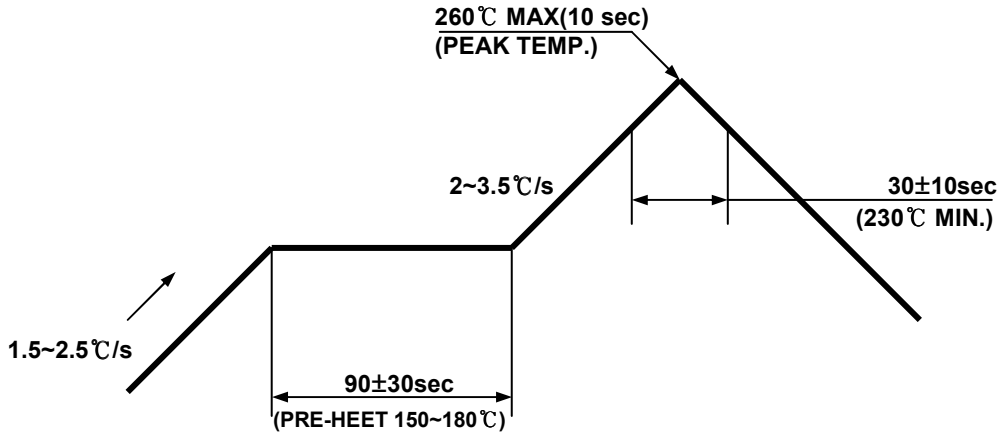
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| REVISION: | ECR/ECN INFORMATION: | TITLE: | SHEET No. |
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| PS-104086-004 | JS.SHIN | SH.CHU | YSOO.KIM |

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6. PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage.
See Packaging drawing PK-104086-001 for more information.

7. REFLOW CONDITION (REFLOW 조건)



Temperature Condition Graph(온도조건 그래프)

(Temperature on board pattern side)

Reflow possibility : 2 times

(Reflow 횟수 : 2회 이하 가능)

Note : Please check the reflow soldering condition by your own devices beforehand.

Because the condition changes by the soldering devices, P.C.Board, and so on.

(본 Reflow조건은 Reflow 장치 및 기판 조건 등에 의해서 다를 수가 있으므로,
사전에 Reflow조건을 확인하여 주십시오)

8. 삽입력 및 발거력(INsertion/WITHDRAWAL FORCE)

| 극 수 (CKT Size) | Unit | 삽입력(최대) {INSERTION(MAX.)} | | | 발거력(최소) {WITHDRAWAL(MIN.)} | | |
|-------------------|------------|---------------------------|---------------|----------------|----------------------------|----------------|----------------|
| | | 1 회 (Initial) | 6 회 (6th) | 30 회 (30th) | 1 회 (Initial) | 6 회 (6th) | 30 회 (30th) |
| 4 | N {kgf} | 19.6 {2.0} | 19.6 {2.0} | 19.6 {2.0} | 0.78 {0.08} | 0.78 {0.08} | 0.78 {0.08} |
| 6 | N {kgf} | 24.5 {2.5} | 24.5 {2.5} | 24.5 {2.5} | 1.18 {0.12} | 1.18 {0.12} | 1.18 {0.12} |
| | | | | | | | |

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