molex PRODUCT SPECIFICATION

LITE TRAP CONTACT TERMINAL

1. SCOPE (적용범위)

This Product Specification covers the Lite Trap Contact Terminal
(이 Spec은 Lite Trap Contact Terminal 에 대하여 규정한다)

2. PRODUCT DESCRIPTION (제품구성)

2.1 PRODUCT NAME AND SERIES NUMBER (제품명 & 제품번호)

Product Name (제품명칭)	Parts Number (제품번호)
Lite Trap Contact Terminal (Embossed Packing)	203863-8103

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

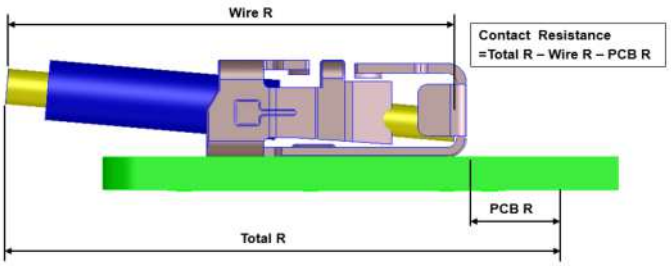
Sales drawing : 2038638103 (PSD)
Packing specification : PK-203863-001(2038638103 PS 001)

4. RATINGS (정격)

<table>
<tr><th colspan="3">ITEM (항목)</th><th colspan="3">STANDARD (규격)</th></tr>
<tr><td colspan="2">Rated Voltage (Max.) 최대허용전압
(According to UL Test Condition)</td><td></td><td colspan="2">300V [AC (rms 실효치)/DC]</td><td rowspan="6">Outside Insulation Dia. 절연피복외경
: Φ 2.1 mm Max.</td></tr>
<tr><td rowspan="6">Rated Current Ampere (Max.)
최대허용전류
(According to UL Test Condition)</td><td rowspan="4">Solid Wire
[refer to 8]
[8항 참조]</td><td>AWG#24(0.2mm²)</td><td>5.0A Max.</td></tr>
<tr><td>AWG#22(0.3mm²)</td><td>5.0A Max.</td></tr>
<tr><td>AWG#20(0.5mm²)</td><td>6.0A Max.</td></tr>
<tr><td>AWG#18(0.8mm²)</td><td>7.0A Max.</td></tr>
<tr><td rowspan="2">Strand Wire
[refer to 8]
[8항참조]</td><td>AWG#22(0.45mm²)</td><td>5.0A Max</td></tr>
<tr><td>AWG#20(0.7mm²)</td><td>6.0A Max.</td></tr>
<tr><td colspan="3">Ambient Temp. Range
(Operating and Non-operating)
사용온도 범위</td><td colspan="3">-60°C ~ + 130°C
Include Terminal Temperature Rise
통전에 의한 온도상승 포함.</td></tr>
</table>

5. PERFORMANCE(성능)

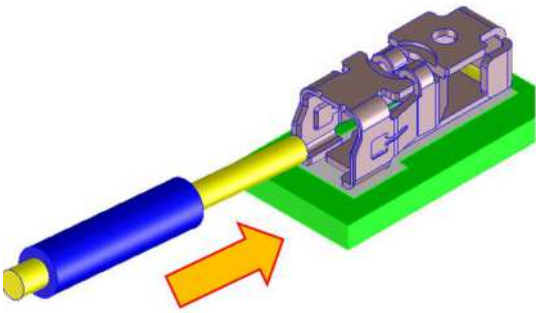
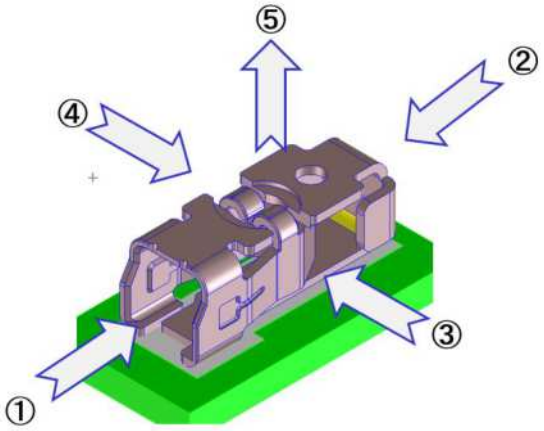
5-1. ELECTRICAL REQUIREMENTS(전기적 특성)

ITEM 항 목		TEST CONDITION 시 험 조 건	REQUIREMENT 규 격
1	**Contact Resistance** 접촉 저항	Mate Connector & Wire : apply a maximum voltage of 2**0** mV and a current of **100**mA. Wire and PCB resistance shall be removed from the measured value.  커넥터에 Wire를 결합하여, **20**mV이하의 전압, **100**mA이하의 전류를 인가한다. 저항 측정 값에서 전선 저항치는 제외한다	**10** milliohms MAXIMUM
2	**Temperature Rise** 온도 상 승	Mate connector & Wire : measure the temperature rise at the rated current. (by UL Test Condition) 커넥터에 Wire를 결합하여, 정격 전류를 인가하여 온도 상승을 측정한다. (UL Test 조건)	**+40**°C MAXIMUM

5-2 SOLDER REQUIREMENTS(납땜 특성)

ITEM 항 목		TEST CONDITION 시 험 조 건	REQUIREMENT 규 격
3	**Solderability** 납 땜 성	SOLDER(Sn3Ag0.5Cu) Solder Duration : 5 **± 0.5** seconds Solder Temperature : **260 ± 5**°C SOLDER(Sn3Ah0.5Cu) 납땜시간 : **5 ± 0.5** seconds 납땜온도: **260 ± 5**°C (EIA 638, JESD22-B102D)	Solder coverage: **95**% MINIMUM **95**% MINIMUM 침적
4	**Solder Resistance** 납 땜 내 열 성	Reflow Soldering Method (See para.7) Solder Duration: **3 ± 0.5** seconds; Solder Temperature: **260 ± 5**°C Reflow Soldering 방식 (제 7항 참조) 납땜시간 : **3 ± 0.5** seconds 납땜온도: **260 ± 5**°C	Visual: No Damage to insulator material 외관 변형 없을 것

5-3. MECHANICAL REQUIREMENTS(기계적 특성)

ITEM 항 목		TEST CONDITION 시 험 조 건	REQUIREMENT 규 격
5	**Wire Insertion /Retention Forces Wire 삽입력 및 발거력**	Insert Wire into the Connector and withdraw the wire from it at a rate of **25 ± 6** mm per minute. [When wire insertion condition : refer to 10]  Connector에 Wire를 각각 25 ± 6 mm/분의 속도로 삽/,발거를 실시한다.[와이어 삽입 조건 10항 참조]	Initial (초기) Wire Insertion force (Wire삽입력) :18.0 N MAX. Wire Retention force (Wire 인발력) - AWG#24 : 20N Min. - AWG#22~AWG#18 30N MIN. .
6	**PCB Retention Force PCB 접합력**	After soldering the connector on PCB, measured the force to pull connector till connector solder part break away from PCB (Testing speed : **25 ± 6** mm per minute)  PCB에 커넥터를 솔더링 한 후, **25 ± 6** mm /분의 속도로 그림방향으로 힘을 가하여 PCB와 거넥터 솔더링부가 파손 될 때의 힘을 측정한다	**For 5's Direction** :①,② Direction : 50 N MINIMUM ③,④,⑤ Direction : 30 N MINIMUM

5-3. MECHANICAL REQUIREMENTS(기계적 특성)

ITEM 항 목		TEST CONDITION 시 험 조 건	REQUIREMENT 규 격
7	**Vibration 내 진 동 성**	Mate connector & Wire and subject to the following vibration conditions: Vibration Frequency : 20 -500Hz , 3.10G Peak Duration : 15 minutes in each X.Y.Z axes 커넥터와 Wire를 결합하여 아래 진동상태를 가한다. 진동수 : 20 -500Hz , 3.10G Peak 진동시간 : X.Y.Z축 각 15분 (EIA 3624-28 Test condition D)	No Damage 이상 없을 것 Contact Resistance (접촉저항) **30** milliohms MAXIMUM Discontinuity(순간단락) < **1** microsecond
8	**Shock (Mechanical) 내 충 격 성**	Mate connector & Wire and shock at **30** G's with ½ sine wave (**11** milliseconds) shocks in the ±X,±Y,±Z axes (**18** shocks total). 커넥터와 Wire를 결합하여 반정현파 **30**G's (**490**㎨)의 충격을 ±X,±Y,±Z축 방향에 **3**회 가한다. (총 **18**회) (EIA 364-27 ,Test Condition H.)	No Damage 이상 없을 것 Contact Resistance (접촉저항) **30** milliohms MAXIMUM Discontinuity(순간단락) < **1** microsecon
9	**Thermal Aging 내 열 성**	Mate connector & Wire : expose to: **648** hours at 130 **± 2**°C 커넥터와 Wire를 결합하여 주위온도 130 ± 2°C에서 648시간 방치 후 꺼내어 측정한다. (EIA 364-17 Method A, Test Condition 4.)	No Damage 이상 없을 것 Contact Resistance (접촉저항) **30** milliohms MAXIMUM
10	**Cold Resistance 내 한 성**	Mate connector & Wire: Duration: **500** hours; Temperature: **-60 ± 3**°C 주위온도 -60 ± 3°C에서 500시간 방치 후 꺼내어 측정한다. (EIA 364-59)	No Damage 이상 없을 것 Contact Resistance (접촉저항) **30** milliohms MAXIMUM

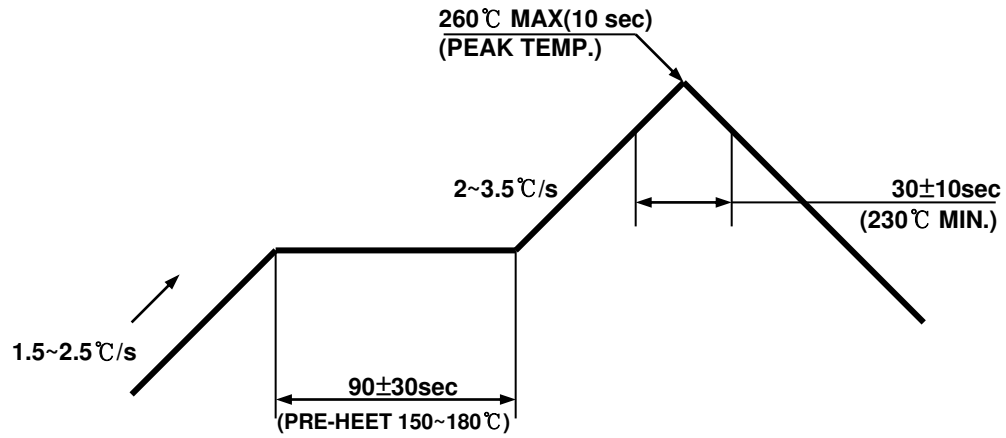
5-4. ENVIRONMENTAL REQUIREMENTS(환경적 특성)

ITEM 항 목		TEST CONDITION 시 험 조 건	REQUIREMENT 규 격
11	**Humidity (Steady State) 내 습 성**	Mate connector & Wire : expose to a temperature of **60 ± 2**°C with a relative humidity of **90-95**% for **500** hours. Note: Remove surface moisture and air dry for **1** hour prior to measurements. 커넥터에 Wire를 결합하여 상대습도 **90-95%** , 온도 **60 ± 2**°C 상태에서 **500** 시간 방치한다. 측정 전 수분을 제거하고 대기 에서 1시간 건조한다 (EIA 364-31)	No Damage 이상 없을 것 Contact Resistance (접촉저항) : **30** milliohms MAXIMUM Insulation Resistance (절연저항) : **100** Mega-ohms MINIMUM Dielectric Withstanding Voltage (내전압) : No breakdown at 1,600 VAC
12	**Temperature Cycling (Thermal) 열 충 격**	Mate connector & Wire : expose to 2**5** cycles of: 커넥터에 Wire를 결합하여 아래 상태에서 25 cycles 방치. Temperature °C 온 도 / Duration (Minutes) 시 간 (분) **-60 +0/-3** / **30** **+130 +3/-0** / **30** (EIA 364-32 Test Condition vii)	No Damage 이상 없을 것 Contact Resistance (접촉저항) **30** milliohms MAXIMUM
13	**Humidity /temperature cycling 온.습도 Cycle**	Mate connector & Wire on PCB : 25~65°C, 80~100%RH, 24hours a cycle, repeat 10 cycles . PCB 상에 Wire가 결합된 Connector를 25에서 65°C 사이의 온도에서 80%에서100% RH를 하루씩 10Cycle을 반복 한다 (EIA 364-31, Method viii)	No Damage 이상 없을 것 Contact Resistance (접촉저항) **30** milliohms MAXIMUM

6 . PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage.
See Packaging drawing PK-203863-001for more information.

7. REFLOW CONDITION (REFLOW 조건)



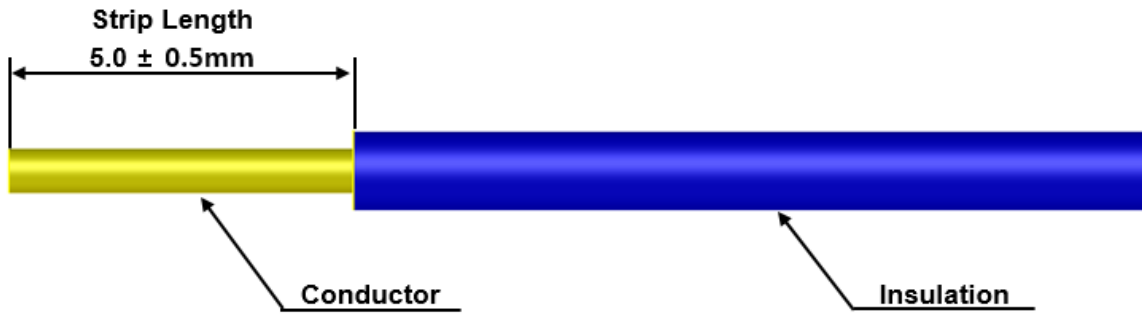
Temperature Condition Graph(온도조건 그래프)
(Temperature on board pattern side)
Reflow possibility : 1 times
(Reflow 횟수 : 1회 이하 가능)

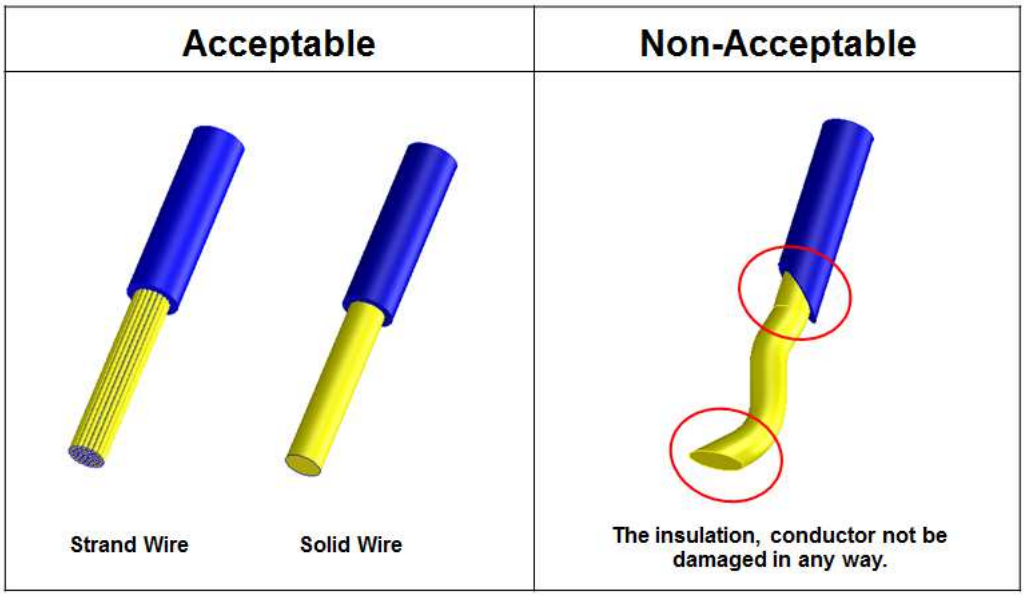
Note : Please check the reflow soldering condition by your own devices beforehand.
Because the condition changes by the soldering devices, P.C.Board, and so on.
(본 Reflow조건은 Reflow 장치 및 기판 조건 등에 의해서 다를 수가 있으므로,
사전에 Reflow조건을 확인하여 주십시오)

8. APPLICABLE WIRES [적용 WIRE]

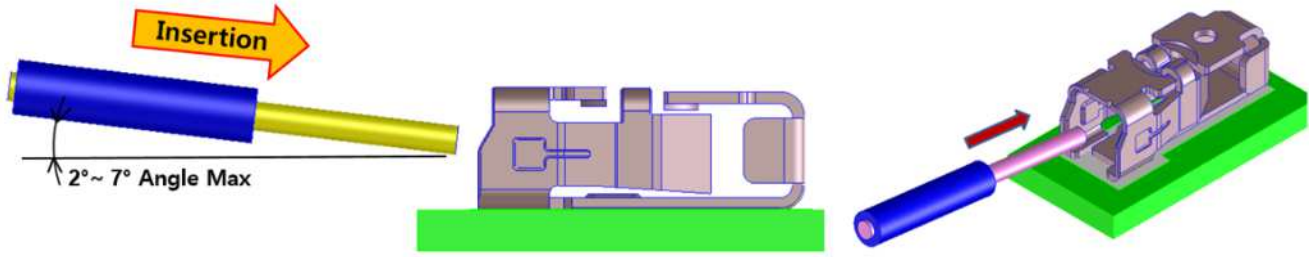
Wire Range AWG No.	Number of Conductors / Diameter of a conductors (Cross-sectional area of conductors / mm²)	Insulation Diameter (mm)	Conductor Type
24	1 / 0.51 (0.2mm²)	1.35	Solid
22	1 / 0.64(0.3mm²)	1.48	
20	1 / 0.81(0.5mm²)	1.65	
18	1 / 1.02(0.8mm²)	1.86	
22	17/0.76 (Reference) After soldering : Ø 0.9mm Max.	1.60	Strand
20	21/0.95 (Reference) After soldering : Ø 1.1mm Max	1.78	

9. WIRE STRIP LENGTH [Wire 탈피 길이]

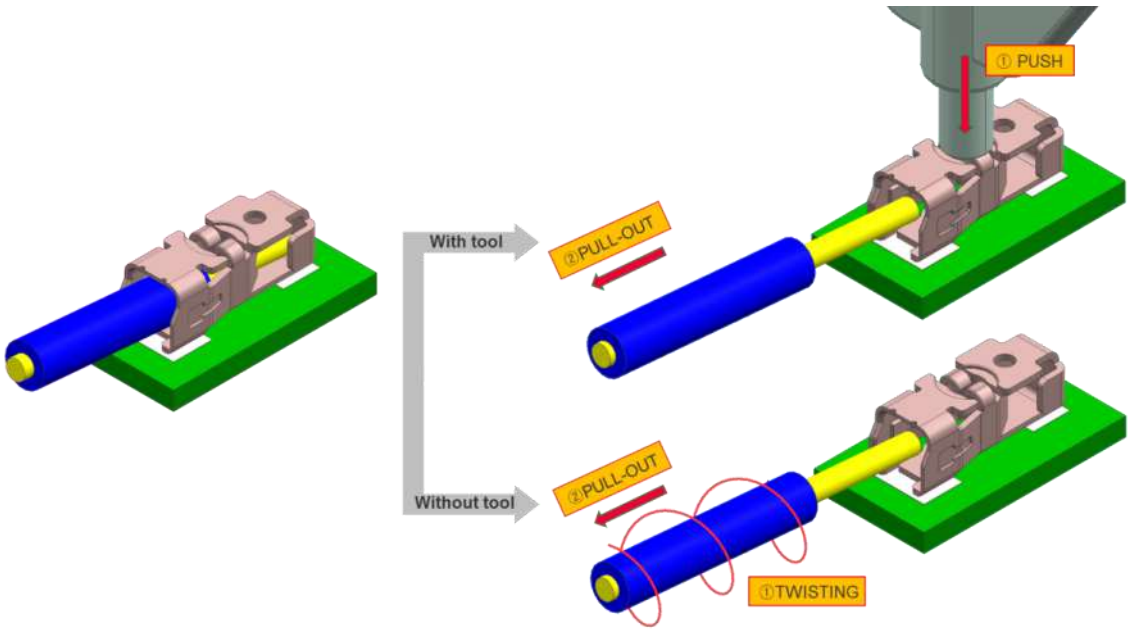




10. WIRE INSERTION [Wire 삽입]



11. The Method of Wire Separation from connected connector [커넥터로부터 Wire 분리 방법]



1) As you see above pictures, When to remove wire from connector, Please press lever of Connector by using open jig tool and pull wire out. If there's no designated jig tool, Turn the wire counter-clockwise and pull it out
[상기 그림 과 같이 Connector에서 Wire를 제거 할 때, Open Jig Tool을 이용하여 Connector의 레버를 누른 후 Wire를 잡아 당긴다. 만약 지정된 Jig Tool이 없을 경우에는 Wire를 반시계 방향으로 돌리면서 Wire를 잡아 당겨 분리한다 .]

2) Pull the wire after push the Lever had better than Pull the wire and push the lever at the same time.
[동시에 Lever 을 누르면서 Wire 를 당기면서 Wire 을 분리 하는 것보다 Lever 을 누른 후 Wire 를 당겨 분리 한다.]

3) The tip for the easy way to separate the wire is that push the wire forward slightly then push the lever.
[Wire 를 쉽게 빼는 방법은 앞으로 Wire 를 살짝 밀고 Push Lever 을 누르면 더 용이 하게 Wire 를 분리]

※ Use the new conductor cutting off the wire if it used more than 2 times [for the wire wearing]
[2 회이상 사용한 Wire 는 절단 후 새로운 심선을 탈피 하여 사용 할 것 [Wire 마모 현상]

※ Do not recommend any smaller wires after using the proper bigger wire range Especially prohibit using a smaller wire instead of AWG#18 wire range after separating
[Wire Range 가 큰 Wire 적용 후 wire range 가 작은 Wire 를 사용 하는 것을 추천 하지 않으며,
특히, AWG#18 wire 사용 후 AWG#18 보다 작은 Wire Range 의 Wire 사용은 금지 한다 .]