# TO

# SPECIFICATION FOR APPROVAL

DESCRIPTION: Pitch 0.60mm IDC Wire To Board Connector,, R/A,SMT ,Header

CUSTOMER PROD.NO/DWG.NO:

E&T PROD.NO: 4250X-XXXN-XXX

APPROBAL SHEET NO:

E&T DWG. NO./DOCUMENT: 4250X-XXXN-XXX

REV: **A1**

**PLEASE RETURN TO US ONE COPY OF"SPECIFICATION FOR APPROVAL"WITH YOUR APPROVED SIGNATURES.**

| APPROVED SIGNATURES | | | |
|---|---|---|---|
| | | | |

The Quality Connection

**ENTERY INDUSTRIAL CO., LTD.**
**E&T ELECTRONICS (DONG GUAN) CO., LTD.**
**E&T ELECTRONICS (SU ZHOU) CO., LTD.**

# ENTERY INDUSTRIAL CO., LTD.

**Title : Pitch 0.60mm IDC Wire To Board Connector,R/A,SMT Type Header**

| | | | |
|---|---|---|---|
| Revised Max Lee | | **Title: Pitch 0.60mm IDC Wire To Board Connector, R/A,SMT Type,Header** | |
| **A1** | **10,18,2011'** | This Document Contains Information That Is Proprietary To E&T And Should Not Be Used Without Written Permission | |
| **Rev** | **Description** | | |
| Document No. 4250X-XXXN-XXX | | Prepared By: Max Lee | Date: 05.13'2010 |
| | | Checked By: | Date: |
| | | Approved By: | Date: |

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## GROUP AND TEST SEQUENCE

| Test of Examination | | Test Group | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | I | J | |
| 1 | Examination of Product | 1,9 | 1,6 | 1,5 | 1,5 | 1,5 | 1,3 | 1,3 | 1,3 | 1,5 | 1,5 | |
| 2 | Contact Resistance | 2,6 | 2,5 | 2,4 | 2,4 | 2,4 | | | | 2,4 | 2,4 | |
| 3 | Insulation Resistance | 3,7 | | | | | | | | | | |
| 4 | Dielectric Strength | 4,8 | | | | | | | | | | |
| 5 | Insertion Force And Withdrawal Force | | 3 | | | | | | | | | |
| 6 | Terminal / Housing Retention Force | | | | | | | | | | | 1 |
| 7 | Durability | | 4 | | | | | | | | | |
| 8 | Vibration | | | 3 | | | | | | | | |
| 9 | Heat Resistance | | | | 3 | | | | | | | |
| 10 | Cold Resistance | | | | | 3 | | | | | | |
| 11 | Humidity | 5 | | | | | | | | | | |
| 12 | Solder Ability | | | | | | 2 | | | | | |
| 13 | Resistance To Soldering Heat | | | | | | | 2 | | | | |
| 14 | Steam Aging | | | | | | | | 2 | | | |
| 15 | Salt Spray | | | | | | | | | 3 | | |
| 16 | Temperature Cycling | | | | | | | | | | 3 | |

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## PRODUCT SPECIFICATION

1. SCOPE :

**This specification covers the 0.6 mm pitch IDC Wire To Board connector Header series.**

## 2. PRODUCT NAME AND PART NUMBER :

| Product Name | E&T Part Number |
|---|---|
| 0.60mm IDC Wire To Board Connector, R/A,SMT Type,Header | 4250X-XXXX-XXX |

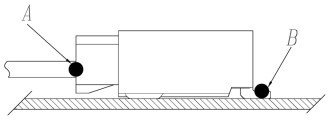
## 3. RATINGS :

| Item | Standard | |
|---|---|---|
| Rated Voltage (MAX.) | 30V | AC/DC |
| Rated Current (M.) | DC 0.2A (Per pin) AWG #34 ;#36 | |
| Ambient Temperature Range | $-40^0$C ~ $+85^0$C | |

*Including temperature rise in applying electrical current

## 4.PERFORMANCE :

### 4- 1 Electrical Performance

| Item | | Test Condition | Requirement | |
|---|---|---|---|---|
| 4-1-1 | Contact Resistance | Test Current: 10mA Max.<br>Test Voltage: 20mV Max.<br>Test Method: EIA-364-23.<br>  | Initial Value | 30 mΩ Max. |
| | | | Final Value | 50 mΩ Max. |
| 4-1-2 | Insulation Resistance | Test Voltage: 100V DC.<br>Test Duration: 1 minutes.<br>Test Method: EIA-364-21. | 100 MΩ Min. | |
| 4-1-3 | Dielectric Strength | Test Voltage: 200V AC.<br>Test Duration: 1 minutes.<br>Test Method: EIA-364-20. | No Breakdown | |

**4-2 Mechanical Performance**

| Item | | Test Condition | Requirement |
|---|---|---|---|
| 4-2-1 | Insertion Force And Withdrawal Force | Test Speed: 25±3 mm/min.<br>Test Method: EIA-364-13. | See 5-1 |
| 4-2-2 | Terminal / Housing Retention Force | Test Speed:25 mm/min. | 0.15Kgf (Min) |

**4-3 Environmental Performance and Others**

| Item | | Test Condition | Requirement | |
|---|---|---|---|---|
| 4-3-1 | Durability | Test Speed: 25±3 mm/min.<br>Test Method: EIA-364-09.<br>The contacts of connector shall be subject to 30 cycles of mating and unmating. | Contact Resistance | |
| | | | Initial Value | ≦ 30 mΩ |
| | | | Final Value | ≦ 50 mΩ |
| 4-3-2 | Vibration | Amplitude: 1.5mm.<br>Frequency range: 10~55~10Hz/minute.<br>Direction: 2 hours in each X.Y.Z axes.<br>Current:100mA.<br>Test Method: EIA-364-28 Condition I. | Appearance | No Damage |
| | | | Contact Resistance | ≦50 mΩ |
| 4-3-3 | Heat Resistance | Temperature: 85±2℃<br>Duration: 96 hours | Appearance | No Damage |
| | | | Contact Resistance | ≦50 mΩ |
| 4-3-4 | Cold Resistance | Temperature: -40±2℃<br>Duration: 96 hours | Appearance | No Damage |
| | | | Contact Resistance | ≦50 mΩ |
| 4-3-5 | Humidity | Temperature: 60±2℃<br>Relative Humidity: 90~95%<br>Duration: 96 hours<br>Test Method: EIA-364-31 | Appearance | No Damage |
| | | | Contact Resistance | ≦50 mΩ |
| | | | Insulation Resistance | ≧100MΩ |
| | | | Dielectric Strength | Must meet 4-1-3 |
| 4-3-6 | Solder Ability | Soldering Time : 5-10 sec<br>Solder Temperature : 245±5℃, for 4-5 sec.<br>Test Method: EIA-364-52 | Solder Wetting | 95% Of Immersed Area Must Show No Voids, Pin Holes |

| Item | | Test Condition | Requirement | |
|---|---|---|---|---|
| 4-3-7 | Resistance To Soldering Heat | Soldering Time : 10±0.5 sec<br>Solder Temperature : 260±5℃ | Appearance | No Damage |
| 4-3-8 | Steam Aging | Steam Aging Temperature : 98±2℃<br>Duration: 8 hours<br>Solder Temperature : 245±5℃<br>Soldering Time : 3±0.5 sec | Appearance | No Damage |
| | | | Solder Wetting | 95% Of Immersed Area Must Show No Voids, Pin Holes |
| 4-3-8 | Salt Spray | Chamber Temperature : 35±2℃<br>Air Tank Temperature : 47±1℃<br>Salt Solution：5 ± 0.5%<br>Duration : 8 hours<br>Test Method: EIA-364-26,Test condition B. | Appearance | No Damage |
| | | | Contact Resistance | ≦ 50 mΩ |
| 4-3-9 | Temperature Cycling | 5 cycles of : a) - 40 ±3℃ 30 minutes<br>b)+ 85 ±2℃ 30 minutes<br>Test Method: EIA-364-32,Test condition A | Appearance | Must meet 4-3-5 |
| | | | Contact Resistance | |

**5-1**

Unit:kgf

| PIN No. | At initial | | At 20th |
|---|---|---|---|
| | I.F(Max) | W.F(Min) | W.F(Min) |
| 2~5 | 1.5 | 0.20 | 0.15 |
| 6~10 | 2.0 | 0.35 | 0.25 |
| 11~22 | 3.0 | 0.45 | 0.35 |
| 23~30 | 4.0 | 0.60 | 0.40 |
| Over 30 | 5.0 | 0.70 | 0.60 |

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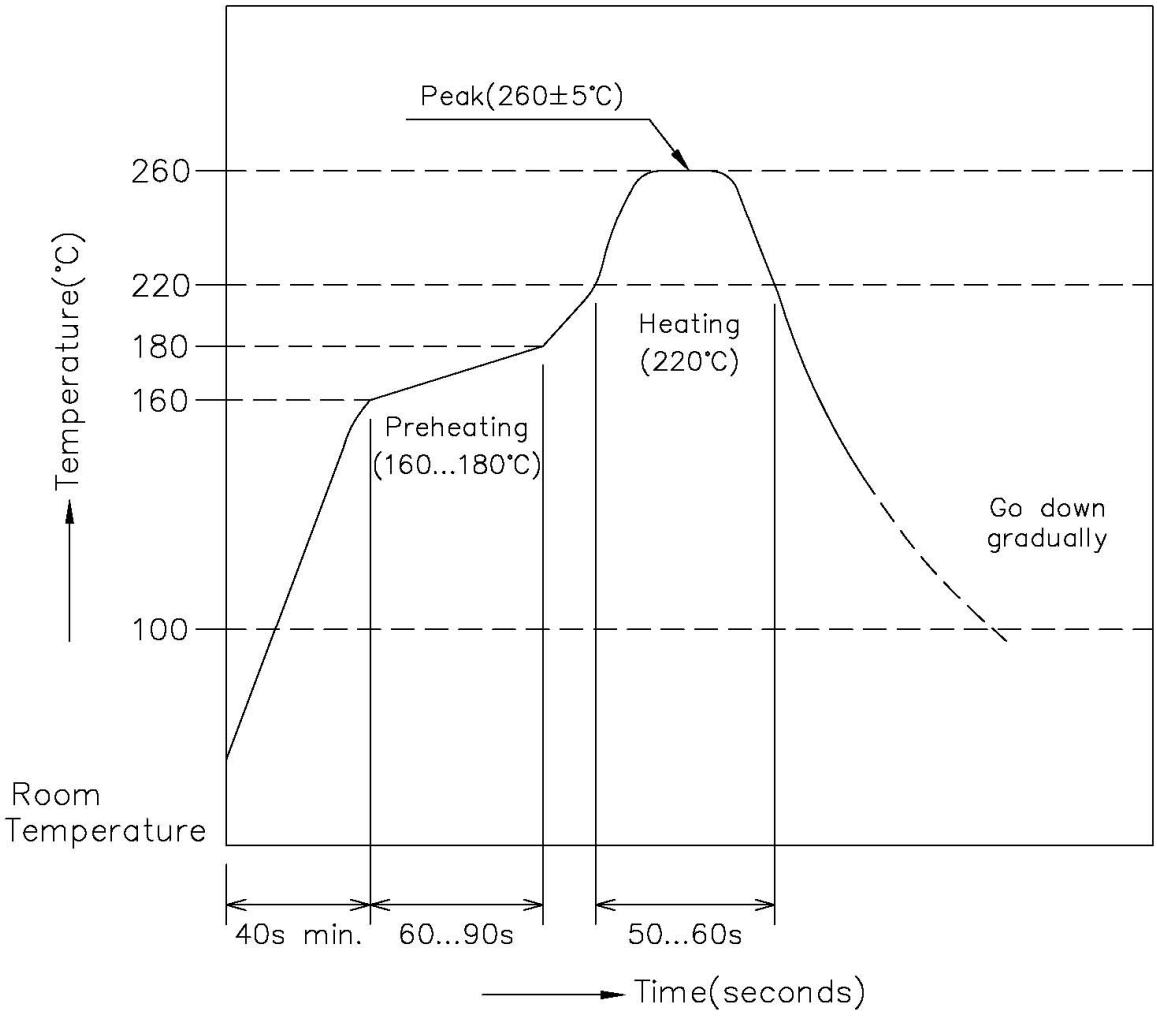
INFRARED REFLOW CONDITION

1) Ascending time to preheating temperature 170°C shall be 40 seconds minimum.
2) Preheating shall be fixed at 160...180°C for 60...90 seconds.
3) Heating shall be fixed at 220°C for 50...60 seconds.
4) At 260±5°C peak shall be 10 seconds maximum.



POLYPLASTICS CO LTD

VECTRA DIV 18-1 KONAN 2-CHOME MINATO-KU TOKYO 108-8280 JP

Material Designation: E130i(d)(e)(h)

Product Description: Liquid Crystal Polymer (LCP), thermotropic aromatic polyester, designated "Vectra" furnished as pellets.

| Color | Min. Thick. (mm) | Flame Class | HWI | HAI | RTI Elec | RTI Imp | RTI Str | IEC GWIT | IEC GWFI |
|---|---|---|---|---|---|---|---|---|---|
| BK | 0.4 | V-0 | - | - | 130 | 130 | 130 | - | - |
| ALL | 0.75 | V-0 | 2 | 4 | 240 | 220 | 240 | - | - |
| | 1.5 | V-0 | 1 | 4 | 240 | 220 | 240 | - | - |
| | 3.0 | V-0 | 0 | 4 | 240 | 220 | 240 | - | - |

CTI: 4 IEC CTI (V): - HVTR: 0 D495: 5 IEC Ball Pressure (°C): -

Dimensional Stability(%):

Dielectric Strength (kV/mm): 39 Volume Resistivity ($10^{3}$ohm-cm): 16 0

ISO Tensile Strength (MPa): - ISO Flexural Strength (MPa): - ISO Heat Deflection (°C): -

ISO Tensile Impact (kJ/m$^{2}$): - ISO Izod Impact (kJ/m$^{2}$): - ISO Charpy Impact (kJ/m$^{2}$): -

(d) Virgin and regrind up to 50% by weight incl have the same basic material characteristics for colors NC and BK in the 0.75, 1.5 and 3.0 thickness.

(e) In addition, regrind at 26 to 50% have the same basic characteristics at a minimum of 1.5mm except RTI's for the Mechanical w/Impact property is 180C.

(h) Recognition of virgin only at 0.4 mm in BK.

Report Date: 8/19/1992 Underwriters Laboratories Inc®

# COPPER ALLOY SPECIFIC

| Article | Standard NO | Dimension & Tempe |
|---|---|---|
| C2680 | JIS H 3100 | 0.15mm X16mm RH |

| Chemocal Compositions (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Element | Cu | Pb | Fe | Sn | Zn | P | Ni | Mn | Mg |
| Spec. | 64~68 | 0.0500↓ | 0.05↓ | — | REM | — | — | — | — |
| Actual | 65.21 | 0.0001 | 0.01 | — | REM | — | — | — | — |

| Mechanical Properties. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Item | Grain Size | Hardness | Tension Strength | Elongation | Electrical Conductivity | Bending Test | Surface Roughness | Camber |
| Unit | mm | HV | Kgf/mm | % | % IACS | 180° | Ra(μm) | mm/1M |
| Spec. | — | 160~175 | 52~62 | 8↑ | — | — | — | — |
| Actual | — | 164 | 53.9 | 16.3 | — | — | — | — |

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# COPPER ALLOY SPECIFIC

| Article | Standard NO | Dimension & Tempe |
|---|---|---|
| C2680 | JIS H 3100 | 0.20mm X16.5mm RH |

| Chemocal Compositions (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Element | Cu | Pb | Fe | Sn | Zn | P | Ni | Mn | Mg |
| Spec. | 64~68 | 0.0500↓ | 0.05↓ | — | REM | — | — | — | — |
| Actual | 65.21 | 0.0001 | 0.01 | — | REM | — | — | — | — |

| Mechanical Properties. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Item | Grain Size | Hardness | Tension Strength | Elongation | Electrical Conductivity | Bending Test | Surface Roughness | Camber |
| Unit | mm | HV | Kgf/mm | % | % IACS | 180° | Ra(μm) | mm/1M |
| Spec. | — | 160~175 | 52~62 | 8↑ | — | — | — | — |
| Actual | — | 164 | 53.9 | 16.3 | — | — | — | — |

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# Wire To Board
# Handling Precautions

**This manual is to describe basic precautions. When there are doubtful points in use of, please contact E&T.**

## 1. Common Handling Precautions

- Do not expose E&T's wire to board connector, processing process product and processing product to corrosive substance, corrosive gas, high temperature and high humidity and direct sunshine. It causes corrosion of contact and deterioration of insulation performance of housing, etc., so that it causes motion defect of appliances.
- Do not apply external load to E&T's wire to board connector, processing process product and processing product . Deformation and breakage, etc. occur, and it causes performance defect of.
- There may be slight differences in the housing coloring, but there will be no influence on the product's performance.
- Please do not conduct any "washing process" on the connector because it may damage the product's function.
- E&T's wire to board connector is not designed for the mating and unmating of the connectors to be performed under the condition of an active electrical circuit. It may cause a spark and product defect if the connectors are mated and unmated in this way.

## 2. PC Board Precautions

- Exercise caution when handling boards with the connectors installed. Do not apply any forces affecting soldered joints. (see figure 1).
- The mounting specification for coplanarity does not include the influence of warpage of the printed circuit board. (see figure 1).
- Changing recommended pattern causes problems.

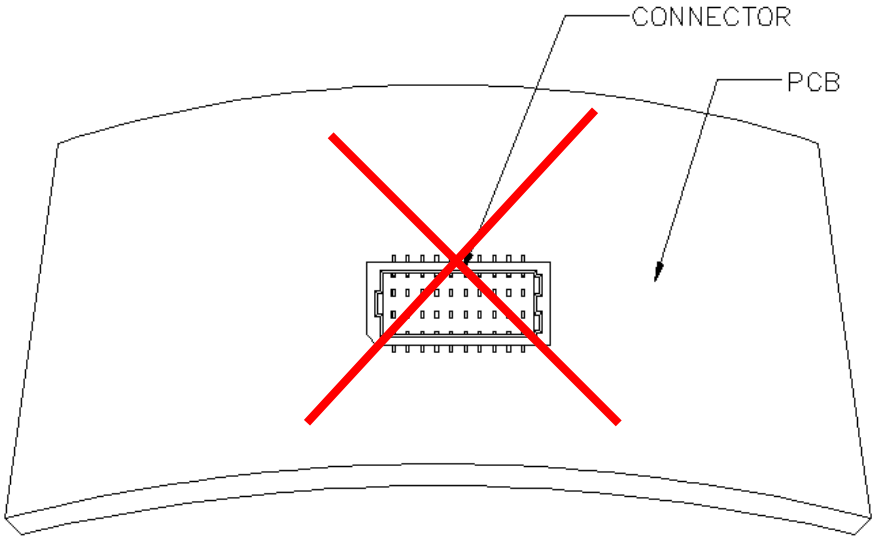


Figure 1.

## 3. Precautions Crimped Terminal Insertion

- Terminal must be inserted horizontally oriented (see figure 2).
- Do not attempt to insert crimped terminal in any other direction. (see figure 2).

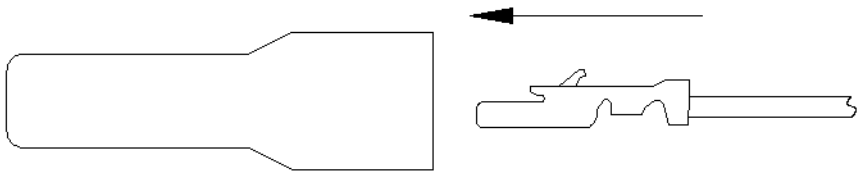

Figure 2.

## 4. Precautions When Inserting or Withdrawal Wire To Board

- Do not insert and remove at an angle of 25° or greater. Doing so will cause contact deformation or case damage. (see figure 3).
- Push the wire side connector until firmly closed. At this time, confirm that the wire side connector is mated securely.
- When mounting of connectors, its slant or aberration shall be 3° max.
- Do not insert and remove the connectors when the board side connector is not mounted on the PC board.
- Used Lock type, when removed to connectors, please released positive locks.

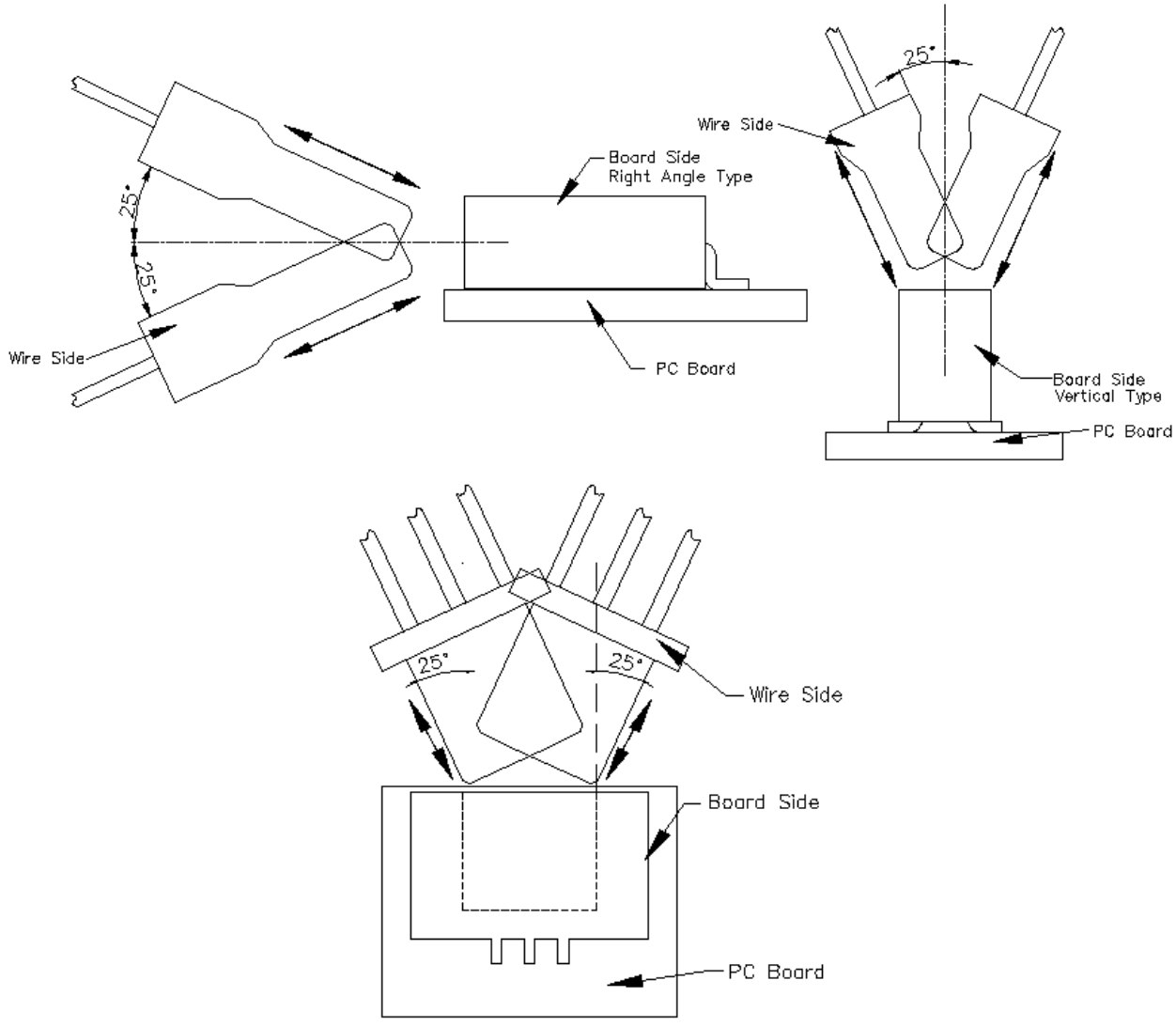


Figure 3.

## 5. Precautions Cable Assembly

- The cable assembly should not have a constant stress or pulling force applied on it when it is in the mated condition. Therefore, when designing the wire positioning, please ensure that there is enough length of wire to avoid stress on the connector. (see figure 4).

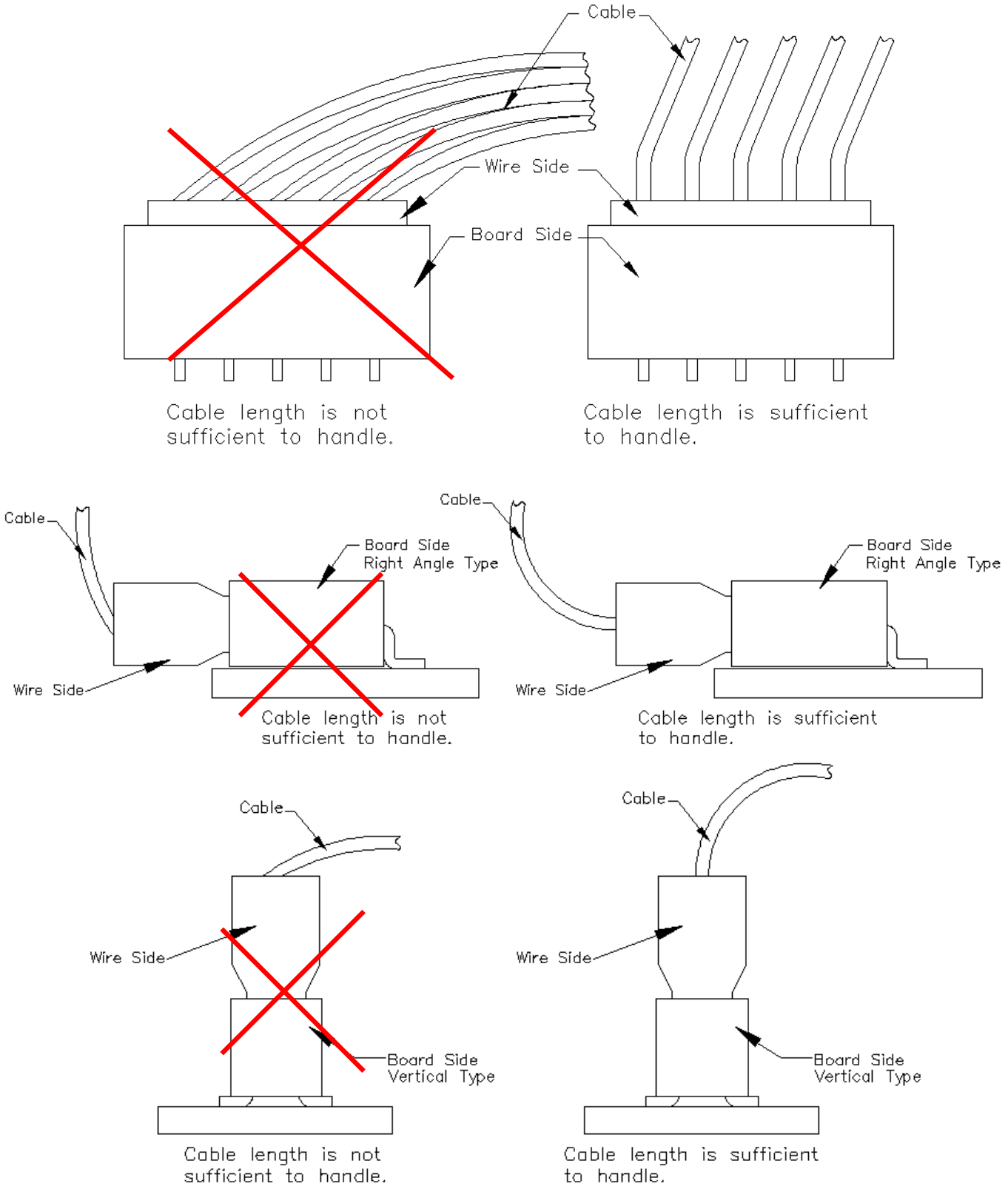


Figure 4.

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## RELEASE HISTORY

| Rev. | Revisions | Date | Executor | Description |
|---|---|---|---|---|
| A1 | RE201110012<br>RE201111014<br>RE201111028 | Oct-18-2011 | Max | Add Handing Precautions<br>LCP 6130LX Change LCP E130I<br>Cancel Packaging Spec |