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## **SPECIFICATION FOR APPROVAL**

DESCRIPTION: Pitch 2.5 mm Wire To Board Connector, DIP R/A

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CUSTOMER PROD.NO/DWG.NO:

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E&T PROD.NO: 4603K-XXXC-08X

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APPROVAL SHEET NO:

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E&T DWG. NO./DOCUMENT: 4603K-XXXC-08X

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REV: A1

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

<b>APPROVED SIGNATURES</b>			



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

# ENTERY INDUSTRIAL CO., LTD.

**Title : Pitch 2.5 mm Wire To Board Connector,  
DIP R/A**

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This Document Contains Information That Is Proprietary To  
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Rev	Description	
Document No.		Prepared By: Juno Chen
4603K-XXXC-08X		Checked By: <i>JA</i>
		Approved By: <i>JA</i>
		Date: 05,19'2008
		Date: <i>01,22,2008</i>
		Date: <i>01,22,2008</i>

**ENTERY INDUSTRIAL CO., LTD.**

## GROUP AND TEST SEQUENCE

[illegible]

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## PRODUCT SPECIFICATION

### 1. SCOPE :

This specification covers the 2.5 mm pitch Wire To Board connector right angle series.

### 2. PRODUCT NAME AND PART NUMBER :

Product Name	E&T Part Number
Pitch 2.5 mm Wire To Board Connector, DIP R/A	4603K-XXXC-08X

### 3. RATINGS :

Item	Standard	
Rated Voltage (MAX.)	250 V	AC/DC
Rated Current (MAX.)	3A (AWG #24)	
Ambient Temperature Range	-40 <sup>0</sup> C ~ +85 <sup>0</sup> 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: 100 mA Max. Test Voltage: 20mV Max Test Method: MIL-STD-202F, Method 303	20 mΩ MAX.
4-1-2	Insulation Resistance	Test Voltage: 500V DC. Test Duration: 1 minutes. Test Method: MIL-STD-202, method 302	1000 MΩ Min.
4-1-3	Dielectric Strength	Test Voltage: 300 V AC. Test Time: 60 sec. Test Method: MIL-STD-202, Method 301.	No Breakdown

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## 4-2 Mechanical Performance

Item		Test Condition	Requirement	
4-2-1	Insertion Force And Withdrawal Force	Test Speed: 25±3 mm/min. Test Method: MIL-STD-1344A, Method 2016.	See 5-1	
4-2-2	Terminal / Housing Retention Force	Test Speed: 25mm/min.	0.6kgf (Min)	
4-2-3	Durability	The contacts of connector shall be subject to 50 cycles of mating and unmating.	Contact Resistance	
			Initial Value	≤ 20 mΩ
			Final Value	≤ 40 mΩ
4-2-4	Vibration	Amplitude : 1.5 mm Frequency range: 10~55~10 Hz in 1 minute Duration: 2 hours in each X.Y.Z axes Current: 100mA. Test Method: MIL-STD-202F, Method 201	Appearance	No Damage
			Contact Resistance	≤ 40 mΩ
			Discontinuity	1μsec

## 4-3 Environmental Performance and Others

Item		Test Condition	Requirement	
4-3-1	Heat Resistance	Temperature: 85±2℃ Duration: 96 hours Test Method: MIL-STD-202, Method 108.	Appearance	No Damage
			Contact Resistance	≤ 40 mΩ
4-3-2	Cold Resistance	Temperature: -40±2℃ Duration: 96 hours Test Method: JIS C60068-2-1	Appearance	No Damage
			Contact Resistance	≤ 40 mΩ
4-3-3	Humidity	Temperature: 40±2℃ Relative Humidity: 90~95% Duration: 96 hours Test Method: MIL-STD-202F , Method 103	Appearance	No Damage
			Contact Resistance	≤ 40 mΩ
			Insulation Resistance	≥ 1000MΩ
			Dielectric Strength	Must meet 4-1-3
4-3-4	Solder Ability	Soldering Time : 3±0.5 sec Solder Temperature : 245±5℃ Test Method: MIL-STD-202F , Method 208	Solder Wetting	95% Of Immersed Area Must Show No Voids, Pin Holes

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Item		Test Condition	Requirement	
4-3-5	Resistance To Soldering Heat	Soldering Time : 10±0.5 sec Solder Temperature : 260±5°C Test Method: MIL-STD-202F , Method 210A	Appearance	No Damage
4-3-6	Steam Aging	Steam Aging Temperature : 98±2°C Duration: 8 hours Solder Temperature : 235±5°C Soldering Time : 3±0.5 sec Test Method: MIL-STD-202F , Method 208	Appearance	No Damage
			Solder Wetting	95% Of Immersed Area Must Show No Voids, Pin Holes
4-3-7	Salt Spray	Chamber Temperature : 35±2°C Air Tank Temperature : 47±1°C Salt Solution : 5 ± 0.5% Duration : 48 hours Test Method: MIL-STD-202 , Method 101D	Appearance	No Damage
			Contact Resistance	≤ 40 mΩ
4-3-8	Temperature Cycling	5 cycles of : a) - 40 ±3°C      30 minutes b) +25 ±3°C      30 minutes c)+ 85 ±2°C      30 minutes Test Method: JIS C0025	Appearance	No Damage
			Contact Resistance	≤ 40 mΩ

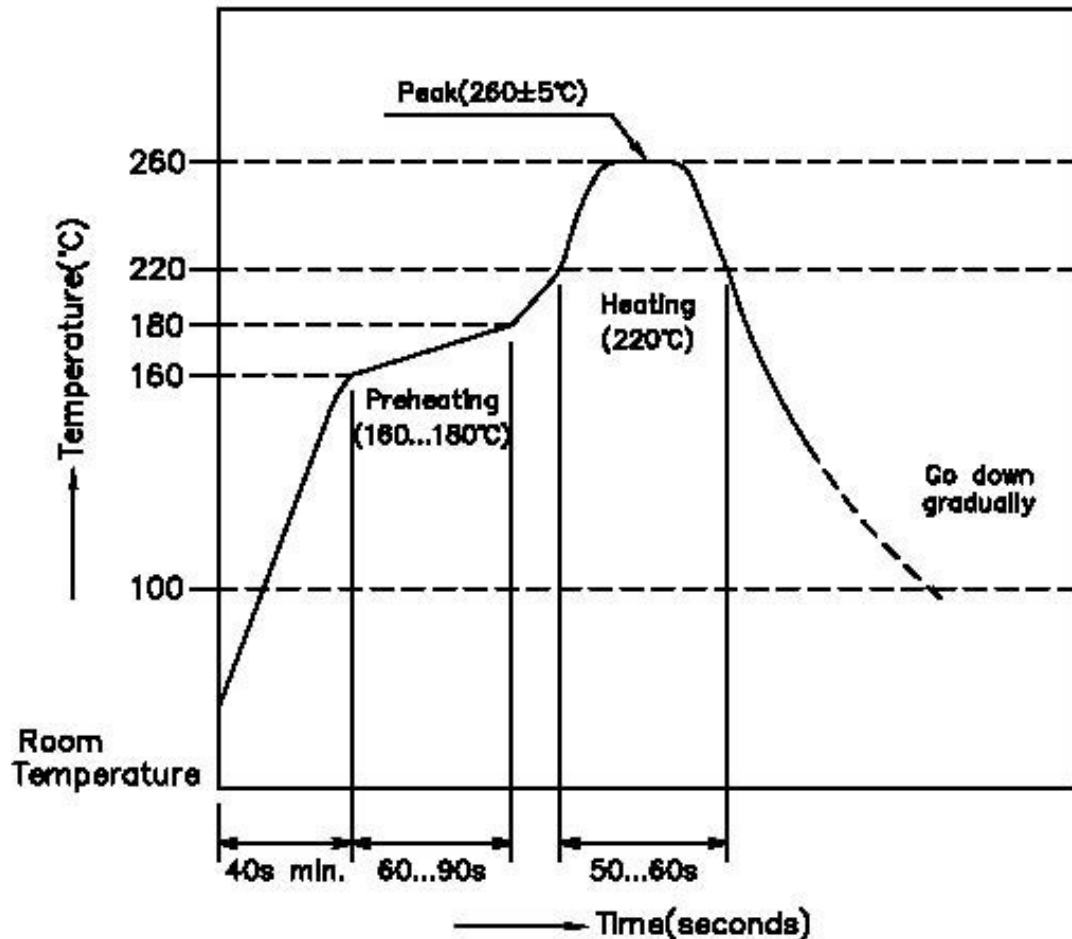
Unit:N

Pin No.	At Initial		At 50th
	I.F(MAX)	W.F(Min)	W.F(Min)
2	19.6	3.9	2.0
3	24.5	4.9	2.9
4	29.4	5.9	3.9
5	34.3	6.9	4.9
6	39.2	7.8	5.9
7	44.1	8.8	6.9
8	49.0	9.8	7.8
9	53.9	10.8	8.8
10	58.8	11.8	9.8
11	63.7	12.7	10.8
12	68.6	13.7	11.8
13	73.5	14.7	12.7
14	78.4	15.7	13.7
15	83.3	16.7	14.7

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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.



## 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.

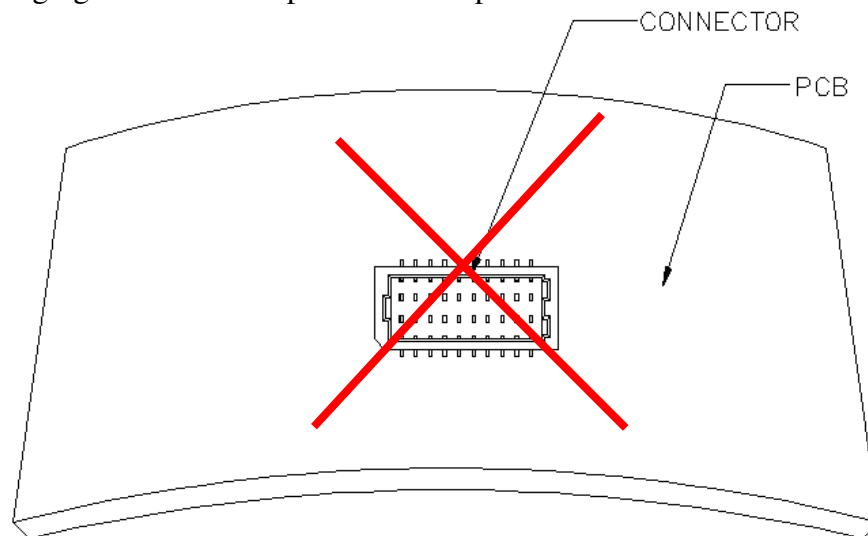


Figure 1.



## 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).

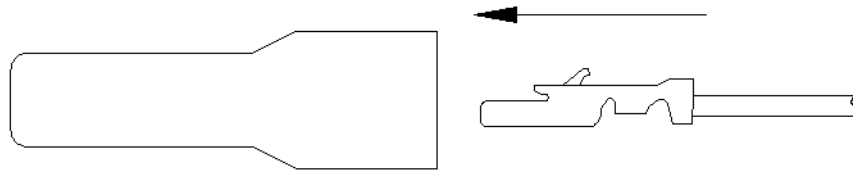


Figure 2.

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

- Do not insert and remove at an angle of  $25^\circ$  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  $3^\circ$  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.

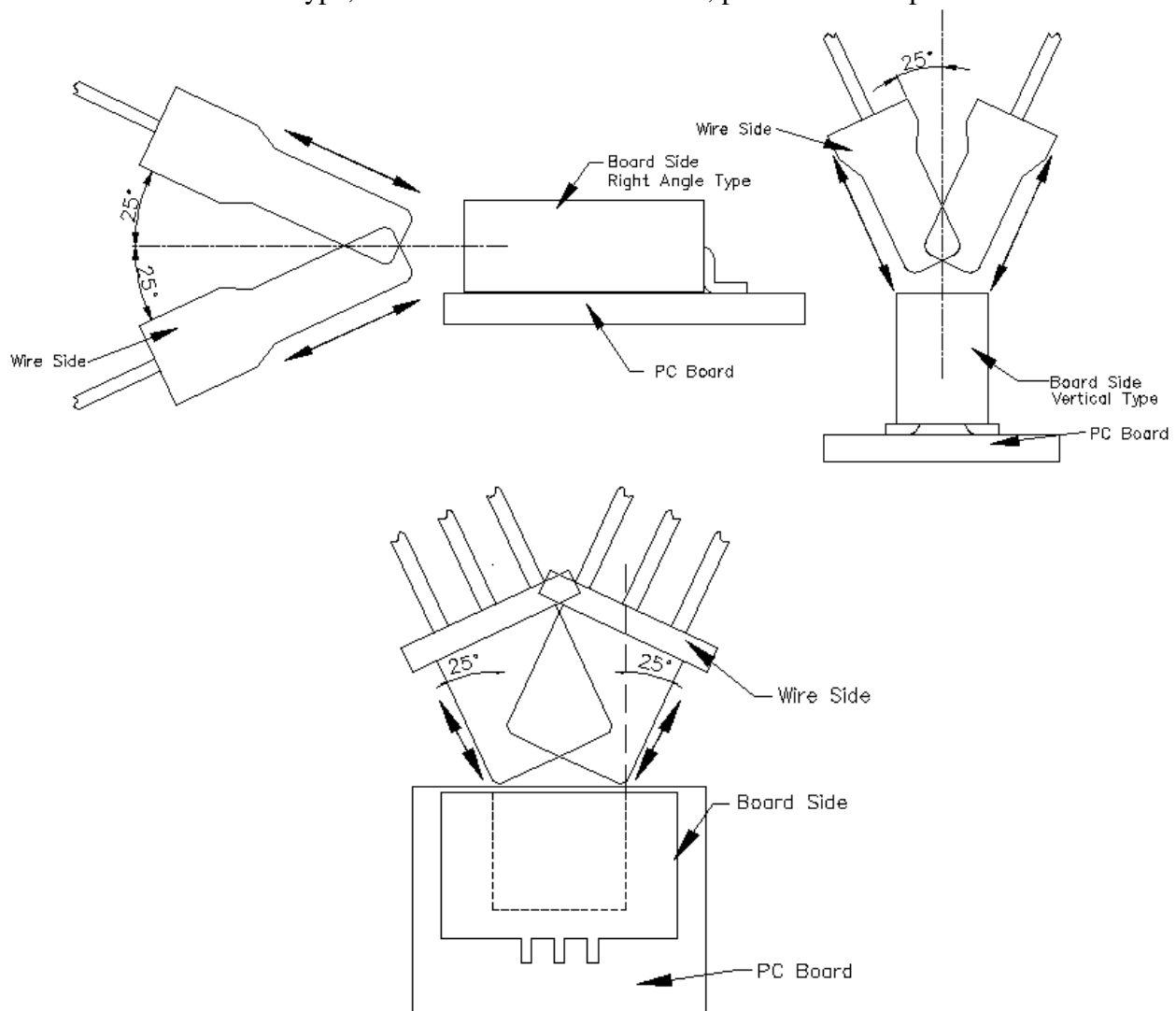


Figure 3.

## 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).

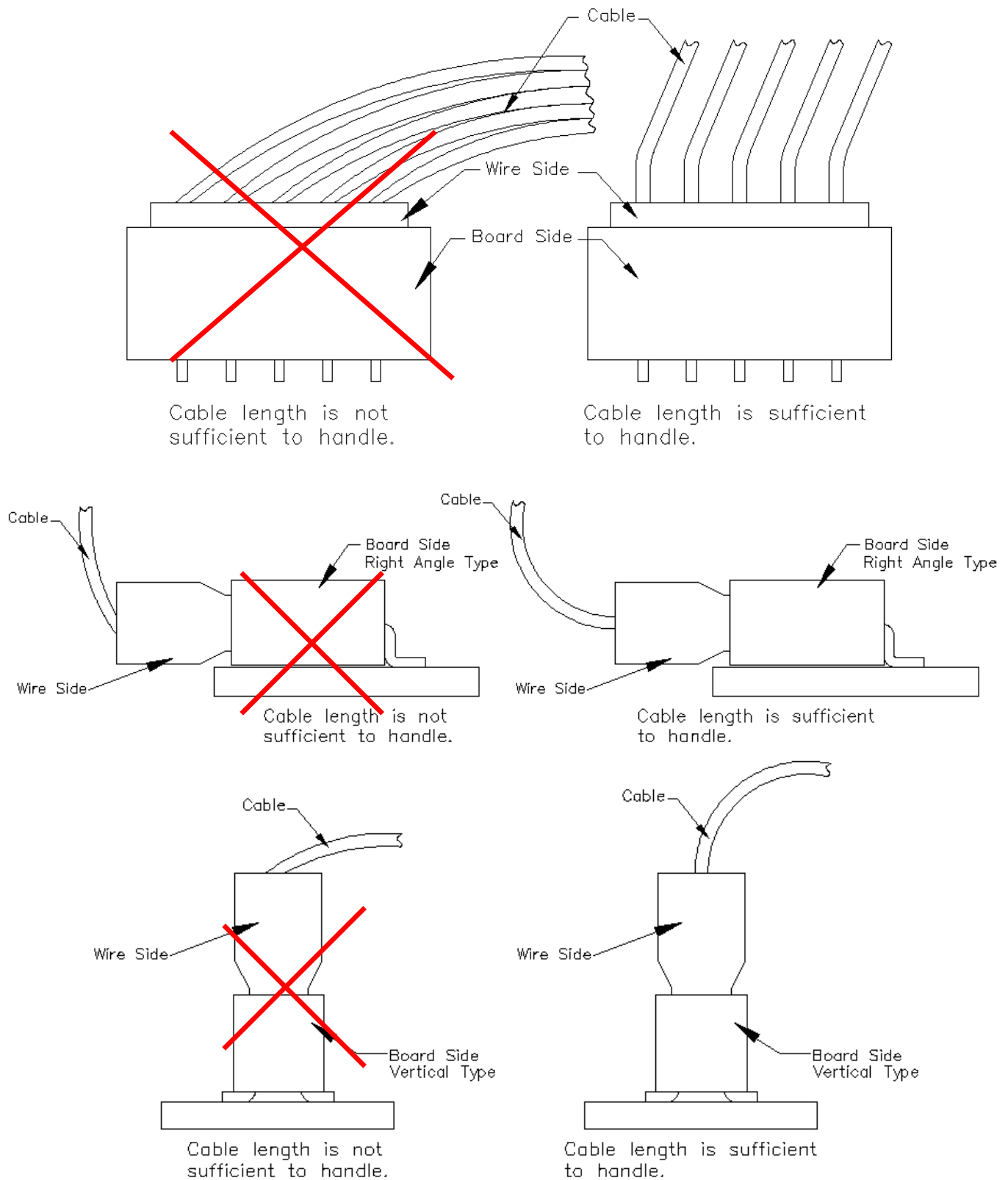


Figure 4.

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## RELEASE HISTORY

Rev.	Revisions	Date	Executor	Description
A1	RE201110012 RE201111028	Oct-18-2011	Juno	Add Handling Precautions. Cancel Packaging Spec