

**TO**

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**SPECIFICATION FOR APPROVAL**

DESCRIPTION: Pitch 0.50mm NON-ZIF FPC Connector, R/A, SMT Type Double-Face Contact

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CUSTOMER PROD.NO/DWG.NO:

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E&T PROD.NO: 7080K-XXXX-XXX

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APPROVAL SHEET NO:

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E&T DWG. NO./DOCUMENT: 7080K-XXXX-XXX

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REV: A2

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APPROVED SIGNATURES			



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

ENTERY INDUSTRIAL CO., LTD.

**Title : Pitch 0.50mm NON-ZIF FPC Connector,  
R/A, SMT Type Double-Face Contact**

RELEASE HISTORY		<b>Title: Pitch 0.50mm NON-ZIF FPC Connector, R/A, SMT Type Double-Face Contact</b>	
A2	2012/3/20	This Document Contains Information That Is Proprietary To E&T And Should Not Be Used Without Written Permission	
<b>Rev</b>	<b>Description</b>		
Document No.		Prepared By: Jimmy Hsu	Date: 12,22'2010
7080K-XXXX-XXX		Checked By: <i>Abul a</i>	Date: <i>2012.3.20</i>
		Approved By: <i>Abul a</i>	Date:

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## GROUP AND TEST SEQUENCE

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

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## PRODUCT SPECIFICATION

### 1. SCOPE :

This specification covers the Pitch 0.50 mm NON-ZIF FPC Connector series.

### 2. PRODUCT NAME AND PART NUMBER :

Product Name	E&T Part Number
0.50mm NON-ZIF FPC Connector R/A SMT Type Double-Face Contact	7080K-XXXX-XXX

### 3. RATINGS :

Item	Standard	
Rated Voltage (MAX.)	70 V	AC (rms) / DC
Rated Current (MAX.)	0.5 A	
Ambient Temperature Range	-20 <sup>0</sup> C ~ +85 <sup>0</sup> C	
Operating Temperature Range	-40 <sup>0</sup> C ~ +85 <sup>0</sup> C	

\*1. Including terminal temperature rise .

### 4. PERFORMANCE :

#### 4 - 1 Electrical Performance

Item		Test Condition	Requirement
4-1-1	Contact Resistance	Mate applicable FPC and measure by dry circuit , 20mV MAX., 10 m A . ( EIA-RS-364-06A)	20 mΩ MAX.
4-1-2	Insulation Resistance	Mate applicable FPC and apply 500V DC between adjacent terminal or ground. ( EIA-364-21B )	100MΩ MIN.
4-1-3	Dielectric Strength	Mate applicable FPC and apply 500V AC (r m s) for 1 minute between adjacent terminal or ground. (EIA-364-20A-,Method B)	No Breakdown

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## 4-2 Mechanical Performance

Item		Test Condition	Requirement
4-2-1	FPC Insertion Withdrawal	Insert the actuator, pull the FPC at the speed rate of $25 \pm 3$ mm / minute.	Insertion force = Pos.x0.08kgf MAX  Separation force = Pos.x0.02kgf MIN
4-2-2	Terminal/ Housing Retention Force	Apply axial pull out force at the speed rate of $25 \pm 3$ mm / minute on the terminal assembled in the housing.	{ 0.15kgf } MIN.
4-2-3	Fitting nail/Housing Retention Force	Apply axial pull out force at the speed rate of $25 \pm 3$ mm / minute on the terminal assembled in the housing.	{ 0.1kgf } MIN.

## 4-3 Environmental Performance and Others

Item		Test Condition	Requirement	
4-3-1	Durability	Insert and withdraw actuator up to 10cycles at the speed rate of less than 10 cycles/ minute.	Contact Resistance	40 mΩ MAX.
4-3-2	Temperature Rise	Carrying rated current load. ( UL 498 )	Temperature Rise	30°C MAX.
4-3-3	Vibration	Amplitude : 1.5 mm P-P Sweep time : 10-55-10 Hz in 1 minute Duration : 2 hours in each X.Y.Z. axes ( EIA-364-28 )	Appearance	No Damage
			Dis-continuity	1 μ sec. MAX.
4-3-4	Shock	490m/S { 50G } ,3 strokes in each X.Y.Z. axes. (EIA-364-27B)	Appearance	No Damage
			Contact Resistance	40mΩ MAX
			Dis-continuity	1 μ sec. MAX
4-3-5	Heat Resistance	85±2°C, 96 hours (EIA-364-17B)	Appearance	No Damage
			Contact Resistance	40mΩ MAX

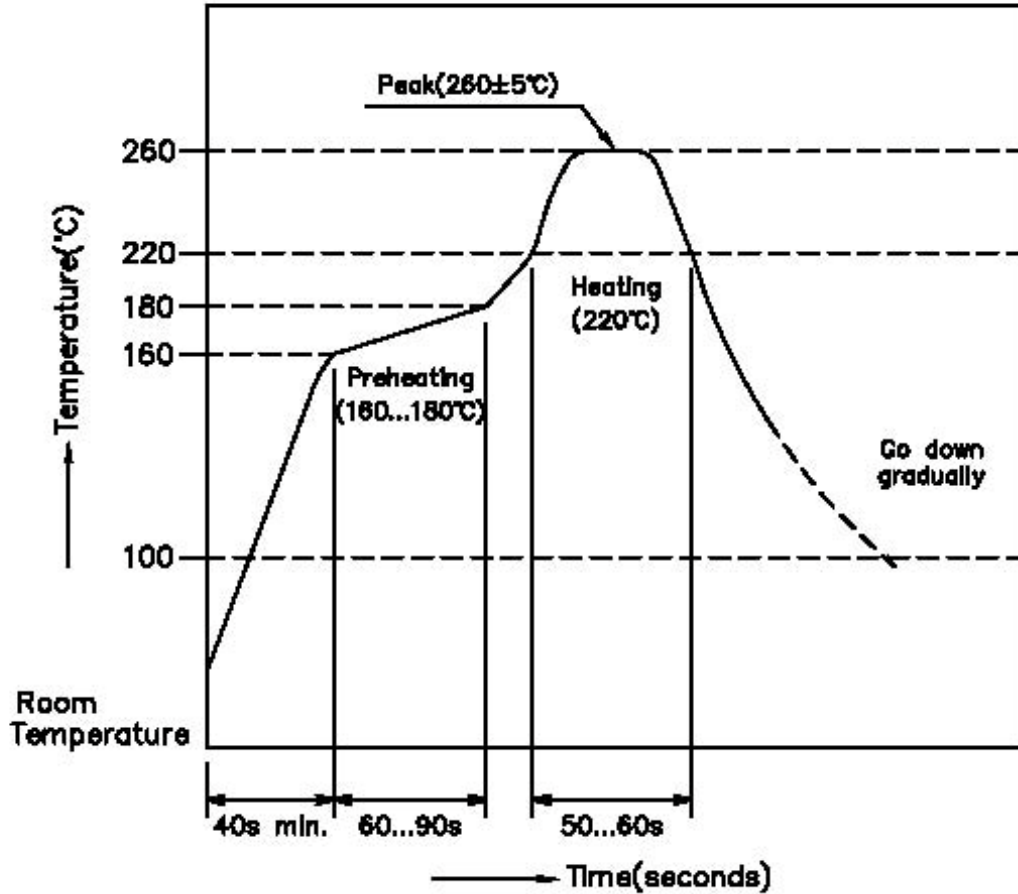
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Item		Test Condition	Requirement	
4-3-6	Cold Resistance	-40±2°C, 96 hours ( Based upon JIS C0020 )	Appearance	No Damage
4-3-7	Humidity	Temperature : 40±2°C Relative Humidity : 90~95% Duration : 96 hours ( EIA-364-31A, Method, Condition A )	Contact Resistance	40mΩ MAX
4-3-8	Temperature Cycling	32 cycles of : a) - 55 ±3°C 30 minutes b) +25 ±3°C 30 minutes c) + 85 ±2°C 30 minutes ( EIA-364-32 C )	Appearance	No Damage
4-3-9	Salt Spray	48±4 hours exposure to a salt spray from the 5±1% solution at 35±2°C. ( EIA-364-26 )	Appearance	No Damage
4-3-10	Solder ability	Soldering Time : 3±0.5 sec. Solder Temperature : 245±5°C ( EIA-364-52 )	Solder Wetting	95% of immersed area must show no voids, pin holes
4-3-11	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

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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.



## Non-ZIF FPC /FFC Connector 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 Non-ZIF FPC/FFC 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 Non-ZIF FPC/FFC 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 add a stiffener on the flexible printed circuit (FPC/FFC) when you mount the connector onto FPC in order to prevent deformation of the FPC/FFC.
- Please do not conduct any "washing process" on the connector because it may damage the product's function.

### **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).

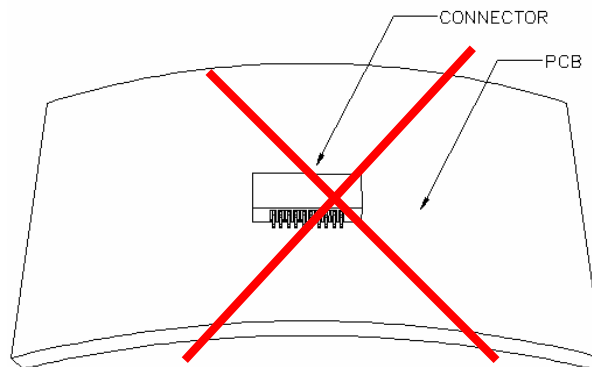


Figure 1.



## 3. Precautions When Inserting or Withdrawal FPC/FFC

- FPC/FFC to be insertion and withdrawal at an angle of about 15°, and the FPC/FFC should be inserted firmly all the way to the back. (see figure 2).

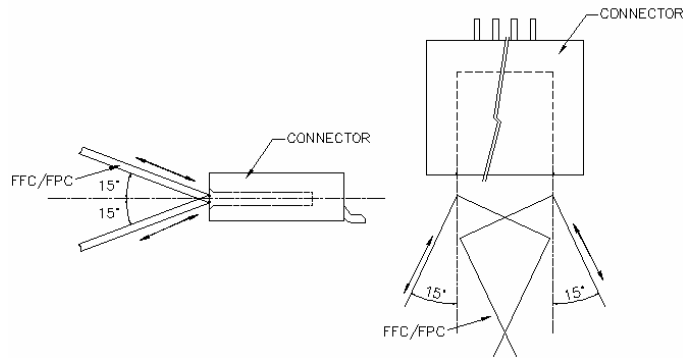


Figure 2.

- Do not apply any forces affecting soldered joints. Do not apply upward pull-force to the FPC/FFC close to the connector. (see figure 3).
- If necessary, please fix the FPC/FFC directly on the chassis. Also, please avoid pulling the FPC/FFC vertically or twisting the FPC back and force horizontally while it is inserted in the connector(see figure 3).
- Forming processing is conducted to FPC so as not to load force to connector. (see figure 3).

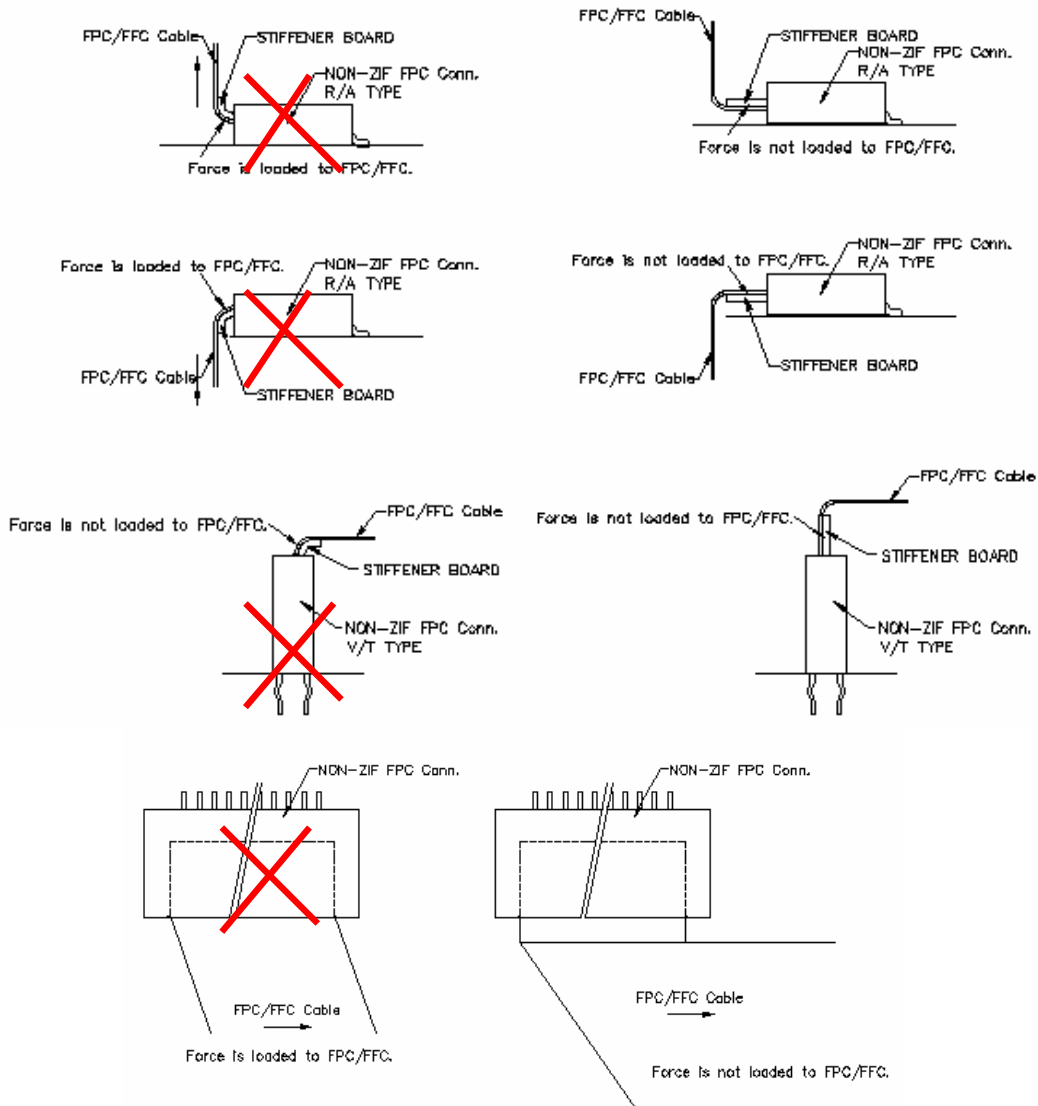


Figure 3.

**ENTERY INDUSTRIAL CO., LTD.****RELEASE HISTORY**

<b>Rev.</b>	<b>Revisions</b>	<b>Date</b>	<b>Executor</b>	<b>Description</b>
A1	RE201108011	AUG-08-2011	KAZ	ADD Handling Precautions
A2	REN120317	Mar-20-2012	Juno	Modify Rated Voltage