

TO

SPECIFICATION FOR APPROVAL

DESCRIPTION: Pitch 1.00mm ZIF FPC Connector, V/T, SMT Type

CUSTOMER PROD.NO/DWG.NO:

E&T PROD.NO: 6904K-XXXX-03X

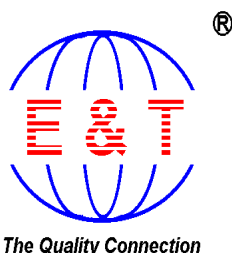
APPROVAL SHEET NO:

E&T DWG. NO./DOCUMENT: 6904K-XXXX-03X

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.
E&T ELECTRONICS (NANKEEN)CO.,LTD.**

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**Title: Pitch 1.00mm ZIF FPC Connector, V/T,
SMT Type**

By History		Title: Pitch1.00mm ZIF FPC Connector, V/T, SMT Type	
A2	08,19,2011	This Document Contains Information That Is Proprietary To E&T And Should Not Be Used Without Written Permission	
Rev	Description		
Document No.		Prepared By: Jimmy Hsu	Date: 10.04,2010'
6904K-XXXX-03X		Checked By: <i>JH</i>	Date: <i>12/20/2011</i>
		Approved By: <i>JH</i>	Date:

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PRODUCT SPECIFICATION

1. SCOPE:

This specification covers the pitch 1.00 mm ZIF FPC connector series.

2. PRODUCT NAME AND PART NUMBER :

Product Name	E&T Part Number
1.00mm ZIF FPC Connector, V/T, SMT Type	6904K-XXXX-03X

3. RATINGS :

Item	Standard	
Rated Voltage (MAX.)	125 V	(AC (r ms)/ DC)
Rated Current (MAX.)	1 A	
Ambient Temperature Range	-20°C ~ +85°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 mA . (Based upon JIS C5402 5.4)	20 mΩMAX.
4-1-2 Insulation Resistance	Mate applicable FPC and apply 500V DC between adjacent terminal or ground. (Based upon JIS C5402 5.2 / MIL- STD-202 Method 302)	100MΩMIN.
4-1-3 Dielectric Strength	Mate applicable FPC and apply 500V AC (rms) for 1 minute between adjacent terminal or ground. (Based upon JIS C5402 5.1/MIL- STD-202 Method 301)	No Breakdown No Arcing

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4-2 Mechanical Performance

Item		Test Condition	Requirement
4-2-1	FFC/Retention Force	Test Speed: 25±3 mm/min.	Refer to paragraph 6
4-2-2	Terminal/ Housing Retention Force	Apply axial pull out force at the speed rate of 25±3 mm / minute on the terminal assembled in the housing.	{ 0.2kgf } MIN. (PER PIN)
4-2-3	Durability	Insert and withdraw actuator up to 30cycles at the speed rate of less than 10 Cycles / minute.	Contact Resistance :
			Initial Value ≤ 20 mΩ
			Final Value ≤ 40 mΩ

4-3 Environmental Performance and Others

Item		Test Condition	Requirement
4-3-1	Vibration	Amplitude : 1.5 mm P-P Sweep time : 10-55-10 Hz in 1 minute Duration : 2 hours in each X.Y.Z. axis With DC 1ma during test (Based upon MIL-STD-202 Method 201A)	Appearance : No Damage
			Contact Resistance: 40 mΩMAX
			Dis-continuity : 1 μ sec. MAX.
4-3-2	Heat Resistance	(2) 85±2°C, 96 hours (Based upon JIS C0021/MIL-STD-202 Method 108A Condition. A)	Appearance : No Damage
			Contact Resistance : 40 mΩMAX.
4-3-3	Temperature Cycling	5 cycles of : a) - 40 ±3°C 30 minutes b) +25 ±3°C 30 minutes c) + 85 ±2°C 30 minutes (Based upon JIS C0025)	Appearance : No Damage.
4-3-4	Cold Resistance	Temperature: -20±2°C Duration: 96 hours Test Method: JIS C60068-2-1	Appearance: No Damage

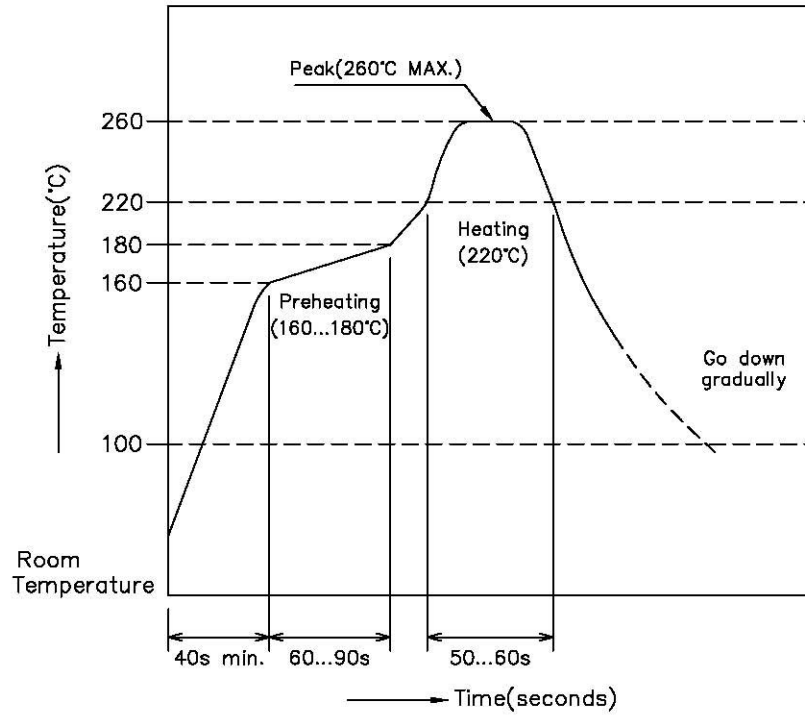
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Item		Test Condition	Requirement	
5. P	4-3-5 Humidity	(1)Temperature : 40±2°C Relative Humidity : 90~95% Duration : 96 hours (Based upon JIS C0022/MIL-STD-202 Method 103B Condition. B)	Appearance : No Damage.	
			Contact Resistance : 40 mΩMAX.	
	4-3-6 Salt Spray	48±4 hours exposure to a salt spray from the 5±1% solution at 35±2°C. (Based upon JIS C5028/MIL-STD-202 Method 101D Cord. B)	Appearance : No Damage.	
	4-3-7 Solder ability	Soldering Time : 3±0.5 sec. Solder Temperature : 245±5°C (MIL-STD-202 Method 208G)	Solder Wetting : 95% of immersed area must show no voids, pin holes	
	4-3-8 Resistance to Soldering Heat	Soldering Time : 10±0.5 sec. Solder Temperature : 260±5°C (MIL-STD-202, METHOD 210A, condition A)	Appearance : No Damage	
	4-3-9 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

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5. 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 255±5°C peak shall be 10 seconds maximum.



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6. 1.00mm FPC RETENTION FORCE SPEC

No. of CKT	UNIT	Retention Force(MIN.)		No. of CKT	UNIT	Retention Force(MIN.)	
		1st	10th			1th	10th
4	N Kg f	4.90 { 0.500 }	4.10 { 0.400 }	18	N Kg f	8.40 { 0.850 }	7.40 { 0.750 }
5	N Kg f	5.15 { 0.525 }	4.30 { 0.425 }	19	N Kg f	8.65 { 0.875 }	7.65 { 0.775 }
6	N Kg f	5.40 { 0.550 }	4.50 { 0.450 }	20	N Kg f	8.90 { 0.900 }	7.90 { 0.800 }
7	N Kg f	5.65 { 0.575 }	4.70 { 0.475 }	21	N Kg f	9.15 { 0.925 }	8.15 { 0.825 }
8	N Kg f	5.90 { 0.600 }	4.90 { 0.500 }	22	N Kg f	9.40 { 0.950 }	8.40 { 0.850 }
9	N Kg f	6.15 { 0.625 }	5.15 { 0.525 }	23	N Kg f	9.65 { 0.975 }	8.65 { 0.875 }
10	N Kg f	6.40 { 0.650 }	5.40 { 0.550 }	24	N Kg f	9.80 { 1.000 }	8.90 { 0.900 }
11	N Kg f	6.65 { 0.675 }	5.65 { 0.575 }	25	N Kg f	10.05 { 1.025 }	9.15 { 0.925 }
12	N Kg f	6.90 { 0.700 }	5.90 { 0.600 }	26	N Kg f	10.30 { 1.050 }	9.40 { 0.950 }
13	N Kg f	7.15 { 0.725 }	6.15 { 0.625 }	27	N Kg f	10.55 { 1.075 }	9.60 { 1.975 }
14	N Kg f	7.40 { 0.750 }	6.40 { 0.650 }	28	N Kg f	10.80 { 1.100 }	9.80 { 1.000 }
15	N Kg f	7.65 { 0.775 }	6.65 { 0.675 }	29	N Kg f	11.05 { 1.125 }	10.05 { 1.025 }
16	N Kg f	7.90 { 0.800 }	6.90 { 0.700 }	30	N Kg f	11.30 { 1.150 }	10.30 { 1.050 }
17	N Kg f	8.15 { 0.825 }	6.15 { 0.725 }				

FPC /FFC Connector Slip Lock Type 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 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 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).

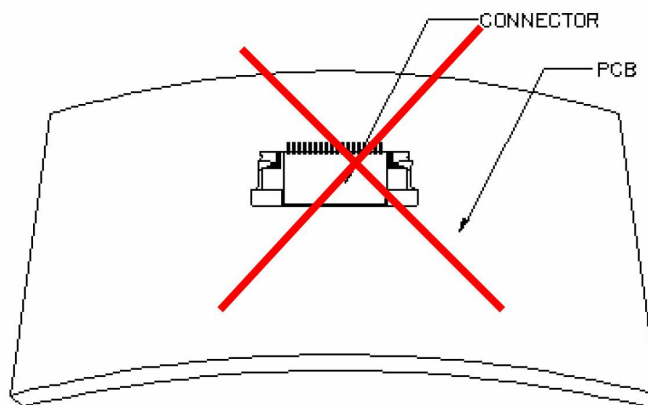


Figure 1.

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3. Operation

FPC/FFC Insertion Procedure.

- 1) Connector installed on the board.
Seize the actuator(Lock) to pull out. Use thumb and index finger. (see figure 2).

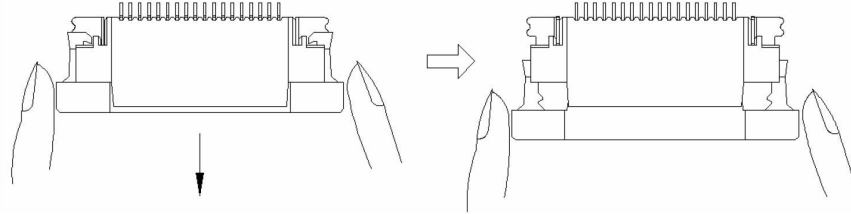


Figure 2.

- 2) Assure that the FPC/FFC is fully inserted parallel to mounting surface. (see figure 3)

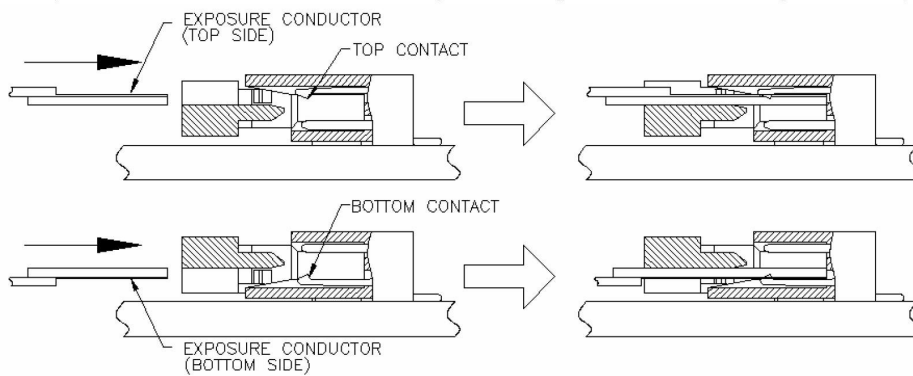


Figure 3.

- 3) Push the actuator(Lock) until firmly closed. It is critical that the inserted FPC is not moved and remains fully inserted. Should the FPC be moved, open the actuator(Lock) and repeat the process, starting with Step 1(see figure 4).

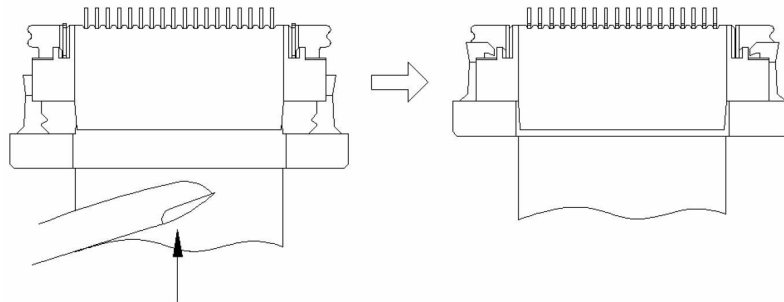


Figure 4.

FPC/FFC Removal.

- 1) Seize the actuator(Lock) to pull out. Use thumb and index finger. (see figure 5).
- 2) Carefully withdraw the FPC/FFC. (see figure 5).

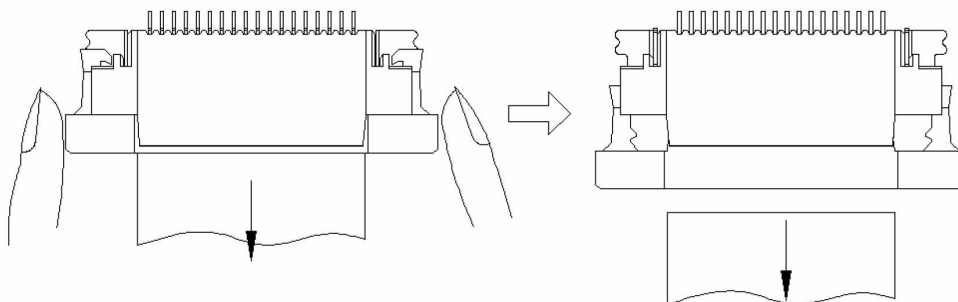


Figure 5.

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4. 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 6).

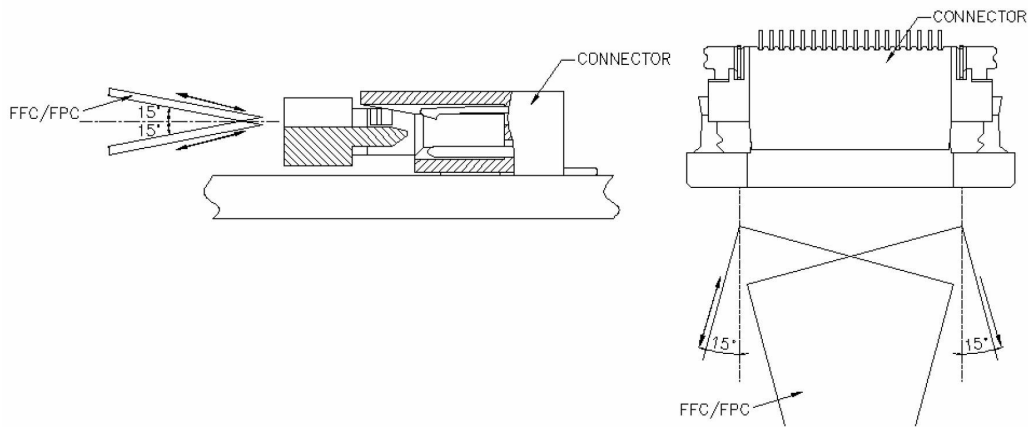


Figure 6.

- 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 7).
- Forming processing is conducted to FPC so as not to load force to connector. (see figure 7).

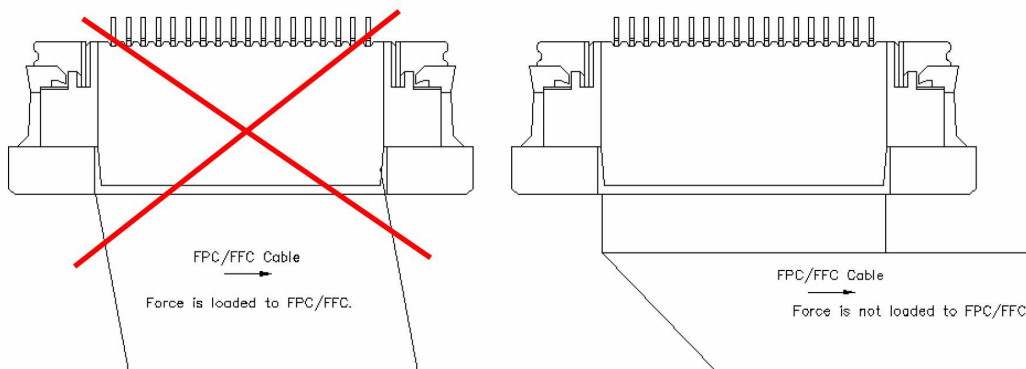


Figure 7.

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RELEASE HISTORY

Rev.	Revisions	Date	Executor	Description
A0	First Release	Oct-04-2010	Jimmy	First Release
A1	RE201108011	Aug-19-2011	Well	ADD Handling Precautions
A2	RE201111028	DEC-08-2011	Juno	Cancel Packaging