



产品规格书

PRODUCT SPECIFICATION

产品描述: EI 系列连接器

Product Description: EI Connector

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 浙江合兴电子元件有限公司 CWB Electronics (Zhejiang) Co., Ltd.	<u>制定 Edit:</u> 王彦飞 2019.1.15	<u>产品名称 Product Name:</u> EI
	<u>审核 Check:</u> 王国英 2019.1.15	<u>编号 Document No.:</u> PS4021
	<u>批准 Approval:</u> 刘冬旭 2019.1.15	<u>版本 REVISION:</u> 1
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1. 更改履历 Change History

序号 No.:	版本号 Version No.	更改前描述 Description Before Modification	更改后描述 Description After Modification	更改人/日期 Reviser/Date
1	1	/	新版本发放	王彦飞 2019.1.15
2				
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4				
5				

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2. 适用范围 Scope

本产品规格书适用于浙江合兴电子元件有限公司生产的 CTB 2.5P 阴型 & 阳型电子连接器，产品名称：EI。

This product specification covers the requirement for Cable to Board 2.5mm pitch Receptacle & Plug connector, which are designed and manufactured by CWB Electronics(ZheJiang) Co.,LTD. P/N: EI.

3. 产品描述 Product Description

EI 系列产品为家电连接器产品，产品部件组成如下：

The EI series connector designed for home appliances connection. Part checklist as following form:

Name	Part name	Notes
条形连接器孔座 Housing	EI-nY	PA66 UL94 V-2
插簧 Contact	EI	Phosphor bronze, Tin plating
阳连接器 Header	EI-nA	Wafer: PA66 UL94 V-2 Post: Tin plating
阳连接器 Header	EI-nAW	Wafer: PA66 UL94 V-2 Post: Tin plating

4. 相关标准 Related Standards

以下参考文件是本规格书的一个组成部份。若本规格书中的要求与产品图纸发生冲突，则产品图中的要求为优先；若本规格书中的要求与参考文件中的要求冲突，则本规格书为优先。

The following documents form a part of this specification. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

GB/T 2421	电工电子产品环境试验 第一部分 总则 Testing Method for Environmental of Electrical Connectors	Class 1: General Principles
GB/T 2423	电工电子产品环境试验方法 Testing Method for Environmental of Electrical Connectors	
GB/T 2424	电工电子产品环境试验导则 Testing Method for Environmental of Electrical Connectors	
GB/T 5095	电子设备用机电元件基本试验规程及测量方法 Testing procedure/ Method for components of electric equipment	

产品符合合兴企标 Q/HX J1150001 《产品及所用材料的环保要求》 I 类或顾客要求。

The connector should comply with CWB standard Q/HX J1150001 Class I or customer's requests

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5.参数范围 Parameter Ratings:

额定电流 Rated Current	3A
适用 PCB 板 Applicable P.C.B	Board Thickness: 1.2mm-1.6mm Hole Diameter: 0.9mm-1.0mm
额定电压 Rated Voltage	250V [AC(有效值 rms)/DC]
使用温度范围（包含温升） Operating temperature range (Include temperature rise)	-25℃～+85℃
适用线型 Applicable wires	Wire Size: AWG28～AWG22 (0.08mm ² -0.32 mm ²) Insulation Diameter: 1.2mm-1.6mm



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6. 产品性能 Performance

6.1 机械性能 Mechanical

序号 No.	项 目 Item	测试条件 Test Condition	规 格 Requirement
6.1.1	外观 Appearance	目测 Checking by eyes 视力: 1.0 以上 Eyesight: > 1.0 照明: (200~300) lx Lamp: (200~300) lx 目测距离: (0.3~0.5) m Space: (0.3~0.5) m GB/T 5095.1 Method 1a	1.塑料件表面应无明显疤痕、凹陷、开裂及影响使用的变形。 Plastic part: smooth and flat surface without discolor, broken, crack, and distortion, etc. 2 金属件表面无锈蚀、氧化、无明显的机械损伤及电镀层脱落等缺陷。 Metal part: bright and even surface without rust, oxide, fog and obvious physical damage, etc.
6.1.2	端子的固定力 Retention Force for Contact	固定连接器和测力计, 在连接器轴线方向插入和拔出; 速度不大于 25 mm/min. Axial Insert and withdraw force on the contact in the housing at a rate less than 25 mm/min. GB/T 5095.8 Method 15d / EIA-364-29B	30N Min
6.1.3	针的固定力 Retention Force for Pin	固定连接器和测力计, 在连接器轴线方向施加规定的推力进行测试, 25 mm/min. Apply thrust force on the Pin in the wafer at a rate less than 25 mm/min . GB/T 5095.8 Method 15a / EIA-364-29B	20NMin
6.1.4	压着部位抗张 强度 Crimping Pull Out Force	在试验装置夹头中固定试验样品, 在连接的轴线方向施加张力; 25 mm/min. Fix the crimped contact, axial pull out force on the contact in the housing at a rate less than 25 mm/min. GB/T5095.8 Method 16d / EIA-364-08B	AWG 28: 10N Min. AWG 26: 20N Min. AWG 24: 30N Min. AWG 22: 40N Min.
6.1.5	机械振动 Random Vibration	插合连接器, 串联在一直流电源上, 电流100mA; 并模拟正常工作状态; 振频为 (10~55~10) Hz, 每个循环时间为1分钟, 振幅1.52mm. 沿XYZ三轴正反方向各循环2h。 Mate connectors subjected them to following vibration conditions, for a period of 2 hours in each of 3 mutually perpendicular axes, 100 mA current shall be applied. Frequency: (10~55~10) HZ/min. Amplitude: 1.52mm GB/T 5095.4 Method 6d / EIA-364-28D	外观: 无损伤 (参照6.1.1) Appearance: No damage.(refer to 6.1.1) 接触电阻: 0.02Ω Max. Contact resistance: 0.02Ω Max. 中断: 1μsec Max.

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6.1.6	机械冲击 Shock	连接器相配，沿XYZ三轴正反方向各冲击3次(总共18次)，在测试过程中通以100mA电流。 冲击强度：490m/s ² 持续时间：11ms Mate connectors and subject them to the following shock conditions, 3 times of shock shall be applied for each 6 directions along 3 mutually perpendicular axes, passing DC 100mA current during the test.(Total of 18 shocks) Test Pulse: : 490m/s ² Duration: 11ms GB/T 5095.4 Method 6c / EIA-364-27B	外观：无损伤（参照6.1.1） Appearance: No damage.(refer to 6.1.1) 中断：1μsec Max. <1μsec discontinuity
6.1.7	机械寿命 Durability	以每分钟 10 次的速度插拔 50 次。 Fifty cycles for mating and unmating test at the speed of 10 cycles per minute GB/T 5095.5 Method 9a / EIA-364-09C	外观：无损伤（参照6.1.1） Appearance: No damage.(refer to 6.1.1) 接触电阻：0.02Ω Max. Contact resistance: 0.02Ω Max.

6.2 电气性能 Electrical

序号 No.	项 目 Item	测试条件 Test Condition	规格 Requirement
6.2.1	接触电阻 Contact Resistance	插配阴阳连接器后,用小功率电路进行测试 Mate connectors with dry circuit to test Contact Resistance GB/T 5095.2 Method 2a / EIA-364-23B	0.01 Ω Max. (Initial) 0.02 Ω Max. (Final)
6.2.2	绝缘电阻 Insulation Resistance	在相邻接触件之间或地线之间,用 500V DC 电压进行测试。 Apply a voltage of 500V DC between adjacent contacts and between contacts to ground. GB/T 5095.2 Method 3a / EIA-364-21C	1000 MΩ Min. (Initial) 500 MΩ Min. (Final)
6.2.3	耐电压 Withstand Voltage	相邻接触件之间或地线之间施加 1000V AC (有效值),漏电流 1mA 的电压作用,时间 1min. Apply a voltage of AC 1000V for 1 minute between adjacent contacts and between contacts to ground. GB/T 5095.2 Method 4a / EIA-364-20B	外观：无击穿和飞弧现象 Appearance: No Breakdown or flashover
6.2.4	温升 Temperature Rise	插合连接器，通以最大允许电流，测温度的差值 Mate connectors and measure the temperature rise of contact when the maximum AC rated current is passed. GB/T 5095.3 Method 5a / EIA-364-70A	Δ60℃ Max.

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6.3 环境性能 Environmental

序号 No.	项 目 Item	测试条件 Test Condition	规 格 Requirement
6.3.1	耐高温 Heat Resistance	连接器配合后，于 85±2℃ 的空气中放置 240 小时，再回到室温中放置 1-2 小时测定 Mated connectors exposed to the condition of 85±2℃ for 240 hours. Recovery time 1~2 hours GB/T 5095.6 Method 11i / EIA-364-17B	外观：无损伤（参照6.1.1） Appearance: No damage.(refer to 6.1.1) 接触电阻： 0.02Ω Max. Contact resistance: 0.02Ω Max. 绝缘电阻： 500 MΩ Min. Insulation Resistance : 500 MΩ Min. 耐电压： 750V Min. Withstand Voltage: 750V Min.
6.3.2	耐低温 Cold Resistance	连接器配合后，于-25±2℃的空气中放置 240 小时，再回到室温中放置 1-2 小时测定（新开发产品温度设置为使用温度范围下限，建议放置时间 48h） Mated connectors exposed to the condition of -25±2℃ for 240 hours. Recovery time 1~2 hours GB/T 5095.6 Method 11j / EIA-364-17B	外观：无损伤（参照6.1.1） Appearance: No damage.(refer to 6.1.1) 接触电阻： 0.02Ω Max. Contact resistance: 0.02Ω Max. 绝缘电阻： 500 MΩ Min. Insulation Resistance : 500 MΩ Min. 耐电压： 750V Min. Withstand Voltage: 750V Min.
6.3.3	恒定湿热 Humidity	温度 40±2℃， 相对湿度(90~95)% 搁置时间 240h，取出恢复 1~2h 后检查. Mated connectors exposed to the condition of temperature 40±2℃， humidity (90~95)% for 240 hours. Recovery time 1~2 hours GB/T 5095.6 Method 11c /EIA-364-31B	外观：无损伤（参照6.1.1） Appearance: No damage.(refer to 6.1.1) 接触电阻： 0.02Ω Max. Contact resistance: 0.02Ω Max. 绝缘电阻： 500 MΩ Min. Insulation Resistance : 500 MΩ Min. 耐电压： 750V Min. Withstand Voltage: 750V Min.
6.3.4	温度循环 Temperature Cycling	把试验样品分别放入高、低温试验箱中，按下列步骤调试温度： a) 在(-55±2)℃的恒温条件下放置 0.5h; b) 在(85±2)℃的恒温条件下放置 0.5h; 从 a)到 b)为一个循环，周期温度转换时间应不大于 5 分钟，共进行 25 个循环,恢复 1~2h 后检查。 Mated connectors shall be tested under the following conditions Temperature °C Duration (Minutes) 1 -55	

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6.3.6	可焊性 Solderability	把试验样品需要焊接的部位浸入焊锡炉中，锡炉温度(245±5)℃，时间(4~5)s Dip solder tails into the molten solder held at (245±5) °C for ((4~5) sec. EIA-364-52	上锡率≥90%: Solder coverage: ≥90%
6.3.7	耐焊接热 Resistance to Soldering Heat	耐波峰焊热：把试验样品需要焊接的部位浸入焊锡炉中，锡炉温度(260±5)℃；时间(5±1)s后，在正常条件下恢复1~2h。 手工焊接：温度350±10℃，时间1-2 seconds Resistance to Wave Soldering Heat : Dip solder tails into the molten solder held at (260±5) °C for (5 ±1) sec., Recovery time 1~2 hours Manual soldering : 350±10℃for 1-2 seconds	外观：无损伤（参照6.1.1） Appearance: No damage.(refer to 6.1.1)

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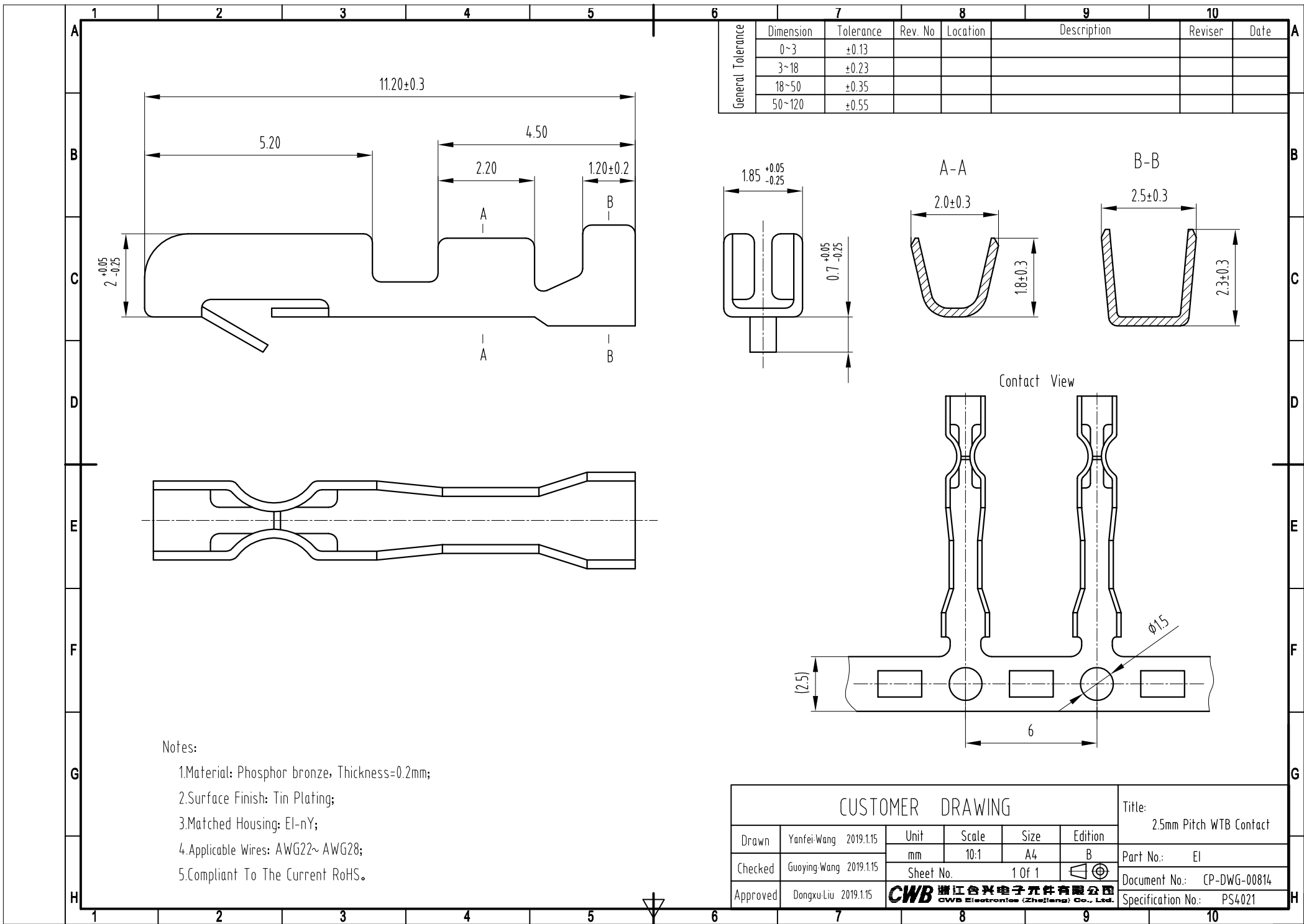
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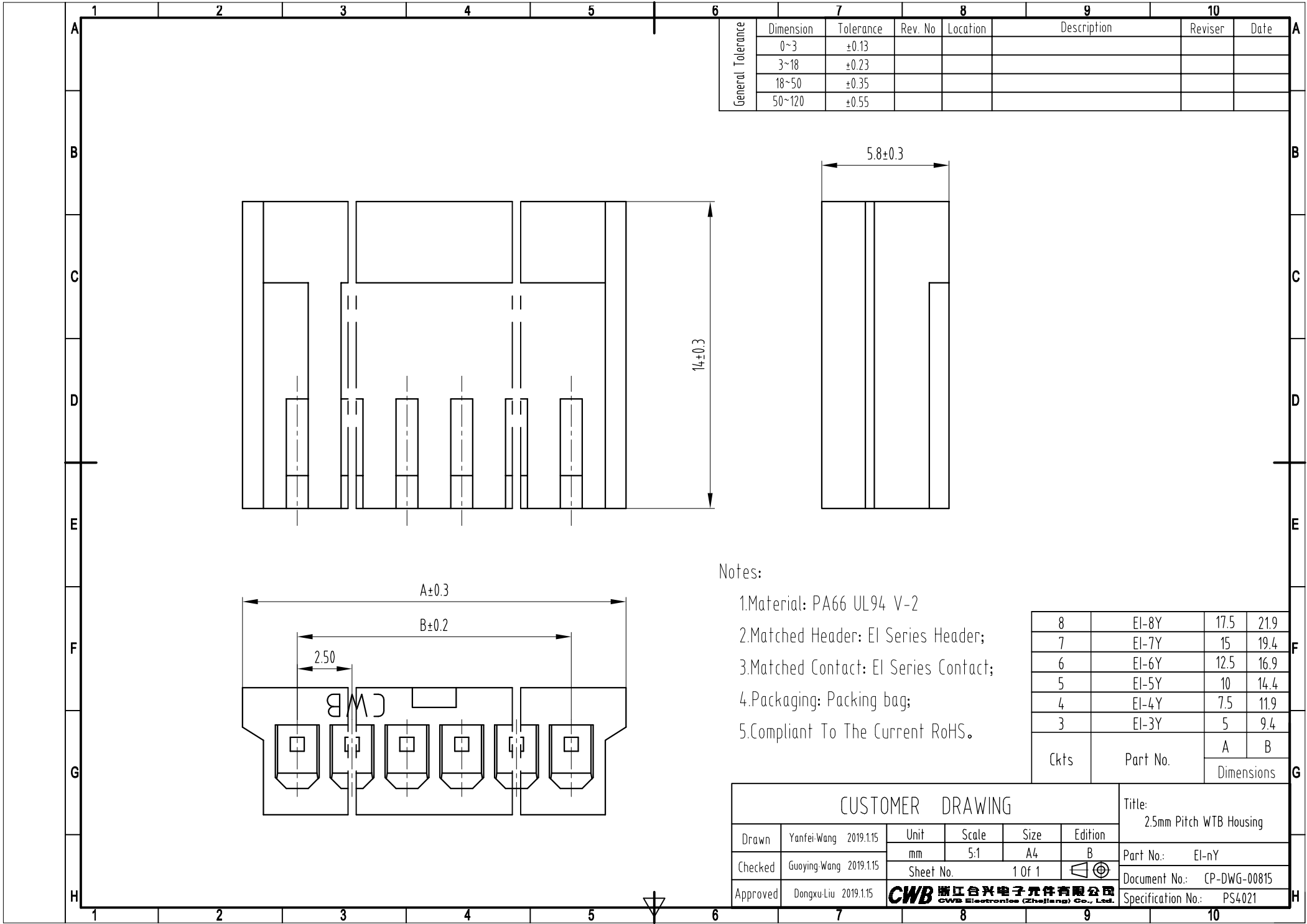
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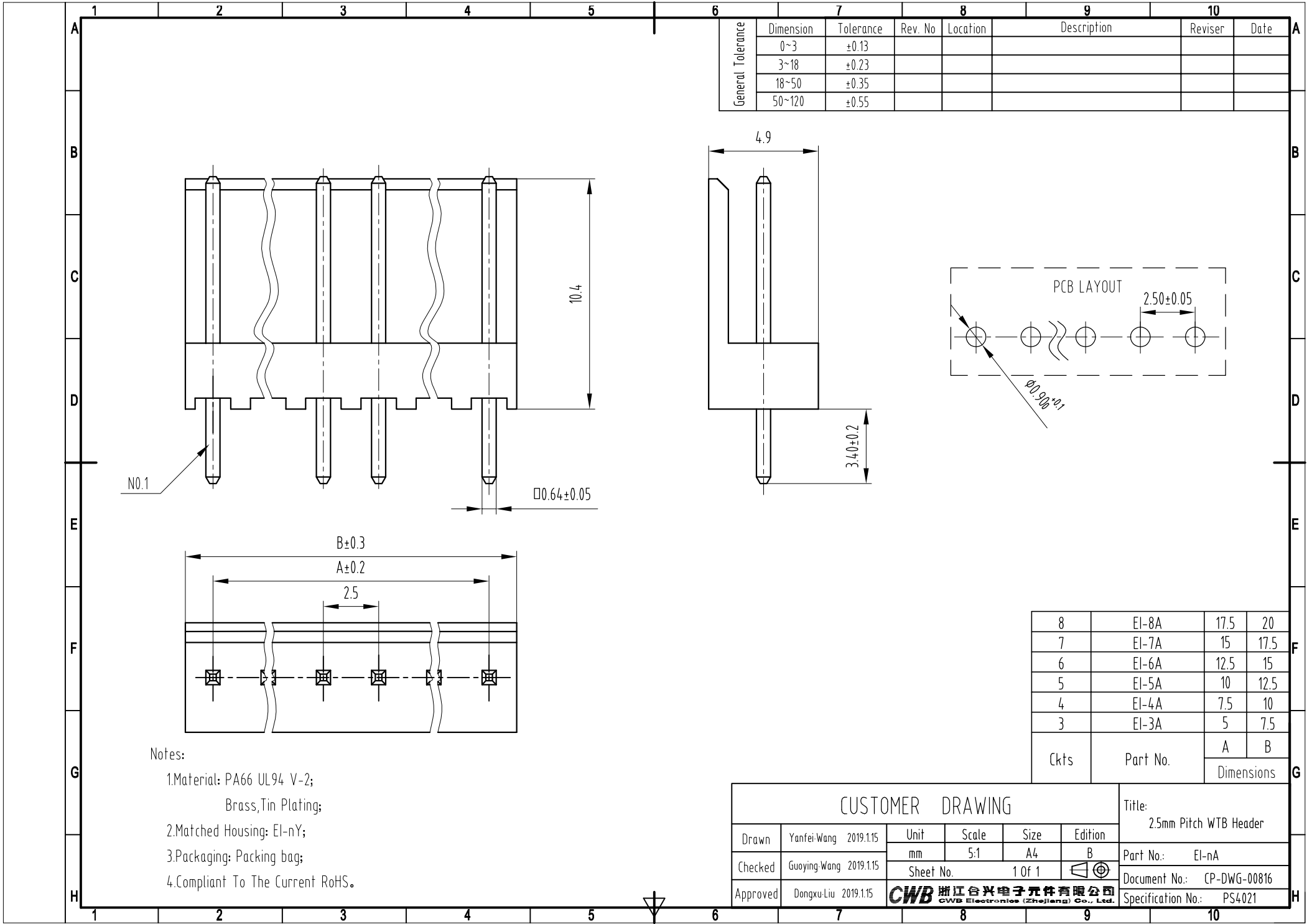
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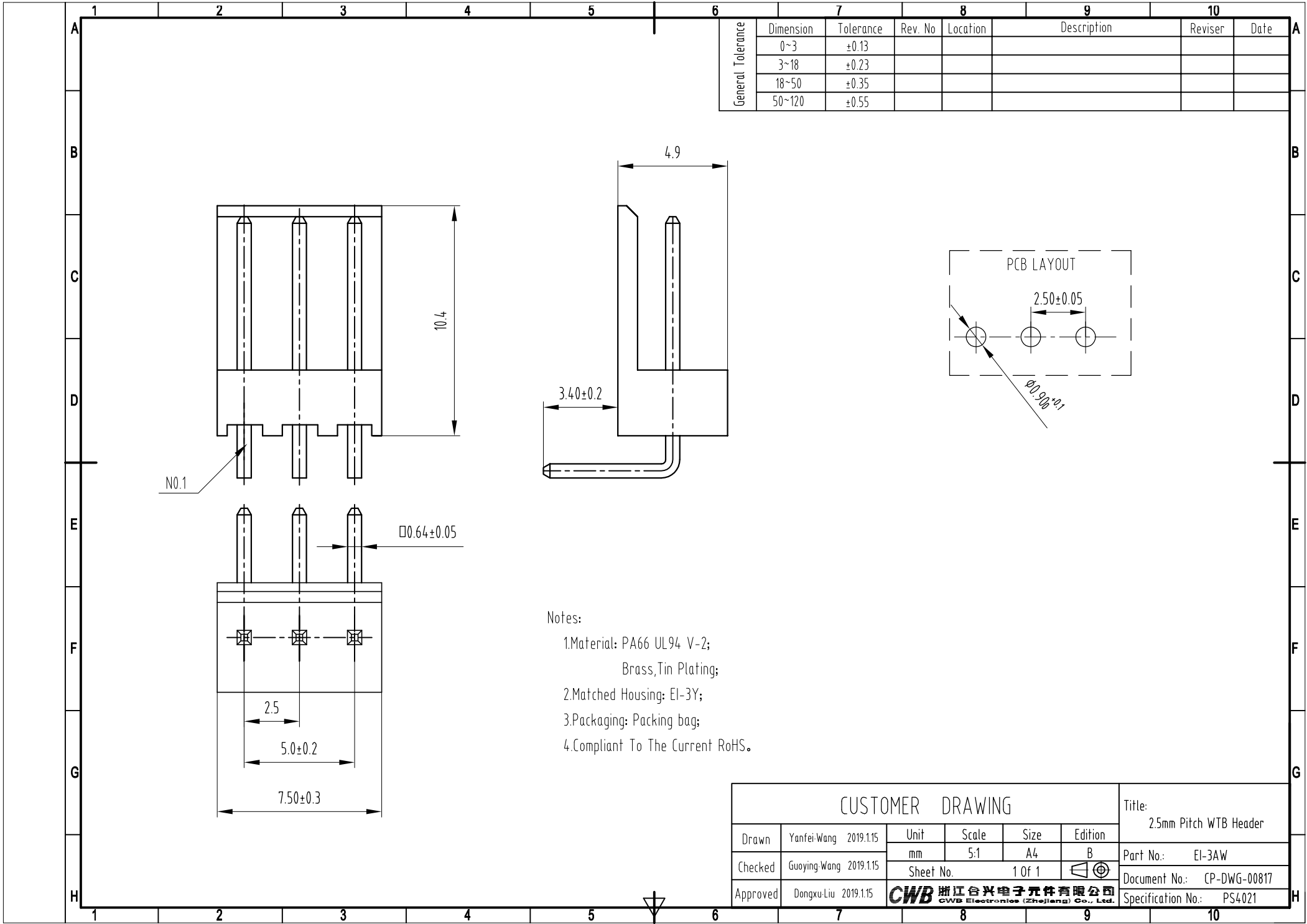
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外观 Appearance	1	1	1	1,5	1,3	1,7	1	1,7	1,7	1,7	1,7	1,5	1	1,3
端子的固定力 Retention Force for contact	2													
针的固定力 Retention Force for Pin		2												
压着部位抗张强度 Crimping Pull Out Force			2											
机械振动 Random Vibration				3										
机械冲击 Shock					2									
机械寿命 Durability						5								
接触电阻 Low Level Contact Resistance				2,4		2,6		2,6	2,6	2,6	2,6	2,4		
绝缘电阻 Insulation Resistance						3		3	3	3	3			
耐电压 Withstand Voltage						4		4	4	4	4			
温升 Temperature Rise							2							
耐高温 Heat Resistance								5						
耐低温 Cold Resistance									5					
恒定湿热 Humidity										5				
温度循环 Temperature Cycling											5			
盐雾 Salt Spray												3		
可焊性 Solderability													2	
耐焊接热 Resistance to Soldering Heat														2

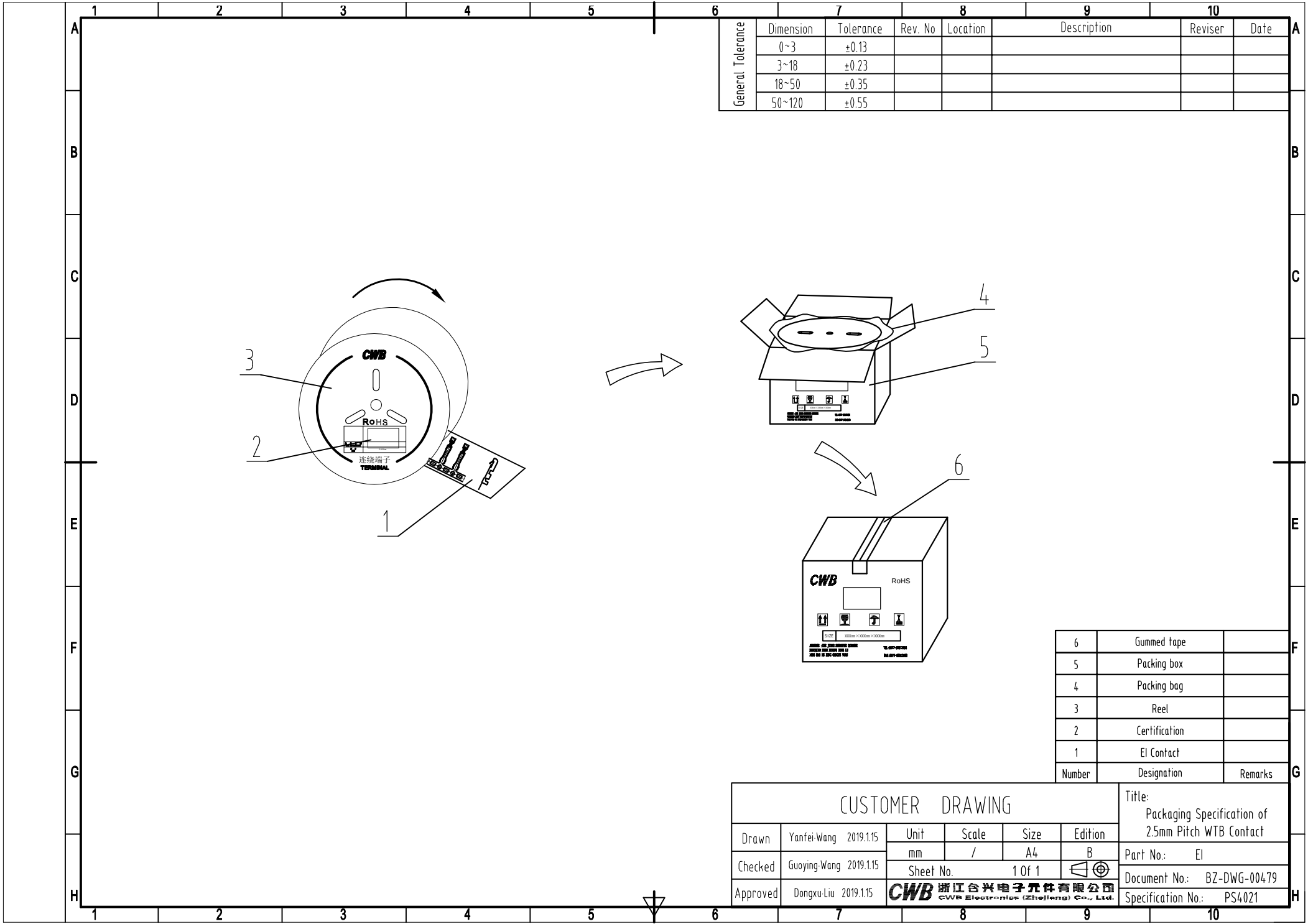
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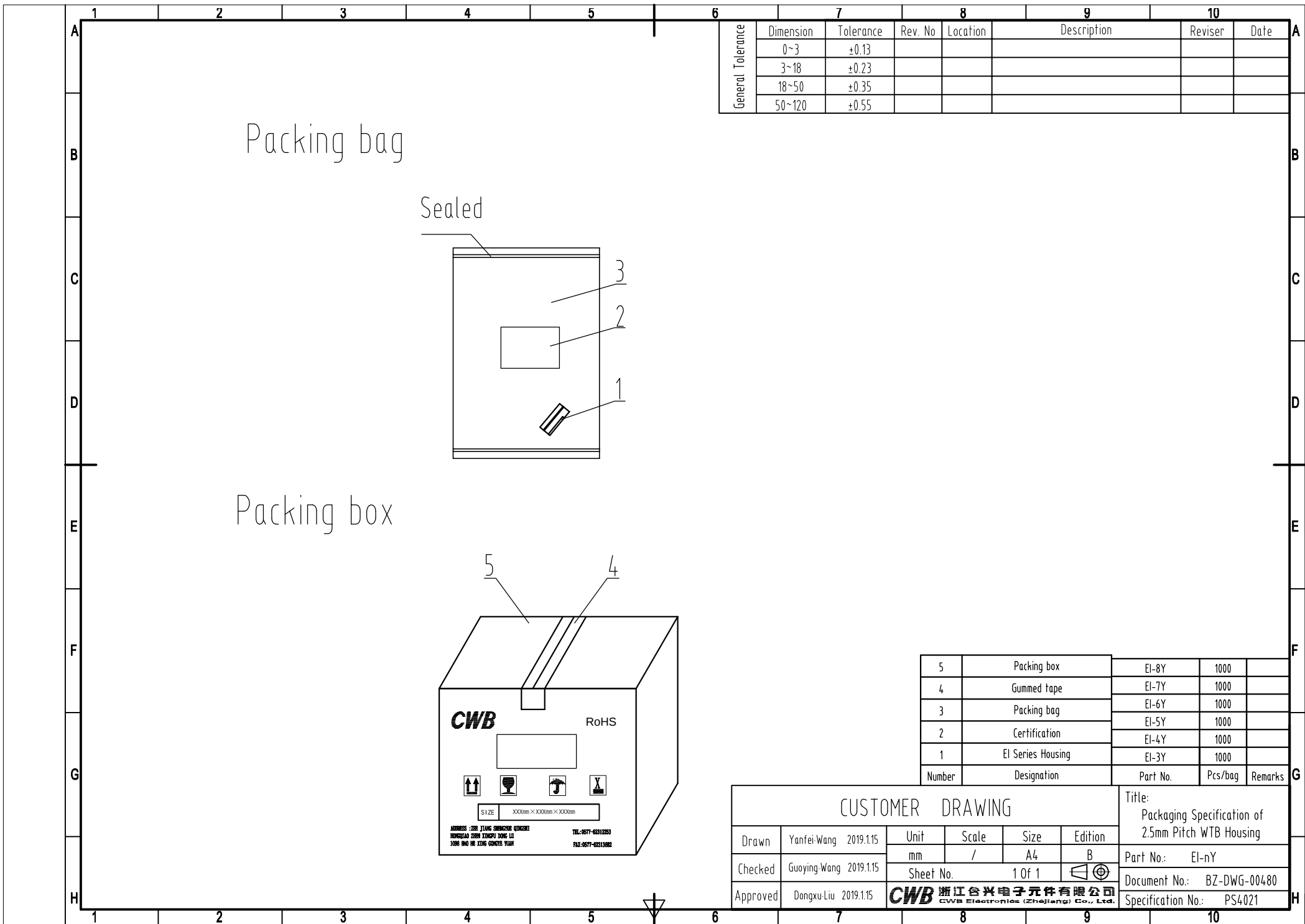


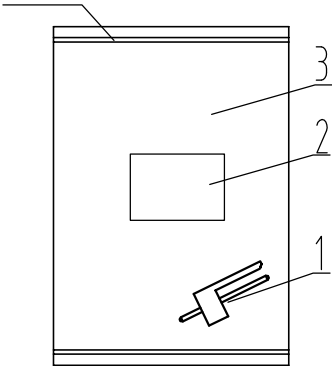
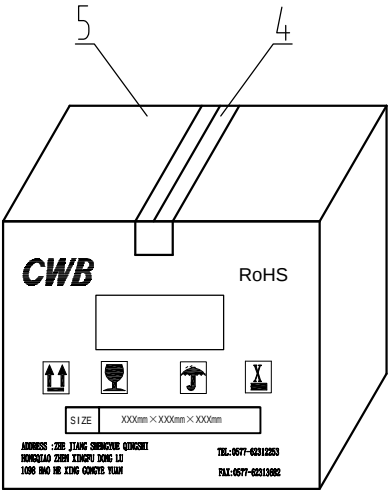


General Tolerance	Dimension	Tolerance	Rev. No	Location	Description	Reviser	Date
	0~3	±0.13					
	3~18	±0.23					
	18~50	±0.35					
	50~120	±0.55					

6	Gummed tape	
5	Packing box	
4	Packing bag	
3	Reel	
2	Certification	
1	EI Contact	
Number	Designation	Remarks

CUSTOMER DRAWING							Title: Packaging Specification of 2.5mm Pitch WTB Contact	
Drawn	Yanfei-Wang	2019.1.15	Unit	Scale	Size	Edition	Part No.: EI	
Checked	Guoying-Wang	2019.1.15	mm	/	A4	B		
			Sheet No.		1 Of 1		Document No.: BZ-DWG-00479	
Approved	Dongxu-Liu	2019.1.15	CWB 浙江合兴电子元件有限公司 CWB Electronics (Zhejiang) Co., Ltd.					
							Specification No.: PS4021	



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A						<table><tr><td rowspan="5">General Tolerance</td><td>Dimension</td><td>Tolerance</td><td>Rev. No</td><td>Location</td><td>Description</td><td>Reviser</td><td>Date</td></tr><tr><td>0~3</td><td>±0.13</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3~18</td><td>±0.23</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>18~50</td><td>±0.35</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>50~120</td><td>±0.55</td><td></td><td></td><td></td><td></td><td></td></tr></table>						General Tolerance	Dimension	Tolerance	Rev. No	Location	Description	Reviser	Date	0~3	±0.13						3~18	±0.23						18~50	±0.35						50~120	±0.55						A			
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E	Packing box										E																																								
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G	<table><tr><td>5</td><td>Packing box</td><td>EI-3AW</td><td>1000</td><td></td></tr><tr><td>4</td><td>Gummed tape</td><td>EI-8A</td><td>1000</td><td></td></tr><tr><td>3</td><td>Packing bag</td><td>EI-7A</td><td>1000</td><td></td></tr><tr><td>2</td><td>Certification</td><td>EI-6A</td><td>1000</td><td></td></tr><tr><td>1</td><td>EI Series Header</td><td>EI-5A</td><td>1000</td><td></td></tr><tr><td></td><td></td><td>EI-4A</td><td>1000</td><td></td></tr><tr><td></td><td></td><td>EI-3A</td><td>1000</td><td></td></tr><tr><td>Number</td><td>Designation</td><td>Part No.</td><td>Pcs/bag</td><td>Remarks</td></tr></table>										5	Packing box	EI-3AW	1000		4	Gummed tape	EI-8A	1000		3	Packing bag	EI-7A	1000		2	Certification	EI-6A	1000		1	EI Series Header	EI-5A	1000				EI-4A	1000				EI-3A	1000		Number	Designation	Part No.	Pcs/bag	Remarks	G
5	Packing box	EI-3AW	1000																																																
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H	<table><tr><td colspan="6">CUSTOMER DRAWING</td><td colspan="2">Title: Packaging Specification of 2.5mm Pitch WTB Header</td></tr><tr><td>Drawn</td><td>Yanfei-Wang</td><td>2019.1.15</td><td>Unit</td><td>Scale</td><td>Size</td><td>Edition</td><td colspan="2">Part No.: EI-A</td></tr><tr><td>Checked</td><td>Guoying-Wang</td><td>2019.1.15</td><td>mm</td><td>/</td><td>A4</td><td>B</td><td colspan="2">Document No.: BZ-DWG-00481</td></tr><tr><td>Approved</td><td>Dongxu-Liu</td><td>2019.1.15</td><td colspan="2">Sheet No.</td><td colspan="2">1 Of 1</td><td colspan="2">Specification No.: PS4021</td></tr></table>										CUSTOMER DRAWING						Title: Packaging Specification of 2.5mm Pitch WTB Header		Drawn	Yanfei-Wang	2019.1.15	Unit	Scale	Size	Edition	Part No.: EI-A		Checked	Guoying-Wang	2019.1.15	mm	/	A4	B	Document No.: BZ-DWG-00481		Approved	Dongxu-Liu	2019.1.15	Sheet No.		1 Of 1		Specification No.: PS4021		H					
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