

标题: TJC1501 系列连接器

Title: TJC1501 Connector

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中国·浙江省乐清市虹桥镇幸福东路 1098 号 合兴工业园 1098, Xingfu `Road(East), CWB Industrial Zone, Hongqiao, Yueqing, Zhejiang 325608, China Tel: 86-577-61313157 (Research & Development Dept.) Tel: 86-577-62312253 (Sales Dept.)	制定 Edit: <u>汪乃浩 2022.3.19</u>	产品名称 <u>Product name:</u> <u>TJC1501 系列</u>
	审核 Check: <u>许李俊 2023.22</u>	编号 <u>Document No.:</u> <u>PS3473</u>
	批准 Approval: <u>刘冬旭 2023.22</u>	版本 <u>Revision:</u> <u>V3</u>



产品规格书

PRODUCT SPECIFICATION

1.更改履历 Change record

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
V0	/	初版发放 First release	张玲玲 2019/01/12
V1	/	根据最新的产品命名规则更新规格书 Update specifications and part no according to new naming specifications	汪乃浩 2022/03/19 Naihao.wang2022/3/19
V2	/	新增 TJC1501-13A 塑件和 CZ-TJC1501B 端子 Added TJC1501-13A plastic parts and CZ-TJC1501B terminals	尹恒 Heng.Yin 2023.3.22
V3	/	更新端子压接不同型号导线的额定电流 Updated the rated current of the terminals crimping different types of wires	胡杰斌 2023/4/8

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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 1.5mm 间距直插式连接器，产品名称：TJC1501 系列连接器。

This product specification covers the requirement for 1.5mm pitch board-in crimp connector, which are designed and manufactured by CWB Electronics(ZheJiang) Co.,LTD. P/N: TJC1501 Connector.

3.产品描述 Product description

TJC1501 系列产品为家电连接器产品，产品部件组成如下：

The TJC1501 series connector designed for home appliances connection. part checklist as following form:

零件名称 Part name	规格型号 Part No.	曾用规格型号 Previous part No.	描述 Description
插针 Pin contact	CZ-TJC1501-C*	TJC1501 插针	AWG#30~AWG # 26
插针 Pin contact	CZ-TJC1501B-C*	/	AWG#30~AWG # 26
孔座 Housing	TJC1501-nA(**-*)	TJC1501-nA	PA66+GF UL94V-2/ PA66 UL94V-0

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，以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，以本规格书要求为优先。

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 环境试验 概述和指南

Environmental testing —— General and guidance

GB/T 2423 环境试验 试验方法

Environmental testing —— Test methods

GB/T 2424 环境试验 支持文件及导则

Environmental testing —— Supporting documentation and guidance

GB/T 5095 电子设备用机电元件基本试验规程及测量方法

Electromechanical components for electronic equipment Basic testing procedures and measuring methods

EIA-364 EIA-364 系列标准

EIA-364 series standards

IPC EIA IPC JEDEC J STD 002E 连接器 / 插座终端可焊性测试方法

Solderability Tests for Component Leads, Terminations, Lugs, Terminals and Wires

产品符合 RoHS 标准。

The product should comply with RoHS.

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产品规格书

PRODUCT SPECIFICATION

5.参数范围 Parameter ratings:

额定电流 [AC(有效值)/DC] Rated current [AC(rms)/DC]	AWG # 26 0.7A Max.	AWG # 28 0.6A Max.	AWG # 30 0.5A Max.
适用 PCB 板 Applicable PCB	Board thickness:1.2mm-1.6mm Hole diameter:φ0.85(+0.1/-0) mm		
额定电压[AC(有效值)/DC] Rated voltage [AC(rms)/DC]	50V		
使用温度范围（包含温升） Operating temperature range (include temperature rise)	-25℃~+85℃		
适用线型（具体适用线型请参考压接规格书） Applicable wires(Please refer to the crimping specification for details)	Wire size: AWG#30~AWG#26(0.05mm ² -0.13 mm ²) Insulation diameter: φ 1.15mm- φ 1.3mm		

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 5095.2 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	端子固定力 Retention force for contact	应测量将端子沿轴线方向拔出孔座的力，测试速度不大于 25 mm/min.。 The force of pulling the contact out of the housing along the axis shall be measured (Testing speed: <25 mm/min.) GB/T 5095.8 Method 15d / EIA-364-29B	10N Min
6.1.3	压着部位抗张强度 Crimp tensile strength	在已压接端子的头部和导线上施加拉力，并测量将导线从端子拉出或导线断裂所需的力，测试速度不大于 25 mm/min.。 Pulling load shall be applied to a correctly crimped contact and a wire. The load required to pull the wire out of the contact or break the wire shall be measured. (Testing speed: <25 mm/min.) GB/T5095.8 Method 16d / EIA-364-08B	AWG#30: 8N Min. AWG#28: 10N Min. AWG#26: 20N Min.

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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	绝缘电阻 Insulation resistance	在相邻接触件之间或地线之间,用 500 V DC 电压进行测试。 Apply a voltage of 500 V 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)
6.2.2	耐电压 Withstand voltage	相邻接触件之间或地线之间施加 500 V AC (有效值),漏电流 1 mA 的电压作用,时间 1min.。 Apply a voltage of 500 V AC (rms) and leakage current of 1 mA between adjacent contacts or ground cables for 1 minute. GB/T 5095.2 Method 4a / EIA-364-20B	外观: 无击穿和飞弧现象 Appearance: no breakdown or flashover

6.3 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) °C 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) °C 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) 绝缘电阻: 500 MΩ Min. Insulation resistance:500 MΩ Min. 耐电压: 500V Min. Withstand voltage: 500V Min.															
6.3.2	耐低温 Cold resistance	连接器配合后, 于 (-25±2) °C 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 (-25±2) °C for 240hours, recovery time (1~2) hours GB/T 5095.6 Method 11j / EIA-364-17B (无特殊要求时高温试验选用-40°C)	外观: 无损伤 (参照6.1.1) Appearance: no damage.(refer to 6.1.1) 绝缘电阻: 500 MΩ Min. Insulation resistance:500 MΩ Min. 耐电压: 500V Min. Withstand voltage: 500V Min.															
6.3.3	恒定湿热 Humidity	温度(40±2) °C , 相对湿度(90~95) % , 搁置时间 240 小时, 取出恢复 (1~2) 小时后检查。 Mated connectors exposed to the condition of temperature (40±2) °C, 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) 绝缘电阻: 500 MΩ Min. Insulation resistance:500 MΩ Min. 耐电压: 500V Min. Withstand voltage: 500V 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) °C 的恒温条件下放置 0.5 小时; b) 在(85±2) °C 的恒温条件下放置 0.5 小时; 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 (1~2) 小时后检查。 Mated connectors shall be tested under the following conditions <table><tr><th></th><th>Temperature °C</th><th>Duration</th></tr><tr><td>1</td><td>-55±2</td><td>0.5 h</td></tr><tr><td>2</td><td>Room Temp.</td><td>5 minutes Max.</td></tr><tr><td>3</td><td>+85±2</td><td>0.5 h</td></tr><tr><td>4</td><td>Room Temp.</td><td>5 minutes Max.</td></tr></table> Step 1 to 4 is one cycle,25 cycles shall be tested, recovery time (1~2) hours GB/T 5095.6 method 11d / EIA-364-32C		Temperature °C	Duration	1	-55±2	0.5 h	2	Room Temp.	5 minutes Max.	3	+85±2	0.5 h	4	Room Temp.	5 minutes Max.	外观: 无损伤 (参照6.1.1) Appearance: no damage.(refer to 6.1.1) 绝缘电阻: 500 MΩ Min. Insulation resistance:500 MΩ Min. 耐电压: 500V Min. Withstand voltage: 500V Min.
	Temperature °C	Duration																
1	-55±2	0.5 h																
2	Room Temp.	5 minutes Max.																
3	+85±2	0.5 h																
4	Room Temp.	5 minutes Max.																

产品名称
Product name

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6.3.5	盐雾 Salt spray	把试验样品从试验箱顶悬挂下来,采用浓度为 $(5\pm 1)\%$ (质量百分比)的氯化钠溶液,在 $(35\pm 2)^{\circ}\text{C}$ 温度下连续雾化 48 小时,试验后用流动的蒸馏水轻轻洗去表面沉积物。在常温常湿条件下恢复(1~2)小时。 48 hours spray, at temp $(35\pm 2)^{\circ}\text{C}$, NaCl mist concentration $(5\pm 1)\%$. After test wash parts and put it into room ambient for (1~2) hours GB/T 5095.6 Method 11f / EIA-364-26B	外观:无损伤(五金件应无露出底金属的严重锈蚀;使用预镀好的型材,其落料面允许有不影响其性能的轻微腐蚀。) Appearance: no damage (no erosion on material exposed, and plating material, slight erosion on the cutting surface is acceptable)
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 $(245\pm 5)^{\circ}\text{C}$,时间 $(4\sim 5)$ 秒。 Dip solder tails into the molten solder held at $(245\pm 5)^{\circ}\text{C}$ for $(4\sim 5)$ seconds IPC EIA IPC JEDEC J STD 002E	上锡率 $\geq 90\%$: Solder coverage: $\geq 90\%$
6.3.7	耐焊接热 Resistance to soldering heat	1.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 $(260\pm 5)^{\circ}\text{C}$;时间 (5 ± 1) 秒后,在正常条件下恢复(1~2)小时。(温度曲线见图1) 2.手工焊接:温度 $(350\pm 10)^{\circ}\text{C}$,时间 $(1\sim 2)$ seconds。 1. Resistance to wave soldering heat: Dip solder tails into the molten solder held at $(260\pm 5)^{\circ}\text{C}$ for (5 ± 1) seconds, recovery time (1~2) hours. (The temperature curve is shown in Figure 1) 2. Manual soldering: $(350\pm 10)^{\circ}\text{C}$ for (1~2) seconds	外观:无损伤(参照6.1.1) Appearance: no damage.(refer to 6.1.1)

Pb-free Wave soldering Temperature profile



图中: $T_1 > 150^{\circ}\text{C}$ $T_2 > 220^{\circ}\text{C}$ $T_3 = 230^{\circ}\text{C} \pm 2^{\circ}\text{C}$ $T_4 > 230^{\circ}\text{C}$ $T_5 < 100^{\circ}\text{C}$
 $dT_1 < 5^{\circ}\text{C}$ $dT_2 < 15^{\circ}\text{C}$ $t_1 > 60\text{s}$ $t_2 + t_3 > 3\text{s} \sim 5\text{s}$ $T_3 - T_1 < 100^{\circ}\text{C}$

图1 波峰焊曲线图

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产品规格书

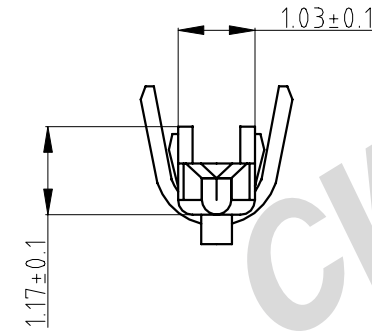
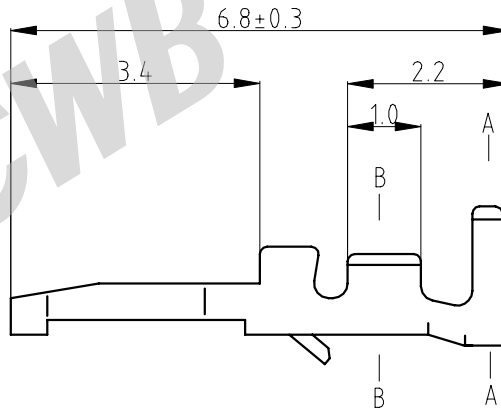
PRODUCT SPECIFICATION

7.测试分组 Test sequences (Samples:5PCS)

测试组 Group number	A	B	C	D	E	F	G	H	I	J	K
外观 Appearance	1	1	1	1,3	1,6	1,6	1,6	1,6	1,3	1,3	1,3
端子固定力 Retention force for contact	2										
压着部位抗张强度 Crimp tensile strength		2									
绝缘电阻 Insulation resistance			2,3		2,4	2,4	2,4	2,4			
耐电压 Withstand voltage				2	5	5	5	5			
耐高温 Heat resistance					3						
耐低温 Cold resistance						3					
恒定湿热 Humidity							3				
温度循环 Temperature cycling								3			
盐雾 Salt spray									2		
可焊性 Solderability										2	
耐焊接热 Resistance to soldering heat											2

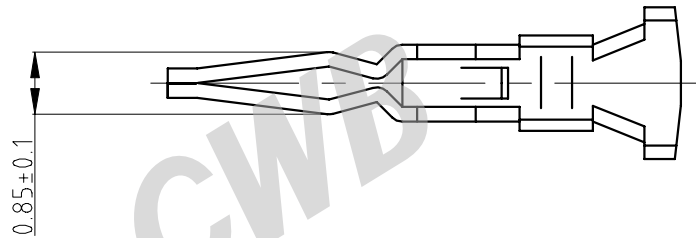
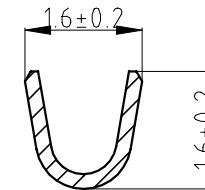
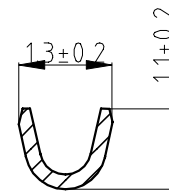
产品名称 Product name	TJC1501 系列连接器	编号 Document No.	PS3473	版本号 Version No.	V3
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General tolerance	Dimension	Tolerance	Rev. No	Location	Description	Reviser	Date
	0~3	±0.13					
	3~18	±0.23					
	18~50	±0.35					
	≥50	±0.55					



B-B

A-A

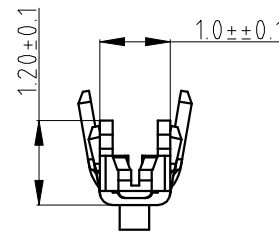
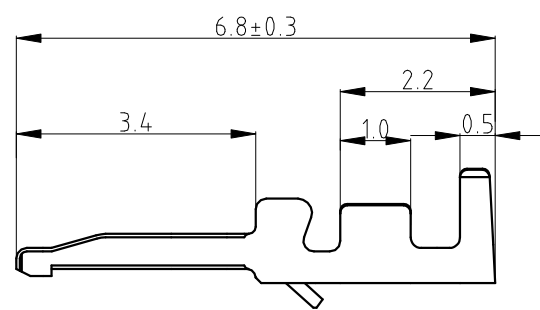
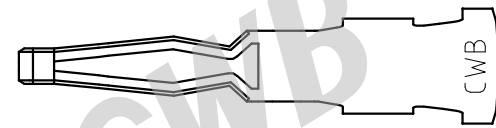


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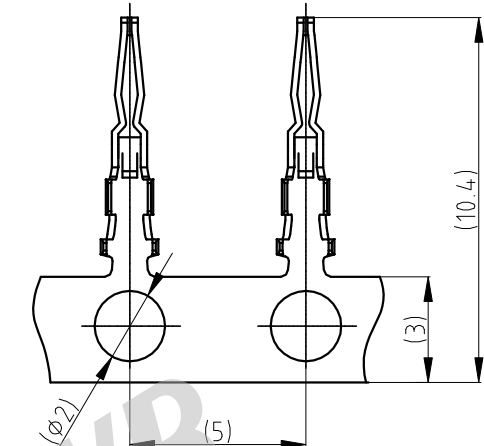
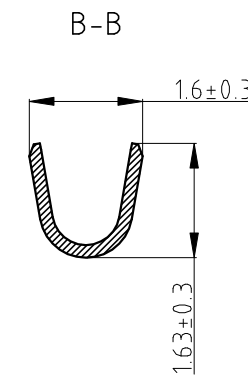
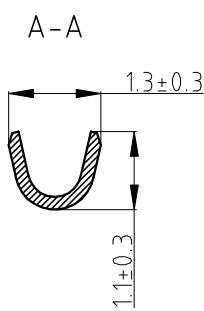
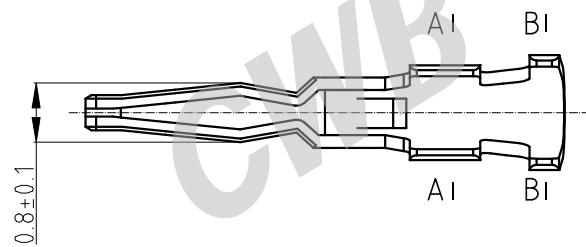
- 1.Material: Phosphor bronze,thickness=0.2mm
- 2.Surface finish: tin plated
- 3.Matched housing: TJC1501-nA
- 4.Applicable wires:AWG#26 ~ AWG#30
- 5.Compliant to the current RoHS

CUSTOMER DRAWING							Title: 15mm pitch Contact	
Drawn	Qu.Wang	2021.8.25	Unit	Scale	Size	Edition	Part No.: CZ-TJC1501-C*	
Checked	Qu.Wang	2022.1.15	mm	10:1	A4	B1	Previous part No.: TJC1501 插针	
			Sheet No.		1 Of 1			Document No.: CP-DWG-01494
Approved	Dongxu.Liu	2022.1.15	CWB				Specification No.: PS3473	

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



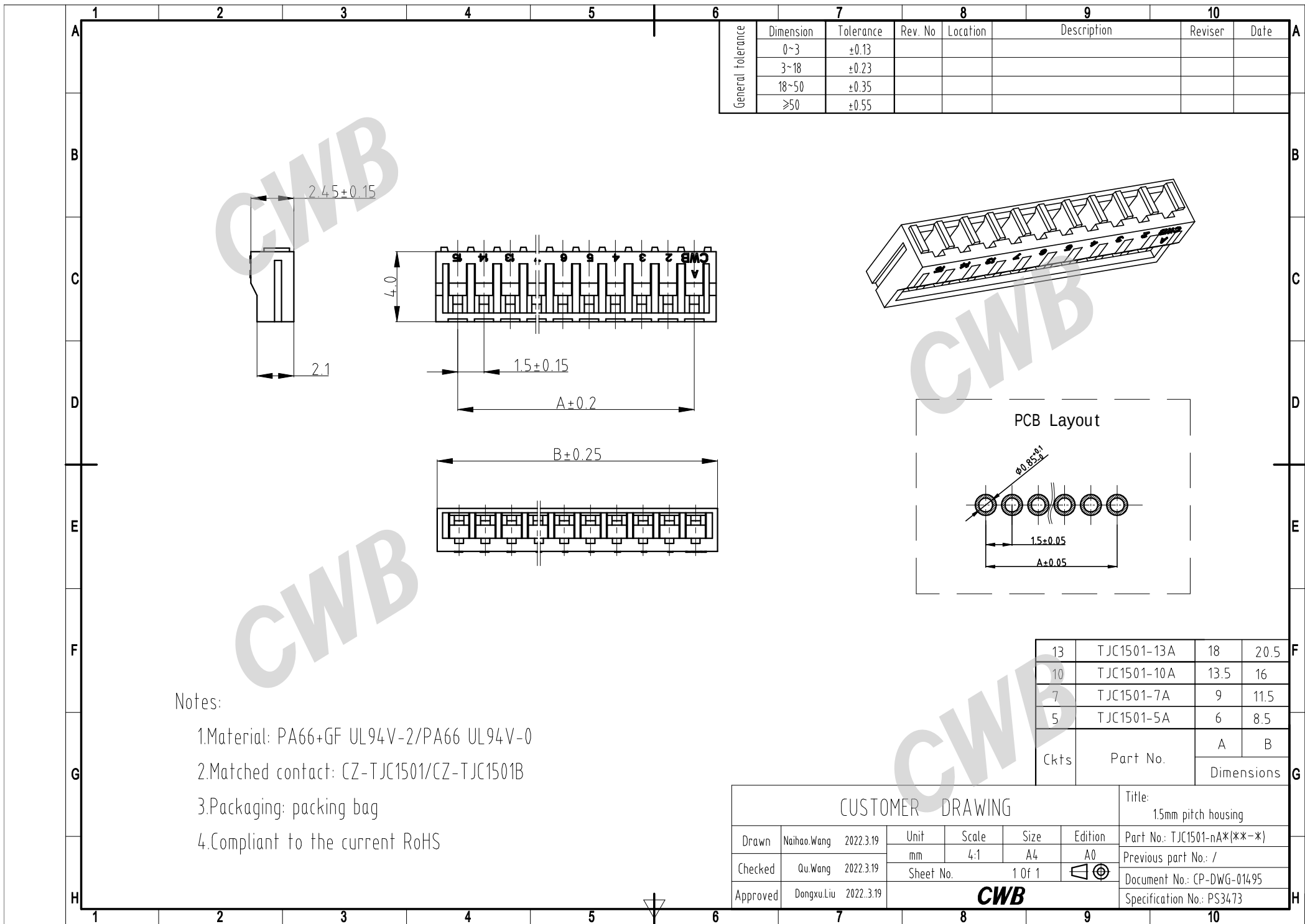
Contact View
1:2



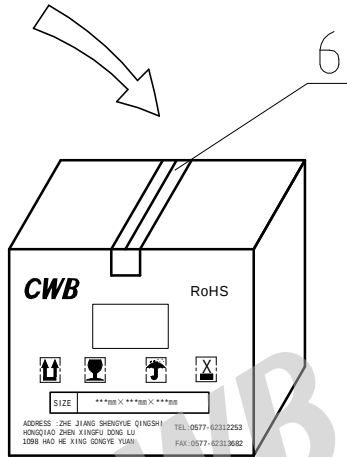
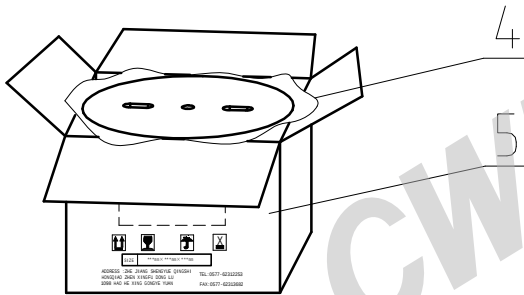
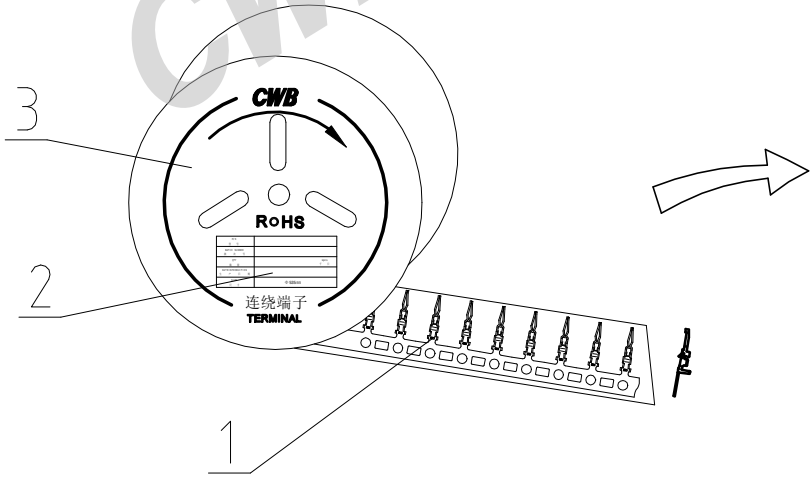
Notes:

- 1.Material: Phosphor bronze,thickness=0.18mm
- 2.Surface finish: tin plated
- 3.Matched housing: TJC1501-nA
- 4.Applicable wires:AWG#26~ AWG#30
- 5.Compliant to the current RoHS

CUSTOMER DRAWING						Title: 15mm pitch Contact	
Drawn	Heng.Yin	2023.3.18	Unit	Scale	Size	Edition	Part No.: CZ-TJC1501B-C*
Checked	Xujun.Li	2023.3.18	mm	10:1	A4	B	Previous part No.: /
			Sheet No.		1 Of 1		Document No.: CP-DWG-01699
Approved	Dongxu.Liu	2023.3.18	CWB				Specification No.: PS3473



	1	2	3	4	5	6	7	8	9	10					
A						General Tolerance		Dimension	Tolerance	Rev.No	Location	Description	Reviser	Date	A
								0~3	±0.13						
								3~18	±0.23						
								18~50	±0.35						
								≥50	±0.55						
B															B
C															C
D															D
E															E
F															F
G															G
H															H

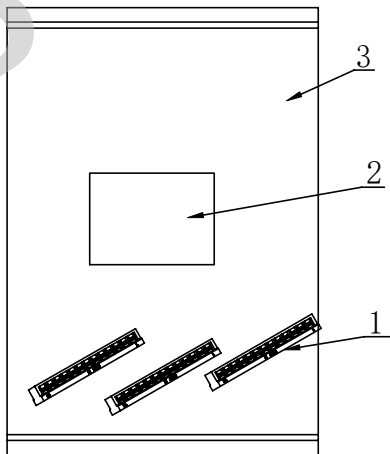


6	Gummed tape	
5	Packing box	
4	Packing bag	
3	Reel	
2	Certificate	
1	CZ-TJC1501B-C	20Kpcs/reel
	CZ-TJC1501-C	
Number	Designation	Remarks

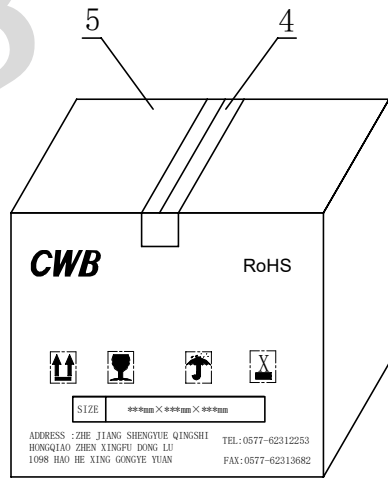
CUSTOMER DRAWING						Title: Packaging specification	
Drawn	Naihao.Wang	2022.3.19	Unit	Scale	Size	Edition	Part No.: CZ-TJC1501*-C*
Checked	Qu.Wang	2022.3.19	mm	/	A4	A	Previous part No.: /
Approved	Dongxu.Liu	2022.3.19	Sheet No.	1 Of 1			Document No.: BZ-DWG-00812
							Specification No.: PS3473

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

Packing bag



Packing box



5	Packing box	
4	Gummed tape	
3	Packing bag	
2	Certificate	
1	TJC1501-nA	1000Pcs/bag
Number	Designation	Remark

CUSTOMER DRAWING						Title: Packaging specification	
Drawn	Naihao.Wang	2022.3.18	Unit	Scale	Size	Edition	Part No.: TJC1501-nA(**-*)
Checked	Qu.Wang	2022.3.18	mm	/	A4	A2	Previous part No.: TJC1501-nA
			Sheet No.		1 Of 1		Document No.: BZ-DWG-00813
Approved	Dongxu.Liu	2022.3.18	CWB				Specification No.: PS3787

TJC1501 系列命名规则

TJC1501 series naming conventions

1. Contact

CZ-TJC1501-C*, CZ-TJC1501B-C*

CZ - TJC1501 * - C *

↓
Contact category: CZ...Pin Contact

↓
Series name

↓
Structure: None...standard parts, B...nonstandard part

↓
Manufacture sequence: C...stamping before plating

↓
Plating type: none...Bright tin

↓
C *

↓
C *

2. Housing

TJC1501-nA(***)

TJC1501 - n A (WT * - *)

↓
Series name

↓
No. of circuits: 5, 7, 10,13

↓
Product category: A...Housing

↓
Color: WT...White, BK...Black, GN...Green, BL...Blue, RD...Red, YW...Yellow, OG...Orange, VT...Violet, GY...Gray

↓
Material: 1...PA66+GF

↓
Flammability: None...UL94 V-0, -2...V-2

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