

标题: SAN 系列连接器

Title: SAN Connector

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CWB 浙江合兴电子元件有限公司 CWB Electronics (Zhejiang) Co., Ltd. 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.)	<u>制定 Edit:</u> 王曲 2022. 1. 15	<u>产品名称 Product name:</u> SAN 系列
	<u>审核 Check:</u> 吴吉 2022. 3. 25	<u>编号 Document No.:</u> PS4116
	<u>批准 Approval:</u> 刘冬旭 2022. 3. 26	<u>版本 Revision:</u> 1

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
0	/	First release	王曲 2021/09/24
1	/	Update specifications and part no according to new naming specifications	张博 2022/03/24



产品名称 Product name	SAN 系列	编号 Document No.	PS4116	版本号 Version No.	1
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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 2.0 阳型电子连接器，产品名称：SAN。

This product specification covers the requirement for 2.0mm pitch Receptacle connector, which are designed and manufactured by CWB Electronics(ZheJiang) Co.,LTD. P/N: SAN.

3.产品描述 Product description

SAN 系列产品为家电连接器产品，产品部件组成如下：

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

Part name	Part No.	Previous part No.	Description
插针 Pin contact	CZ-SAN-C*	CZ-SAN-B	AWG28~AWG24
插针 Pin contact	CZ-SANC-C*	CZ-SAN-C	AWG28~AWG24
插针 Pin contact	CZ-SAND-C*	CZ-SAN-D	AWG22~AWG20
条形连接器针座（面板安装） Receptacle housing (Panel mount)	SAN-nA (**-*)	SAN-nA	PA66 UL94 V-0 PA66 UL94 V-0 GWT750 °C

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
EIA-364	EIA-364 系列标准 EIA-364 series standards

产品符合 RoHS 标准。

The product should comply with RoHS.

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5. 参数范围 Parameter ratings:

额定电流 [AC(有效值)/DC] Rated current [AC(rms)/DC]	2A Max
适用 PCB 板 Applicable PCB	Board thickness:1.2mm-1.6mm
额定电压[AC(有效值)/DC] Rated voltage [AC(rms)/DC]	250V
使用温度范围（包含温升） Operating temperature range (include temperature rise)	-25°C~+85°C
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)	CZ-SAN-C* Wire size: AWG28~AWG24(0.08mm ² -0.20 mm ²) Insulation diameter: ϕ 1.2mm- ϕ 1.4mm
	CZ-SANC-C* Wire size: AWG28~AWG24(0.08mm ² -0.20 mm ²) Insulation diameter: ϕ 1.2mm- ϕ 1.4mm
	CZ-SAND-C* Wire size: AWG22~AWG20(0.33mm ² -0.52 mm ²) Insulation diameter: ϕ 1.6mm- ϕ 1.8mm

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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	端子插入力与固定力 Insertion force and 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 inserting out of the receptacle housing along the axis shall be measured (Testing speed: <25 mm/min.) GB/T 5095.8 Method 15d / EIA-364-29B	固定力: $\geq 10N$ Retention force: $\geq 10N$
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 28: 10N Min. AWG 26: 20N Min. AWG 24: 30N Min. AWG 22: 40N Min. AWG 20: 50N Min.

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	1000m Ω Max. (Initial) 800m 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 M Ω Min. (Initial) 800 M Ω 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 1000V AC (rms) and leakage current of 1mA 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
6.2.4	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	$\Delta 30^{\circ}C$ 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) °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: 800 MΩ Min. Insulation resistance: 800 MΩ Min. 耐电压: 1000V Min. Withstand voltage: 1000V 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	外观: 无损伤 (参照6.1.1) Appearance: no damage.(refer to 6.1.1) 绝缘电阻: 800 MΩ Min. Insulation resistance: 800 MΩ Min. 耐电压: 1000V Min. Withstand voltage: 1000V 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: 800 MΩ Min. Insulation resistance: 800 MΩ Min. 耐电压: 1000V Min. Withstand voltage: 1000V 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 style="margin-left: 20px; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Temperature °C</th> <th style="text-align: left;">Duration</th> </tr> </thead> <tbody> <tr> <td>1 -55±2</td> <td>0.5h</td> </tr> <tr> <td>2 Room Temp.</td> <td>5 minutes Max.</td> </tr> <tr> <td>3 +85±2</td> <td>0.5h</td> </tr> <tr> <td>4 Room Temp.</td> <td>5 minutes Max.</td> </tr> </tbody> </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	0.5h	2 Room Temp.	5 minutes Max.	3 +85±2	0.5h	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: 800 MΩ Min. Insulation resistance: 800 MΩ Min. 耐电压: 1000V Min. Withstand voltage: 1000V Min.
Temperature °C	Duration												
1 -55±2	0.5h												
2 Room Temp.	5 minutes Max.												
3 +85±2	0.5h												
4 Room Temp.	5 minutes Max.												
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±1)%(质量百分比)的氯化钠溶液, 在(35±2)°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±2)°C, NaCl mist concentration (5±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±5) °C, 时间 (4~5) 秒 Dip solder tails into the molten solder held at (245±5) °C for (4~5) seconds EIA-364-52	上锡率≥90%: Solder coverage: ≥90%										

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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) °C；时间 (5±1) 秒后，在正常条件下恢复 (1~2) 小时 Resistance to wave soldering heat: Dip solder tails into the molten solder held at (260±5) °C for (5 ±1) seconds, recovery time (1~2) hours	外观：无损伤 (参照6.1.1) Appearance: no damage.(refer to 6.1.1)
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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	1,5	1,5	1,5	1,5	1,3	1,7	1,7
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	3	3	3			
耐电压 Withstand voltage			3		4	4	4	4			
温升 Temperature rise				2							
耐高温 Heat resistance					2						
耐低温 Cold resistance						2					
恒定湿热 Humidity							2				
温度循环 Temperature cycling								2			
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

SAN 系列

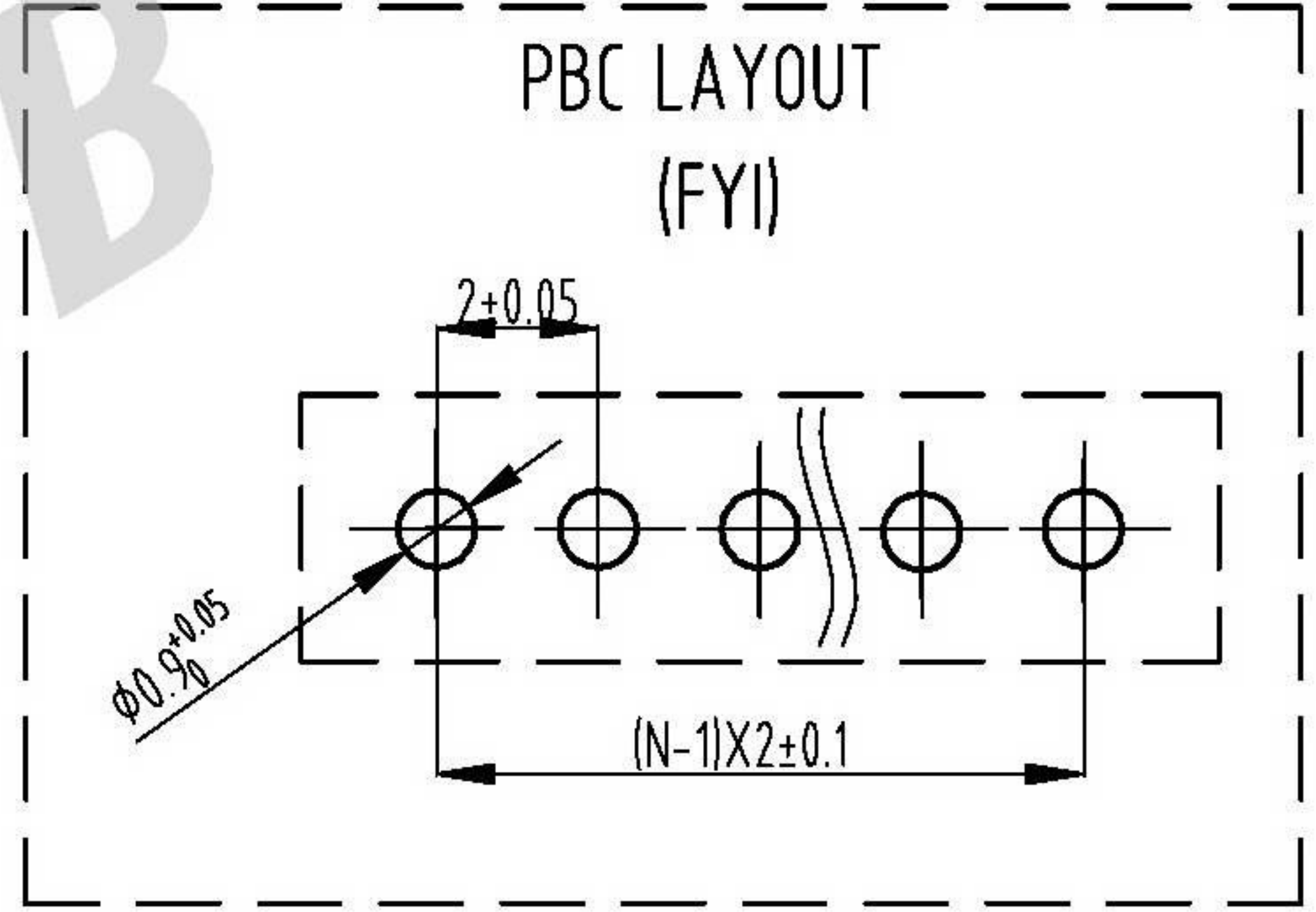
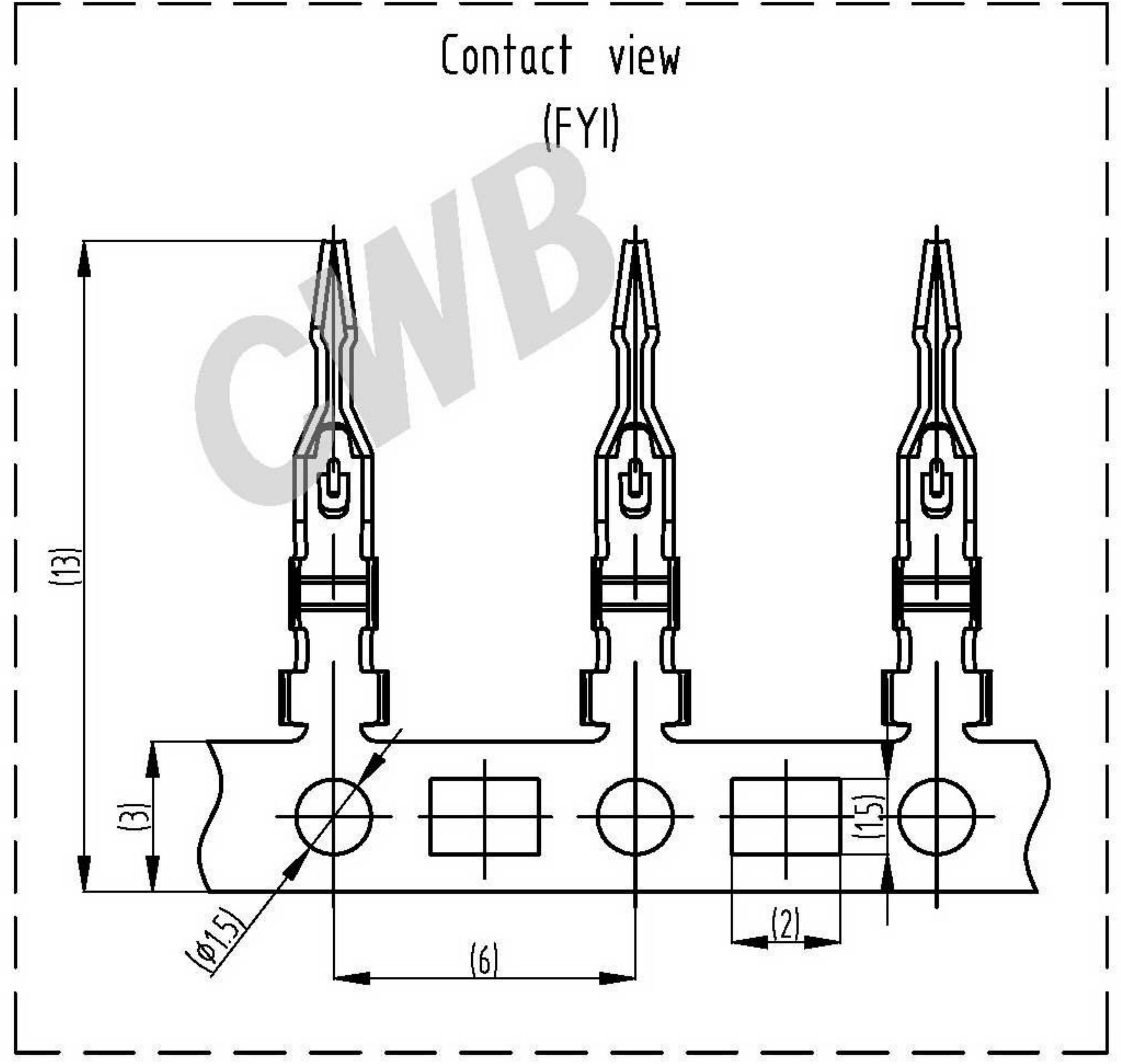
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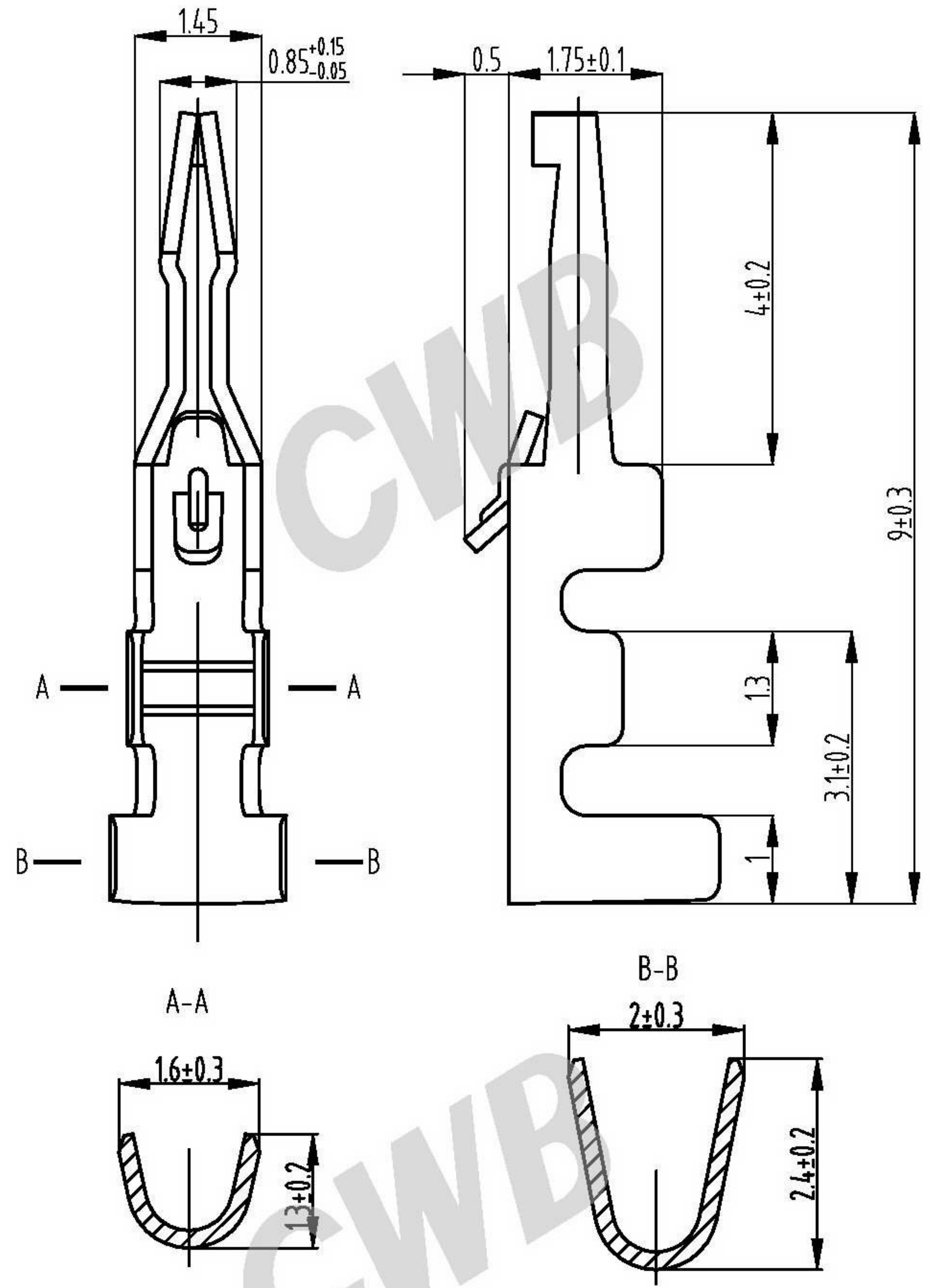
版本号
Version No.

1

General tolerance	Dimension	Tolerance	Rev. No	Location	Description	Reviser	Date
	0~3	±0.13			Version upgrade	Bo.Zhang	2022.3.24
	3~18	±0.23					
	18~50	±0.35					
	≥50	±0.55					

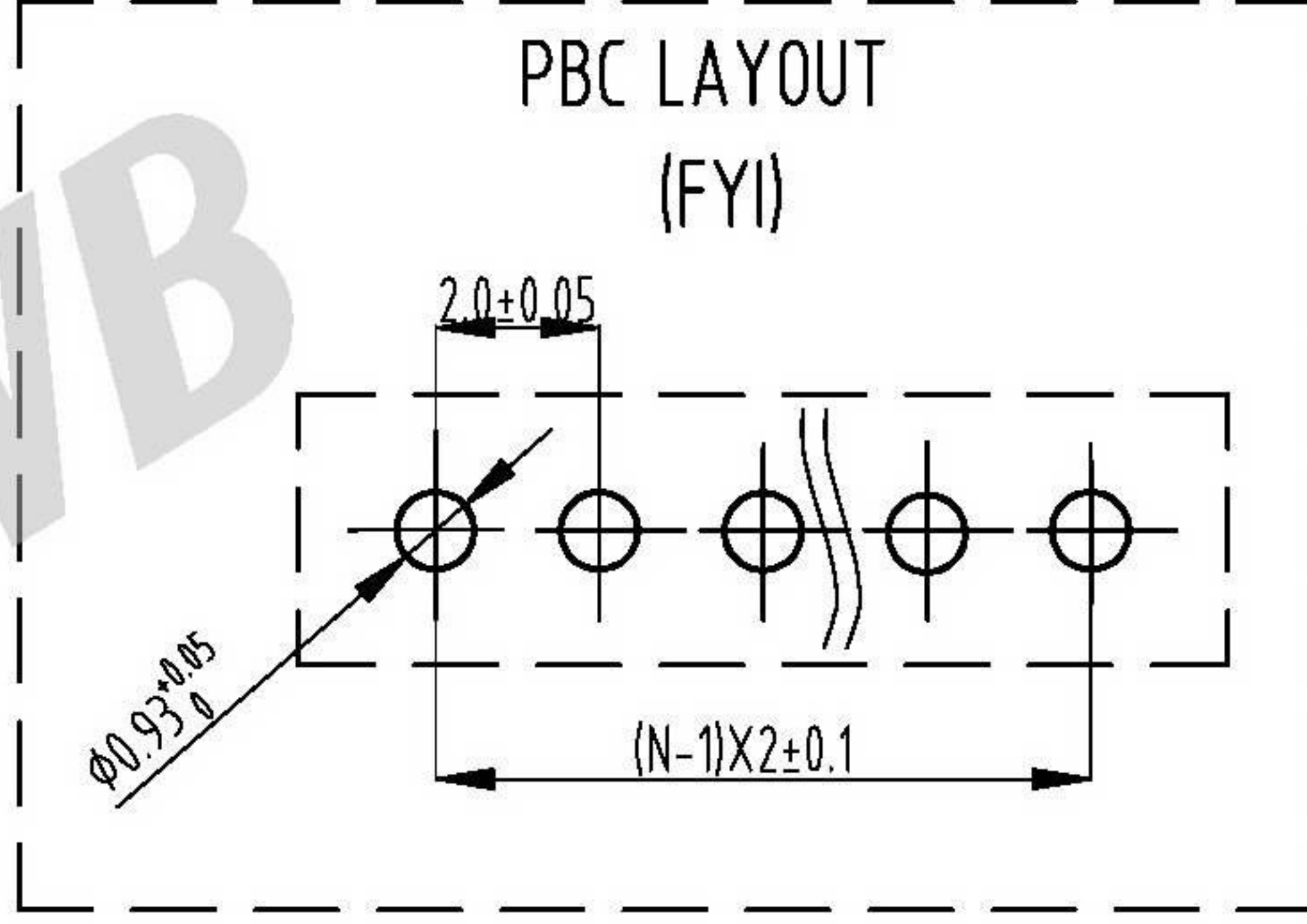
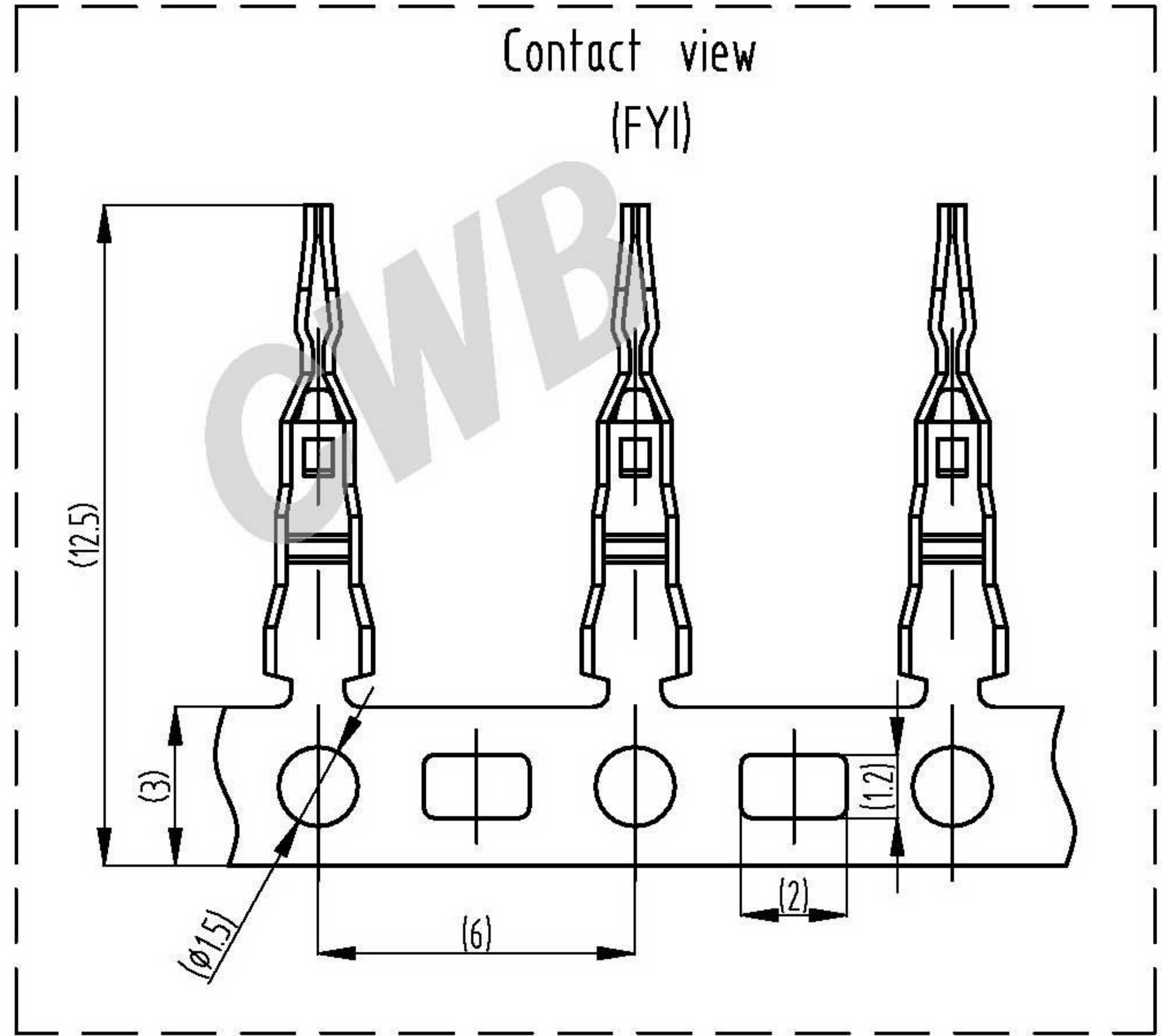


- Notes:
- 1.Material: Phosphor bronze, thickness=0.2mm;
 - 2.Surface finish: tin plated;
 - 3.Matched receptacle housing: SAN-nA;
 - 4.Applicable wires: AWG28~ AWG24;
 - 4.Compliant to the current RoHS;
 - 6.Packaging: paper disc.

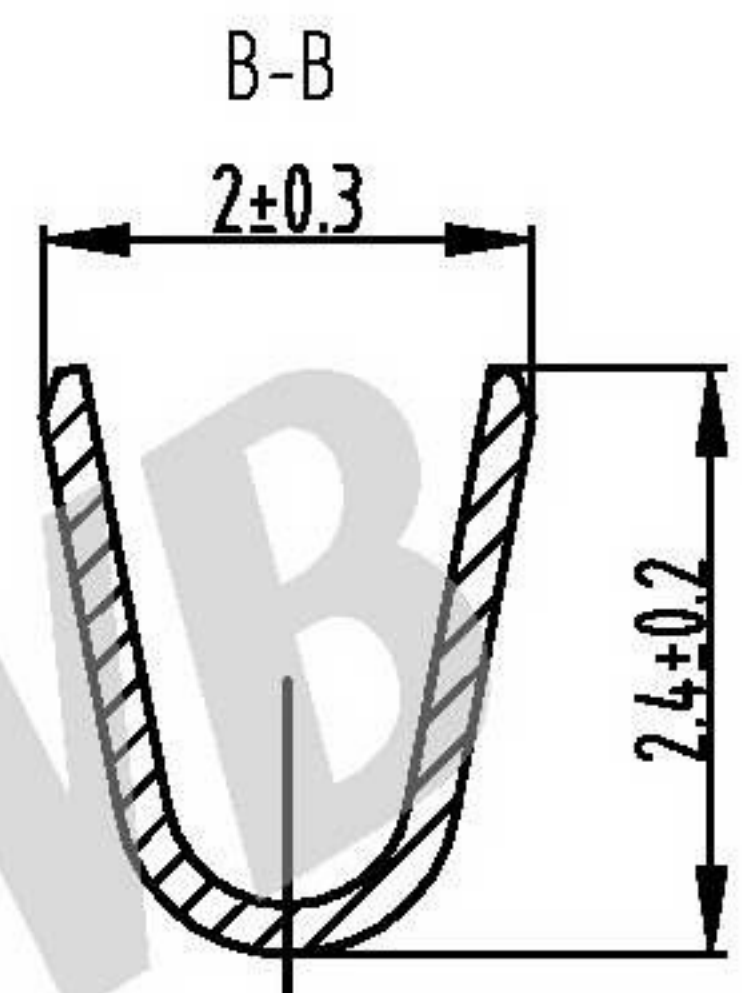
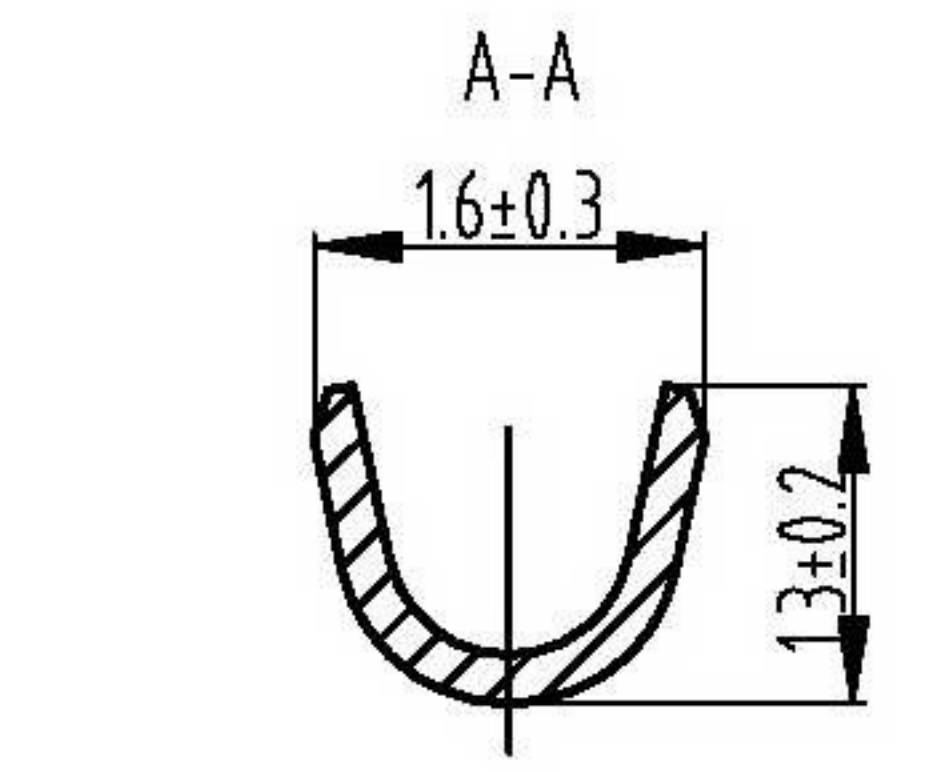
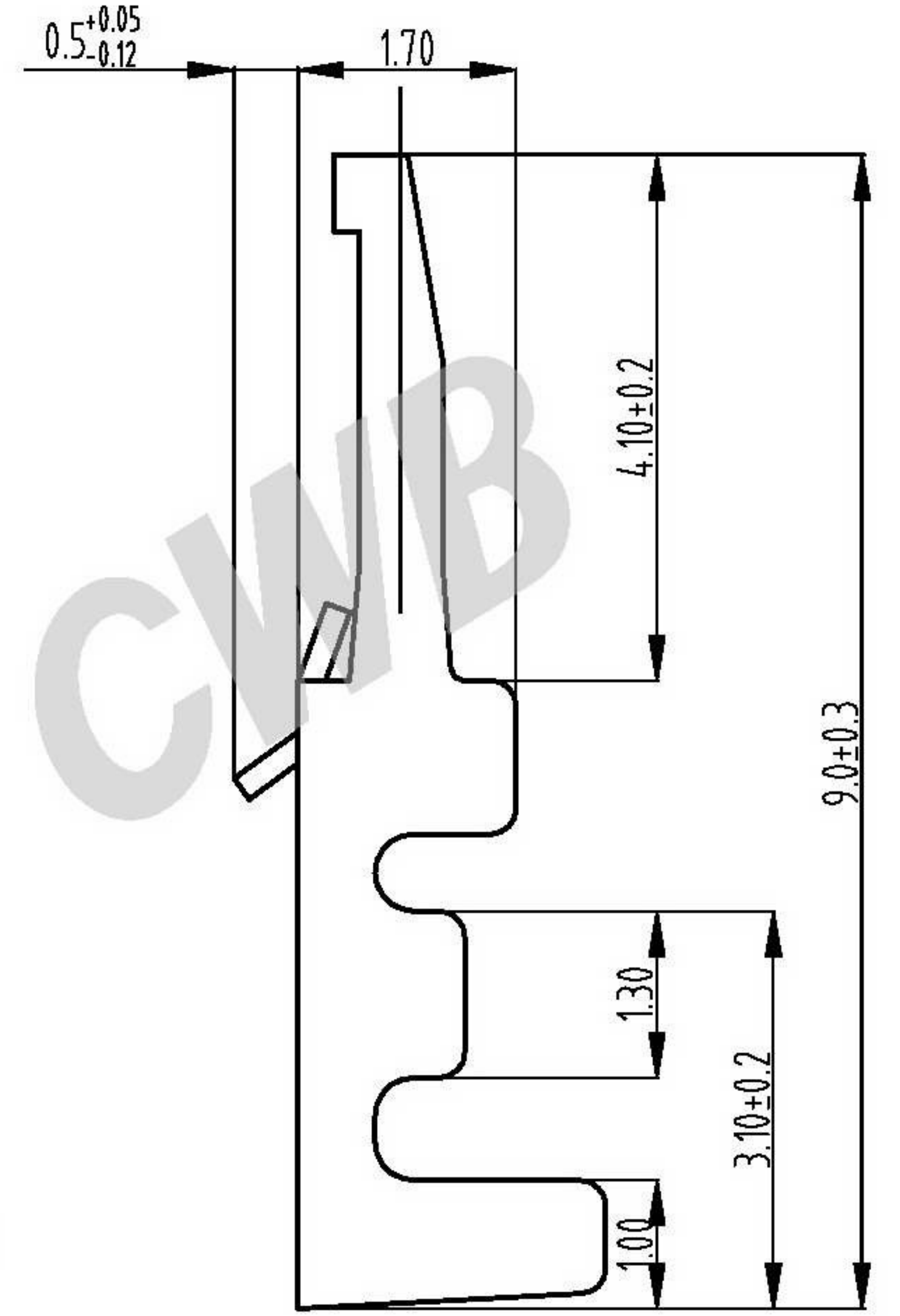
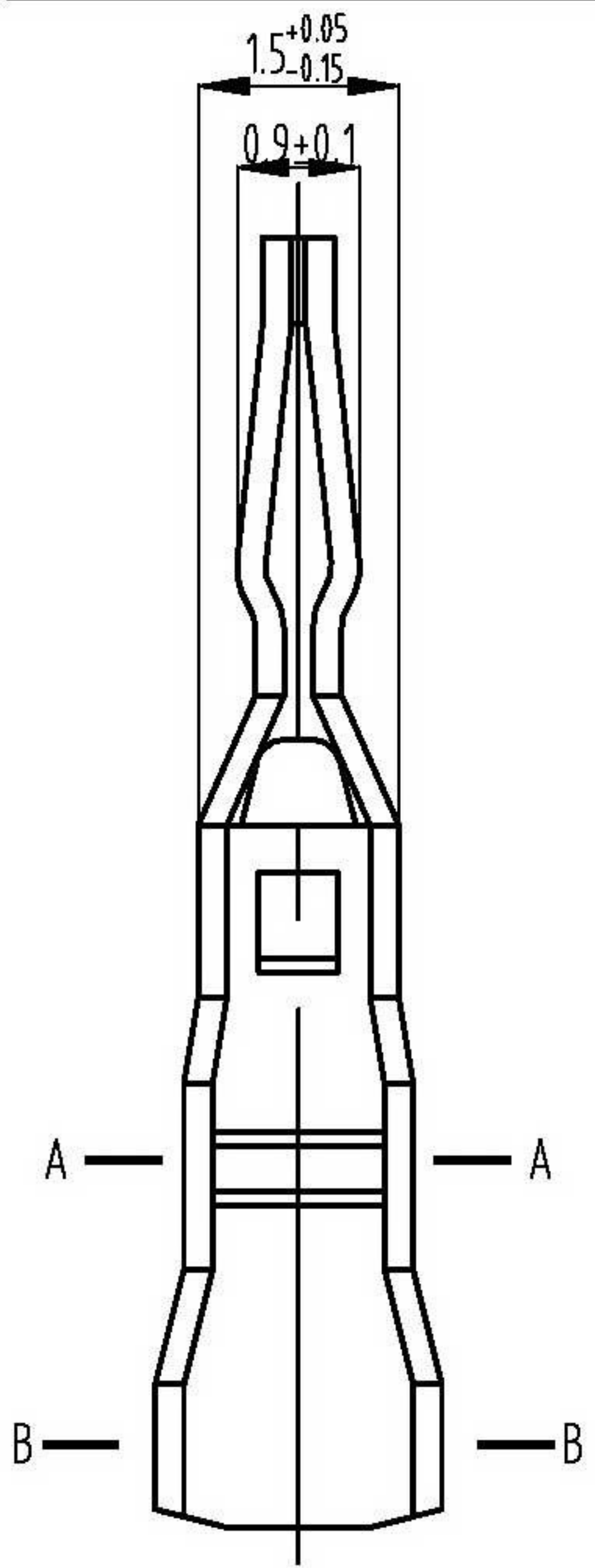


CUSTOMER DRAWING						Title:	
Drawn	Naihao.Wang	2021.9.6	Unit	Scale	Size	Edition	2.0mm pitch contact
Checked	Ji.Wu	2022.3.25	mm	10:1	A4	B3	Part No.: CZ-SAN-**
Approved	Dongxu.Liu	2022.3.26	Sheet No.		1 Of 1		Previous part No.: CZ-SAN-B **
CWB 浙江台兴电子元件有限公司 CWB Electronics (Zhejiang) Co., Ltd.						Document No.: CP-DWG-01229	
						Specification No.: PS4116	

General tolerance	Dimension	Tolerance	Rev. No	Location	Description	Reviser	Date
	0~3	±0.13			Version upgrade	Bo.Zhang	2022.3.24
	3~18	±0.23					
	18~50	±0.35					
	≥50	±0.55					

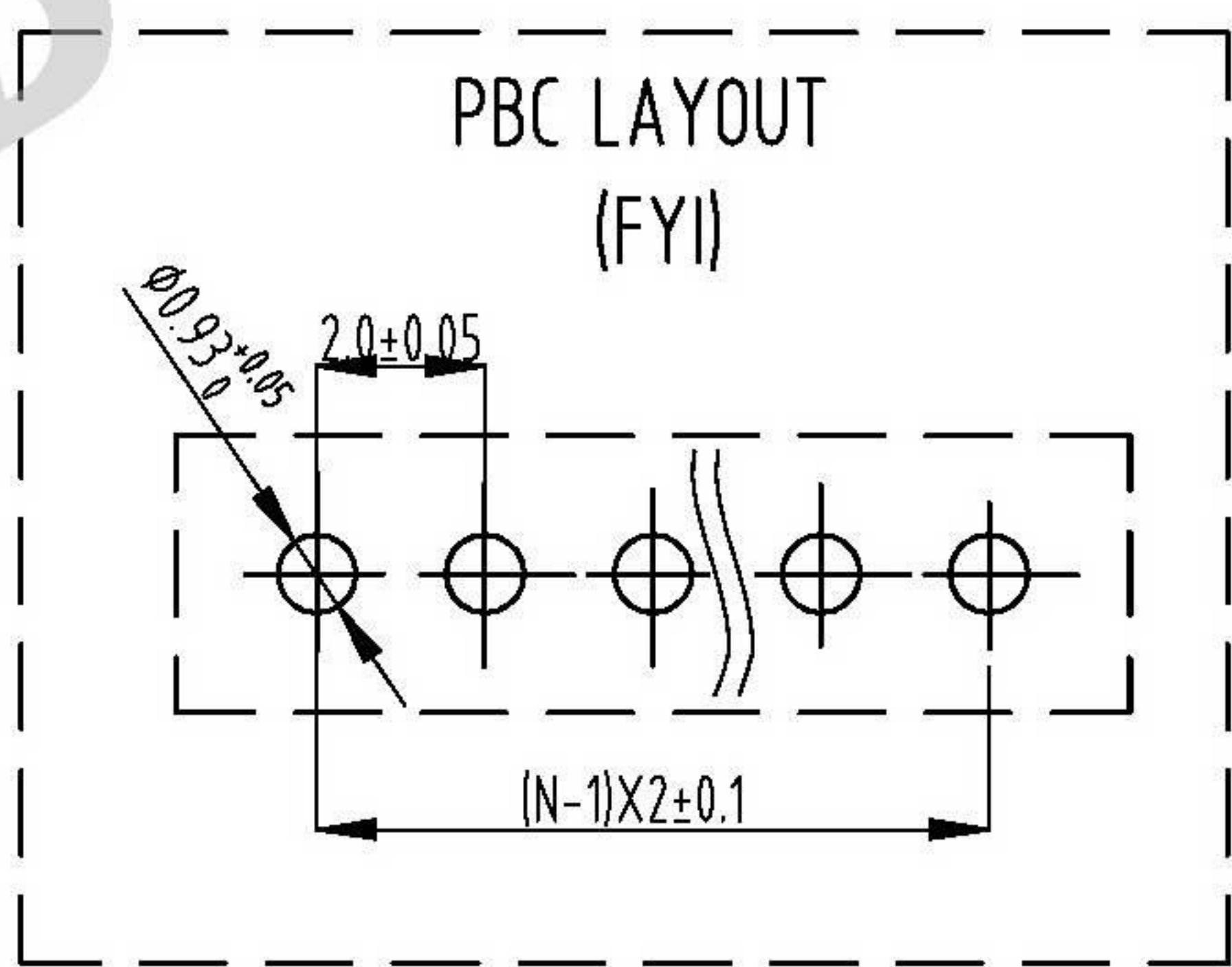
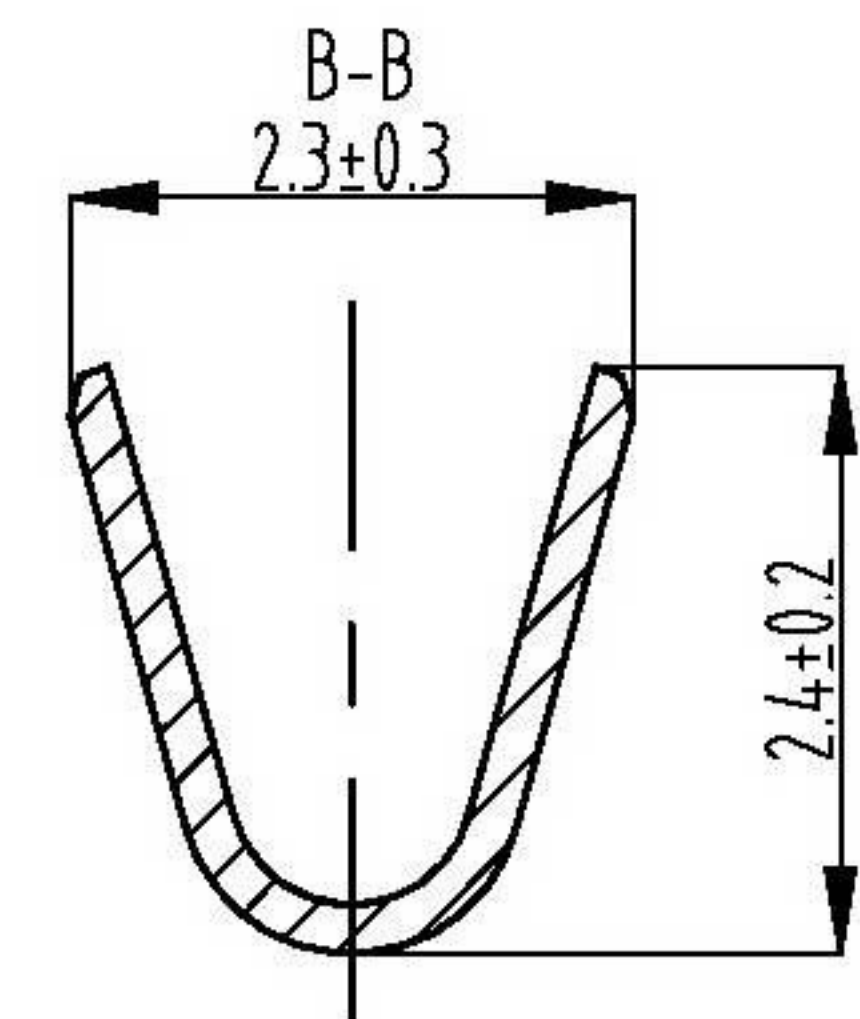
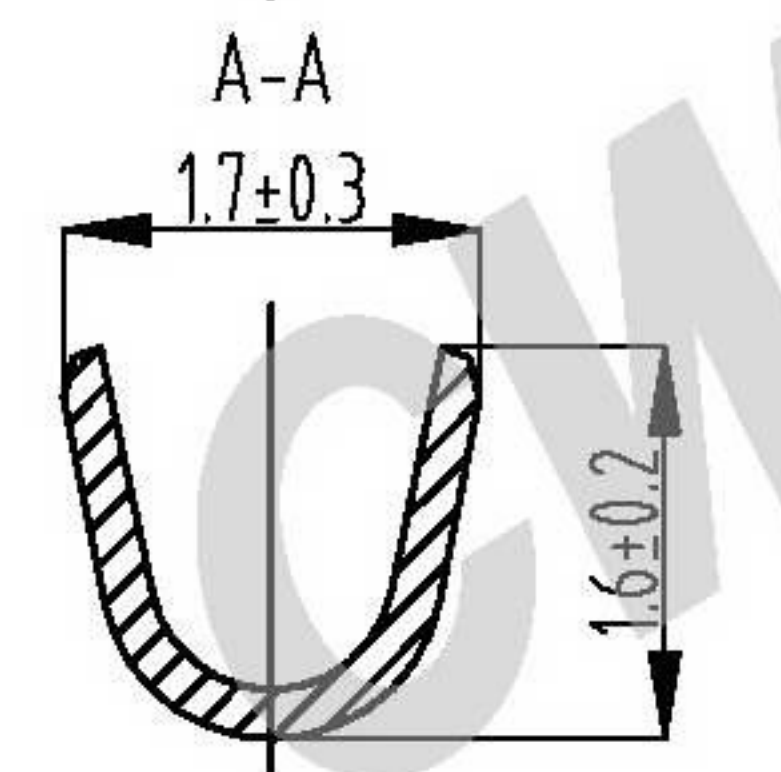
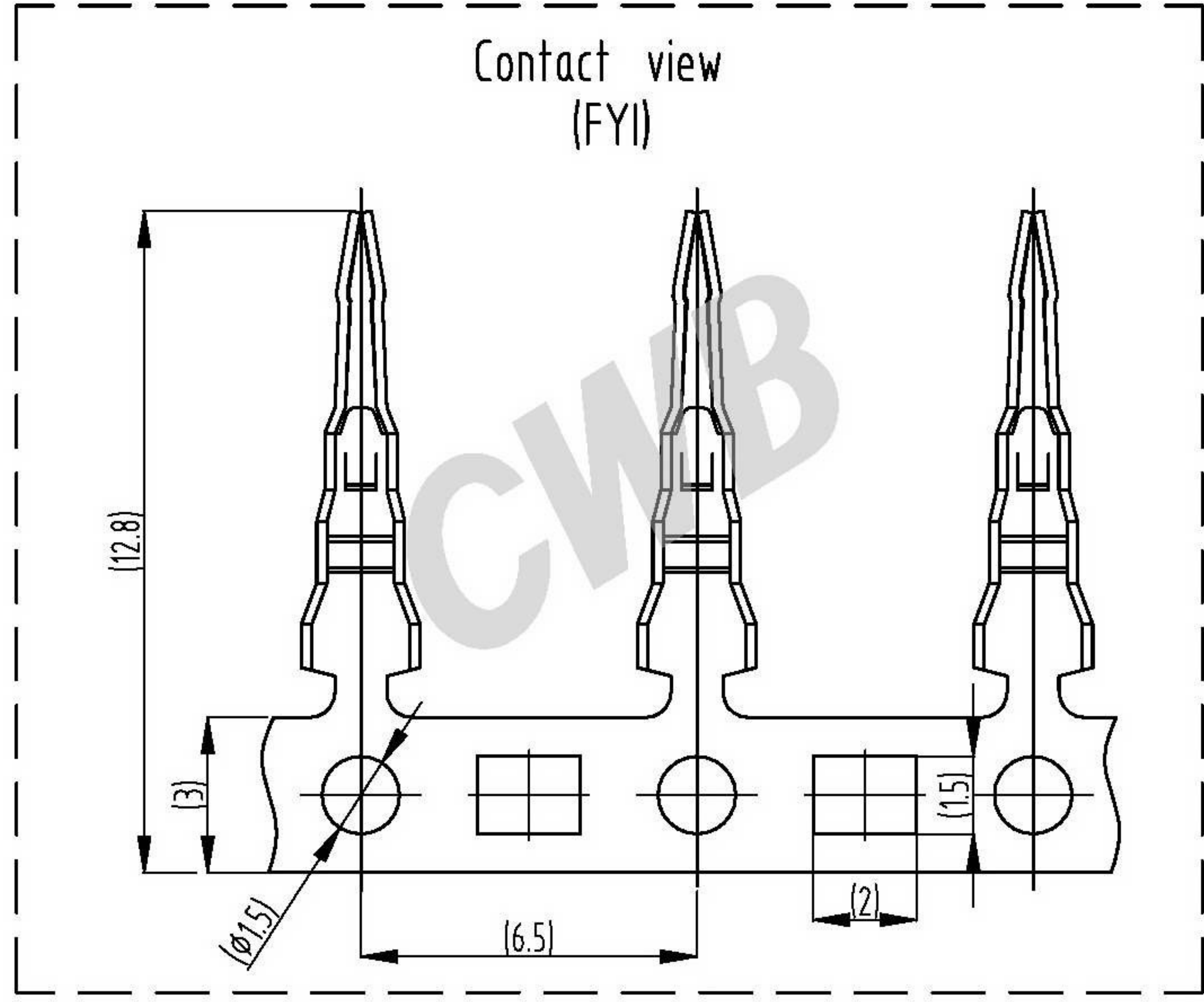
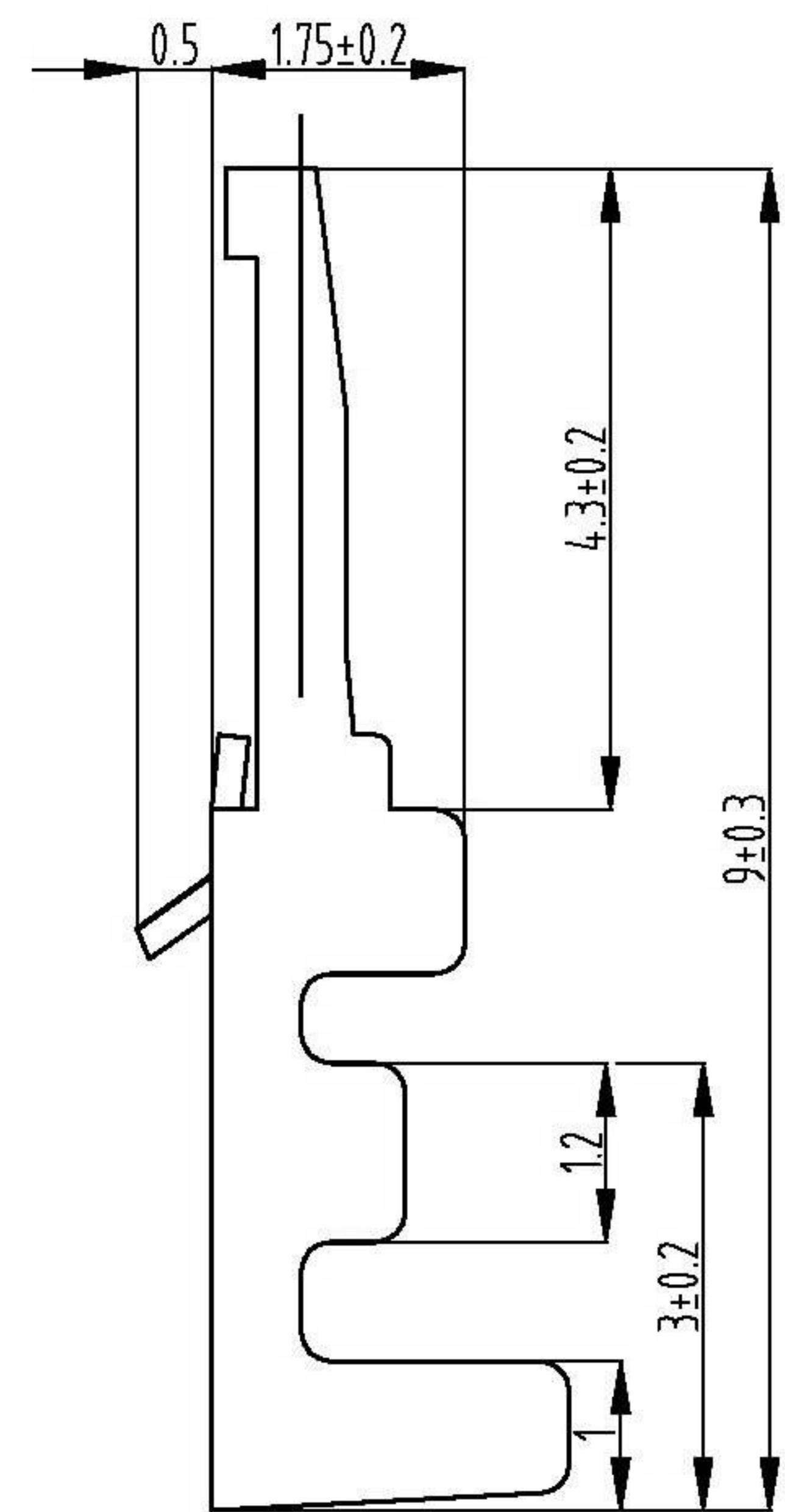
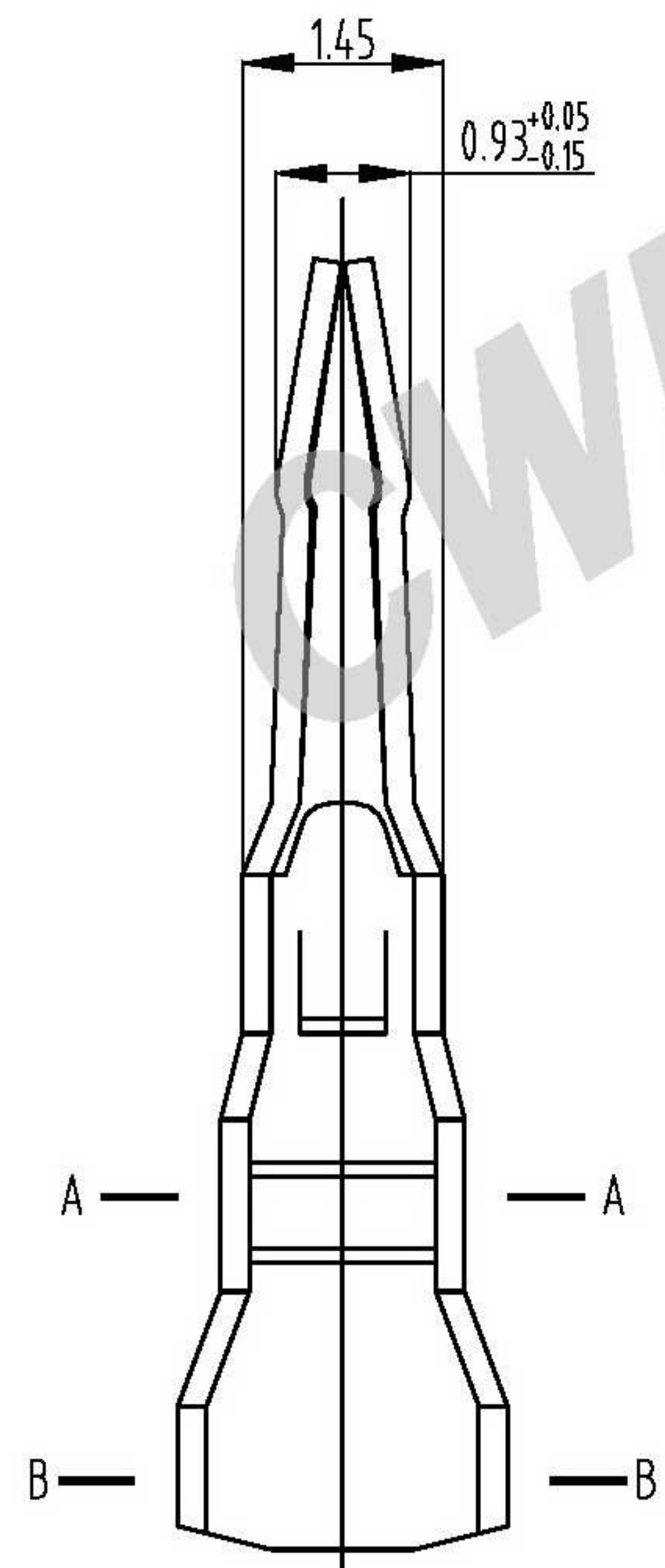


- Notes:
1. Material: Phosphor bronze, thickness=0.2mm;
 2. Surface finish: tin plated;
 3. Matched receptacle housing: SAN-nA;
 4. Applicable wires: AWG28~AWG24;
 4. Compliant to the current RoHS;
 6. Packaging: paper disc.



CUSTOMER DRAWING						Title: 2.0mm pitch contact	
Drawn	Naihao.Wang	2021.9.6	Unit	Scale	Size	Edition	Part No.: CZ-SANC-**
Checked	Ji.Wu	2022.3.25	mm	10:1	A4	B3	Previous part No.: CZ-SAN-C **
Approved	Dongxu.Liu	2022.3.26	Sheet No. 1 Of 1				Document No.: CP-DWG-01231
CWB 浙江合兴电子元件有限公司 CWB Electronics (Zhejiang) Co., Ltd.						Specification No.: PS4116	

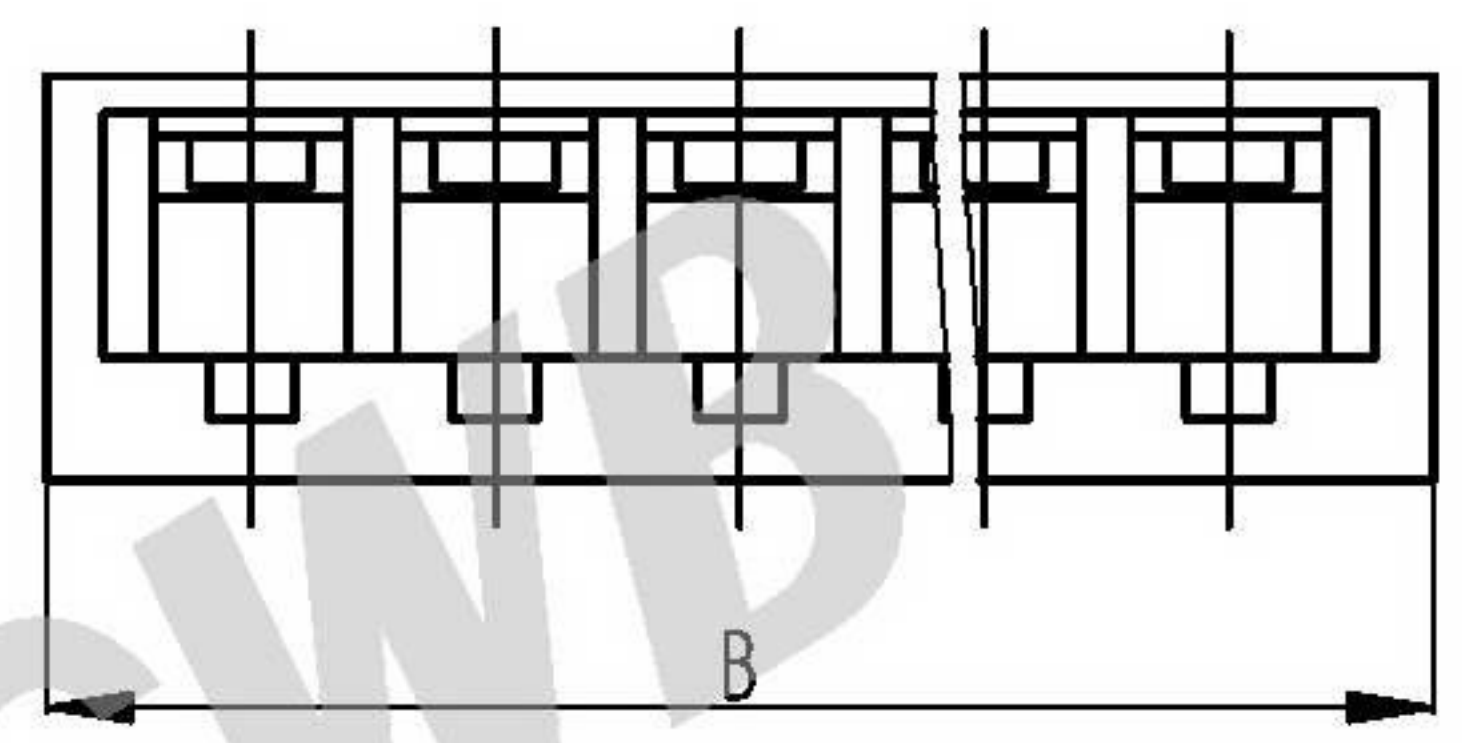
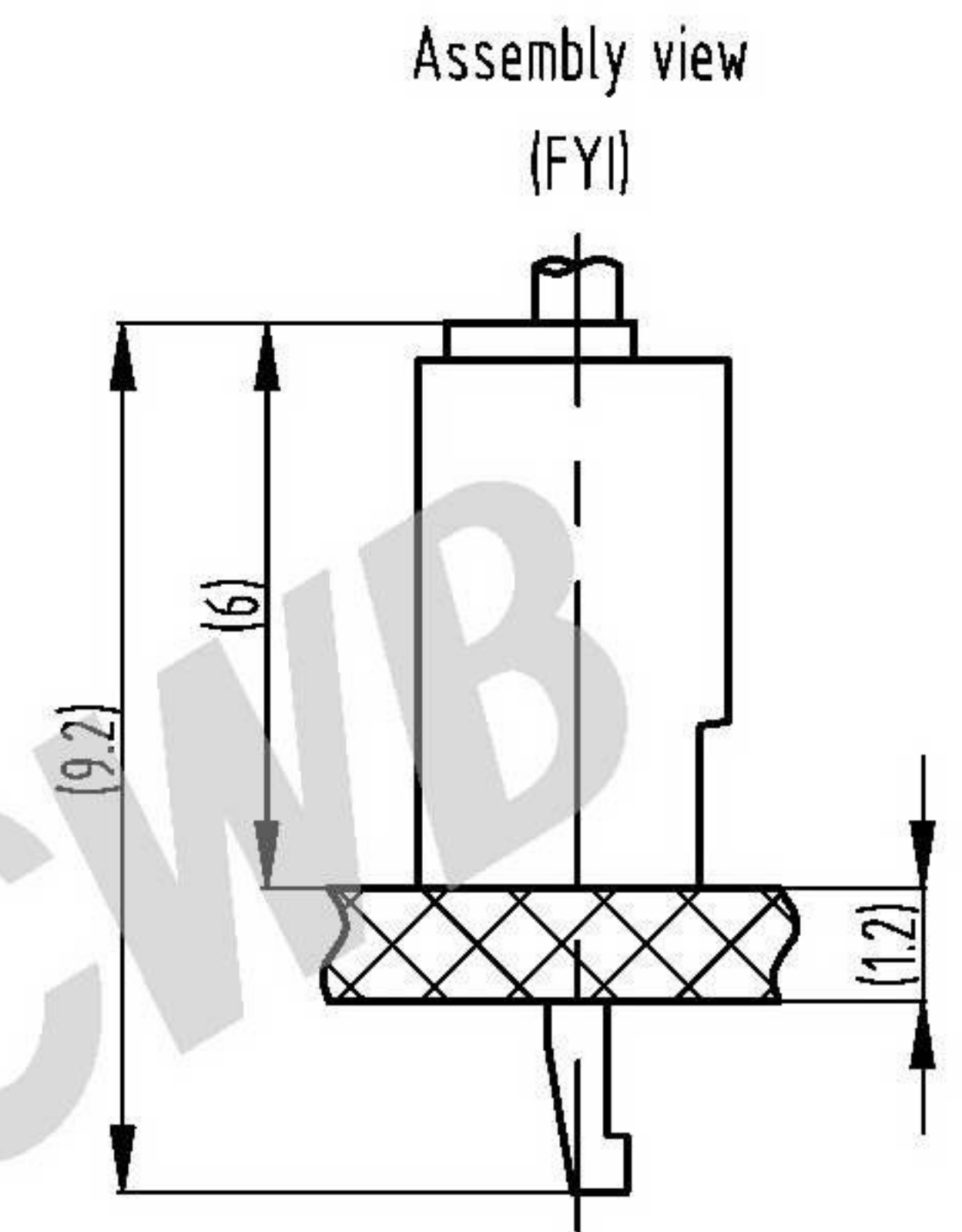
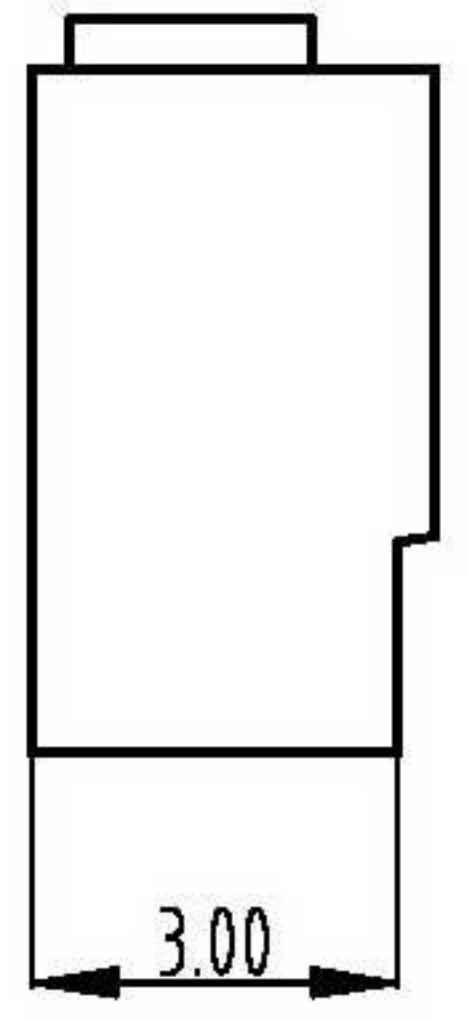
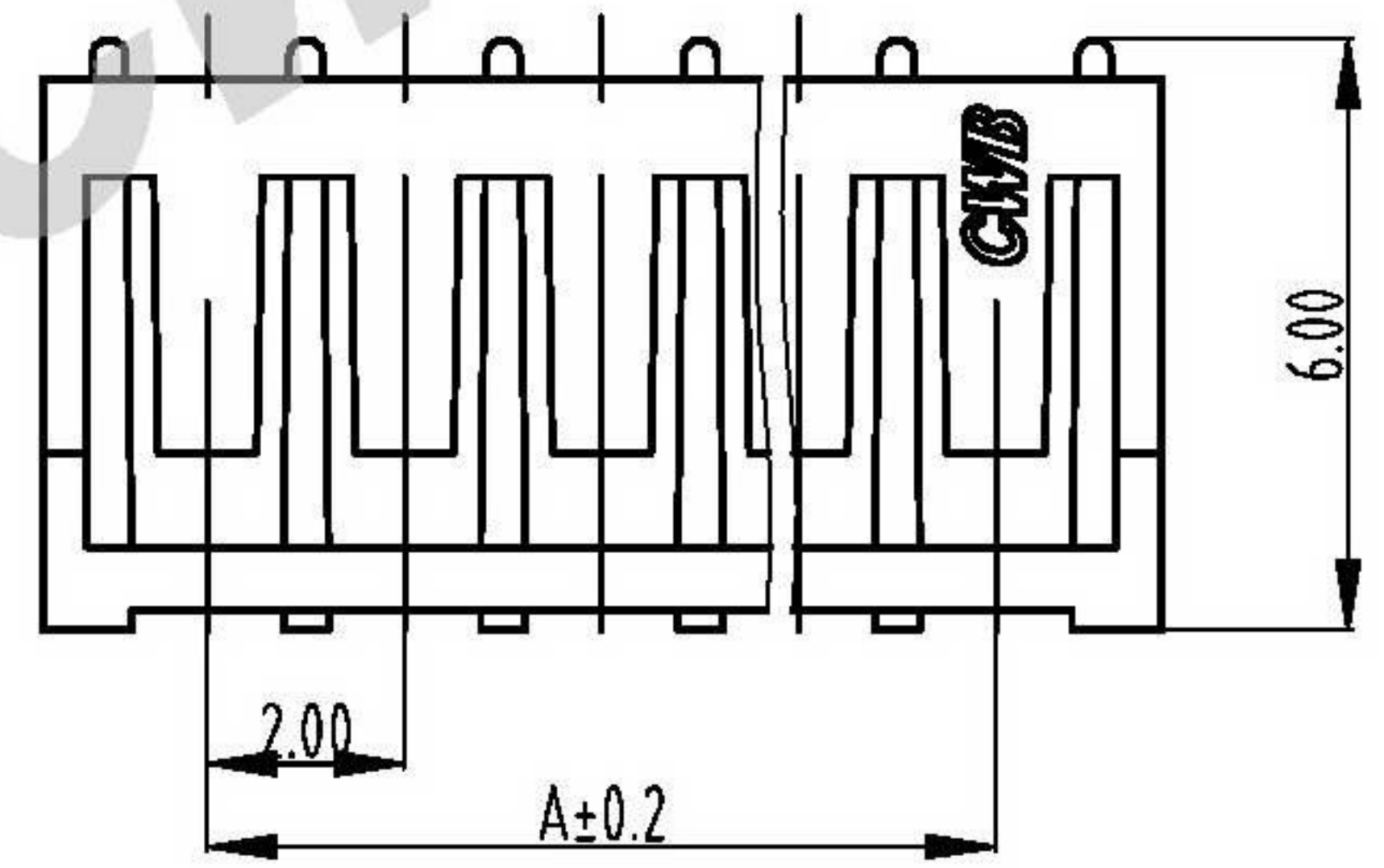
General tolerance	Dimension	Tolerance	Rev. No	Location	Description	Reviser	Date
	0~3	±0.13			Version upgrade	Bo.Zhang	2022.3.24
	3~18	±0.23					
	18~50	±0.35					
	≥50	±0.55					



- Notes:
1. Material: Phosphor bronze, thickness=0.2mm;
 2. Surface finish: tin plated;
 3. Matched receptacle housing: SAN-nA;
 4. Applicable wires: AWG22~AWG20;
 5. Compliant to the current RoHS;
 6. Packaging: paper disc.

CUSTOMER DRAWING						Title:	
Drawn	Naihao.Wang	2021.9.6	Unit	Scale	Size	Edition	Part No.: CZ-SAND-**
Checked	Ji.Wu	2022.3.25	mm	10:1	A4	B3	Previous part No.: CZ-SAN-D **
Approved	Dongxu.Liu	2022.3.26	Sheet No.	1 Of 1			Document No.: CP-DWG-01231
CWB 浙江台兴电子元件有限公司 CWB Electronics (Zhejiang) Co., Ltd.						Specification No.: PS4116	

General Tolerance	Dimension	Tolerance	Rev. No	Location	Description	Reviser	Date
	0~3	±0.13	/	/	Version upgrade	Ba.Zhang	2022.3.24
	3~18	±0.23					
	18~50	±0.35					
	≥50	±0.55					



SAN-16A	/	30	33.4
SAN-15A	/	28	31.4
SAN-14A	/	26	29.4
SAN-13A	/	24	27.4
SAN-12A	/	22	25.4
SAN-11A	/	20	23.4
SAN-10A	/	18	21.4
SAN-9A	/	16	19.4
SAN-8A	/	14	17.4
SAN-7A	/	12	15.4
SAN-6A	/	10	13.4
SAN-5A	/	8	11.4
SAN-4A	/	6	9.4
SAN-3A	/	4	7.4
SAN-2A	/	2	5.4
Part No.	Previous part No	A	B
		Dimension	

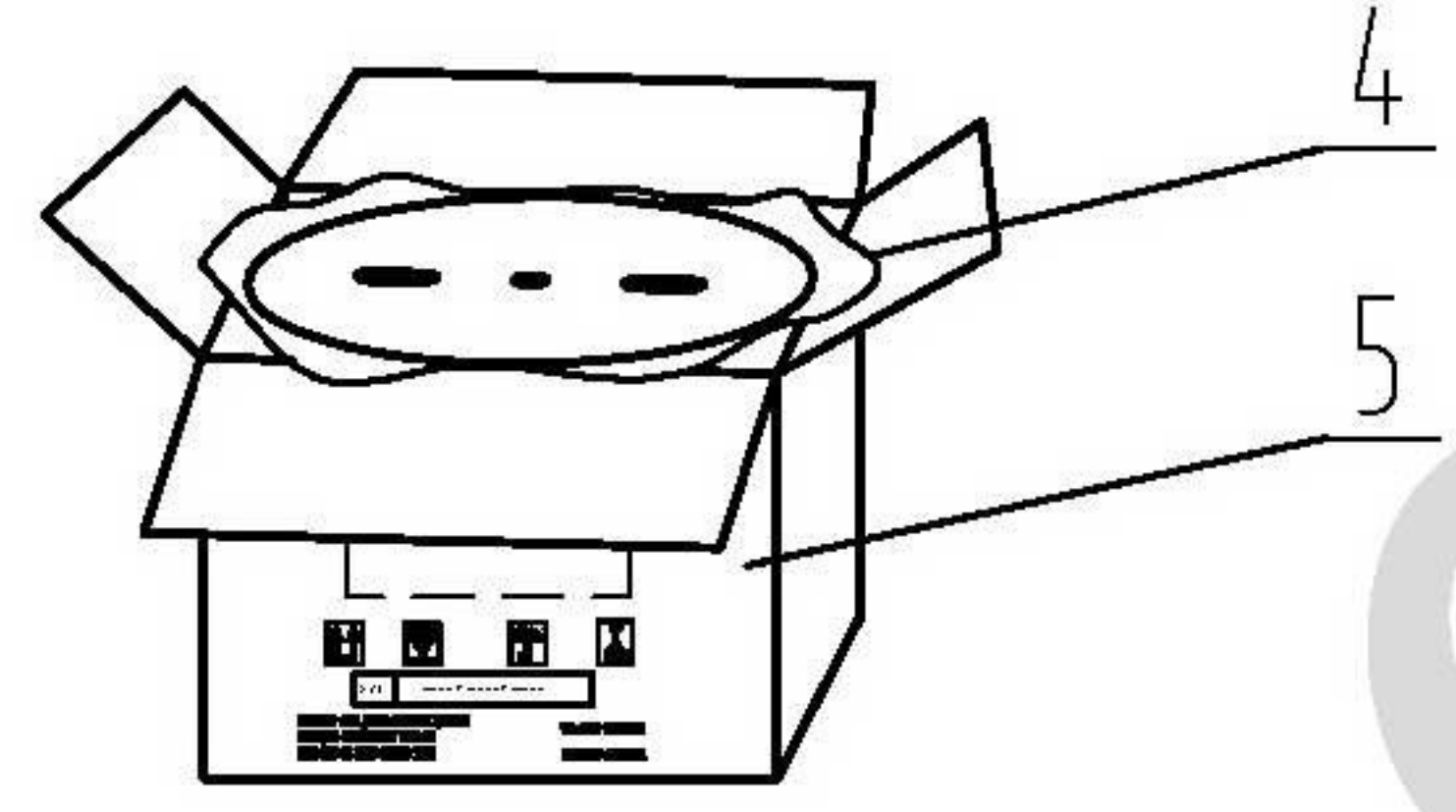
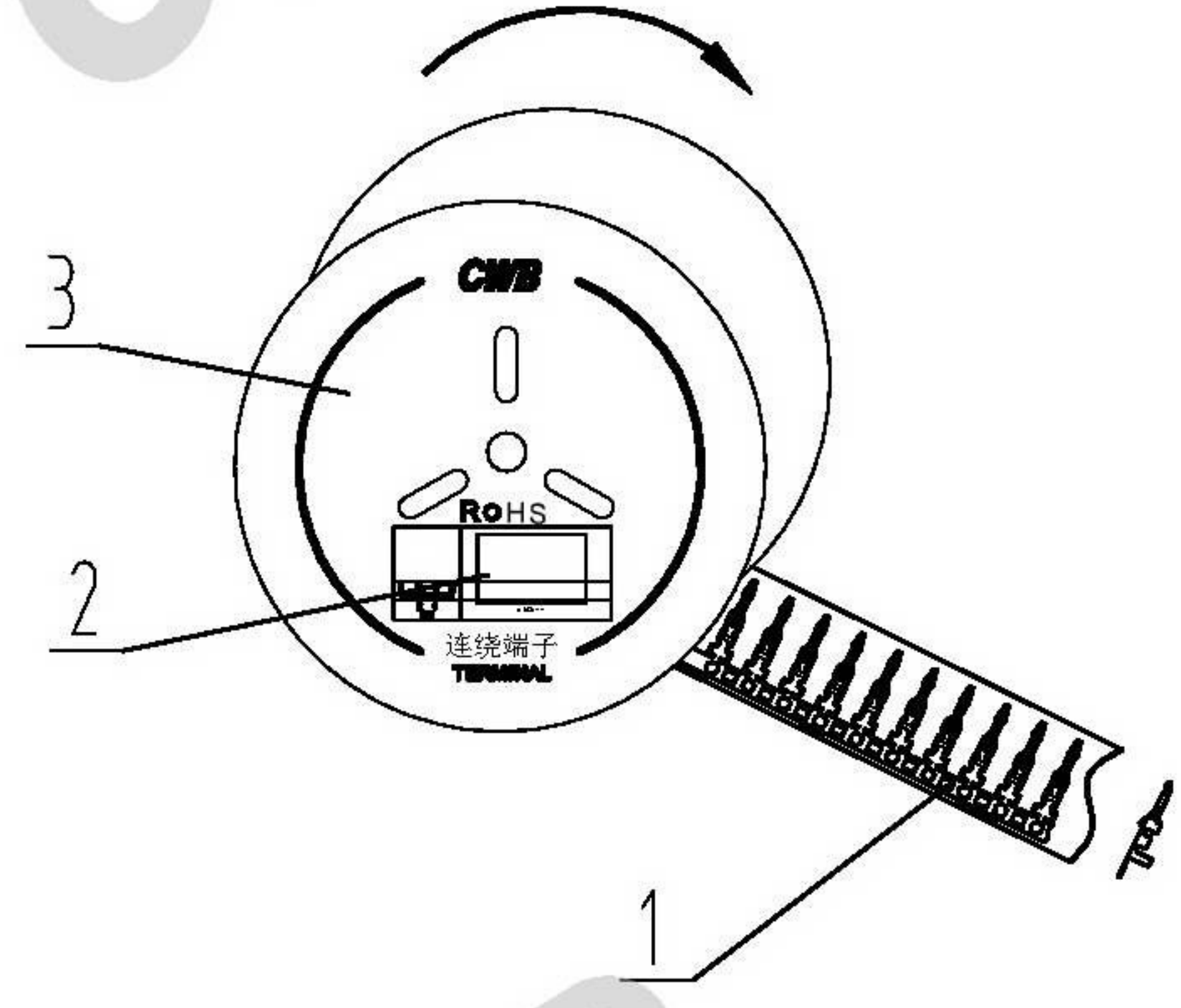
Notes:

1. Material: PA66 UL94 V-0;
PA66 UL94 V-0 GWT 750°C;
2. Matched contact: CZ-SAN, CZ-SAN-C, CZ-SAN-D;
3. Packaging: packing bag;
4. Compliant to the current RoHS.

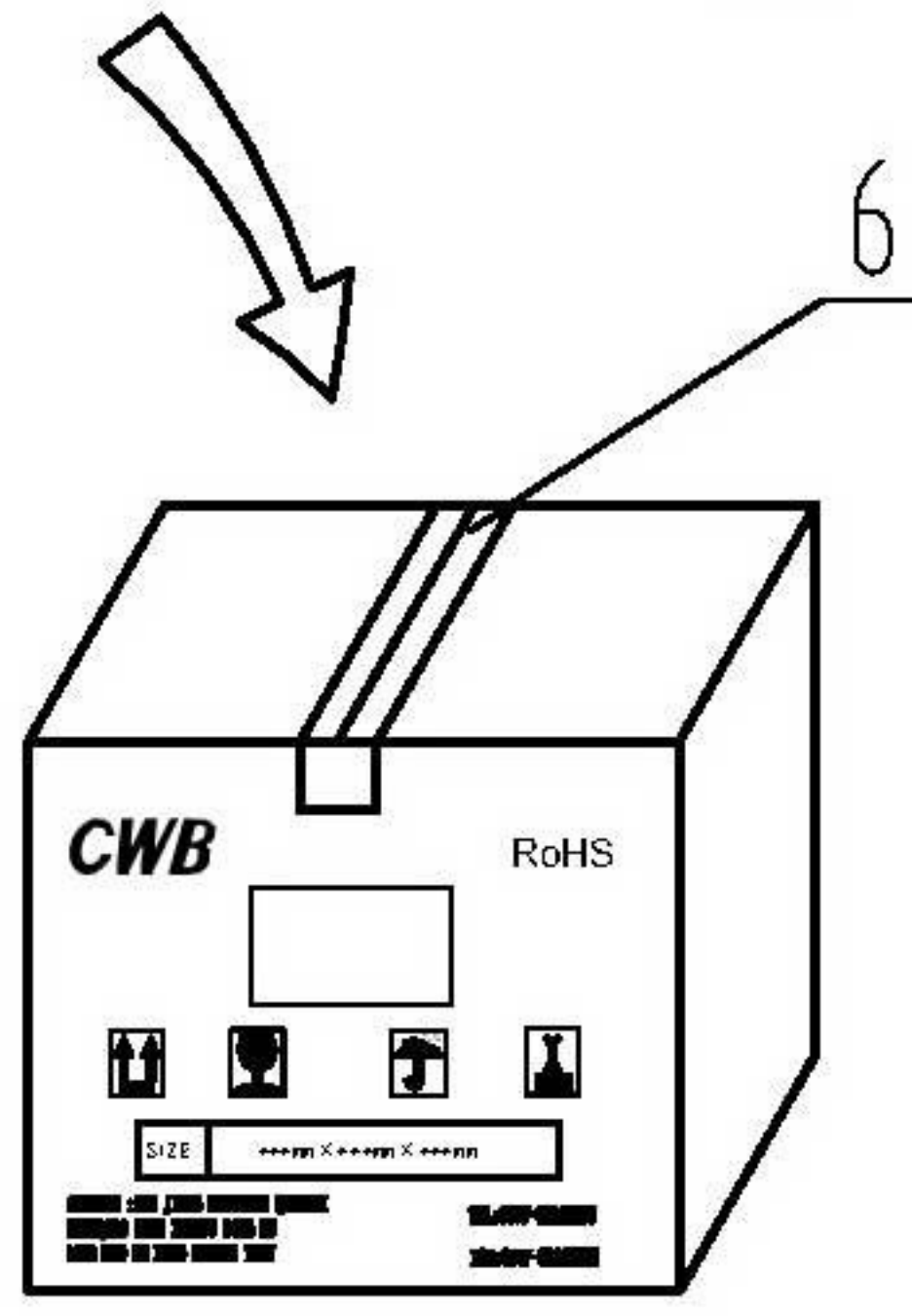
CUSTOMER DRAWING						Title: 2.0mm pitch housing	
Drawn	Naihao.Wang 2021.9.6	Unit	Scale	Size	Edition	Part No.: SAN-nA *(**-*)	
Checked	Ji.Wu 2022.3.25	mm	5:1	A4	B3	Previous part No.: /	
Approved	Dongxu.Liu 2022.3.26	Sheet No.		1 Of 1		Document No.: CP-DWG-01232	
CWB 浙江台兴电子元件有限公司 CWB Electronics (Zhejiang) Co., Ltd.						Specification No.: PS4116	

General Tolerance	Dimension	Tolerance	Rev. No	Location	Description	Reviser	Date
	0~3	±0.13			Version upgrade	Bo.Zhang	2022.3.16
	3~18	±0.23					
	18~50	±0.35					
	≥50	±0.55					

CWB



CWB



CWB

6	Gummed tape	
5	Packing box	
4	Packing bag	
3	Reel	
2	Certification	
1	CZ-SAN/CZ-SAN-B	12 KPcs/reel
	CZ-SANC/CZ-SAN-C	13 KPcs/reel
	CZ-SAND/CZ-SAN-D	10 KPcs/reel
Number	Designation	Remarks

CWB

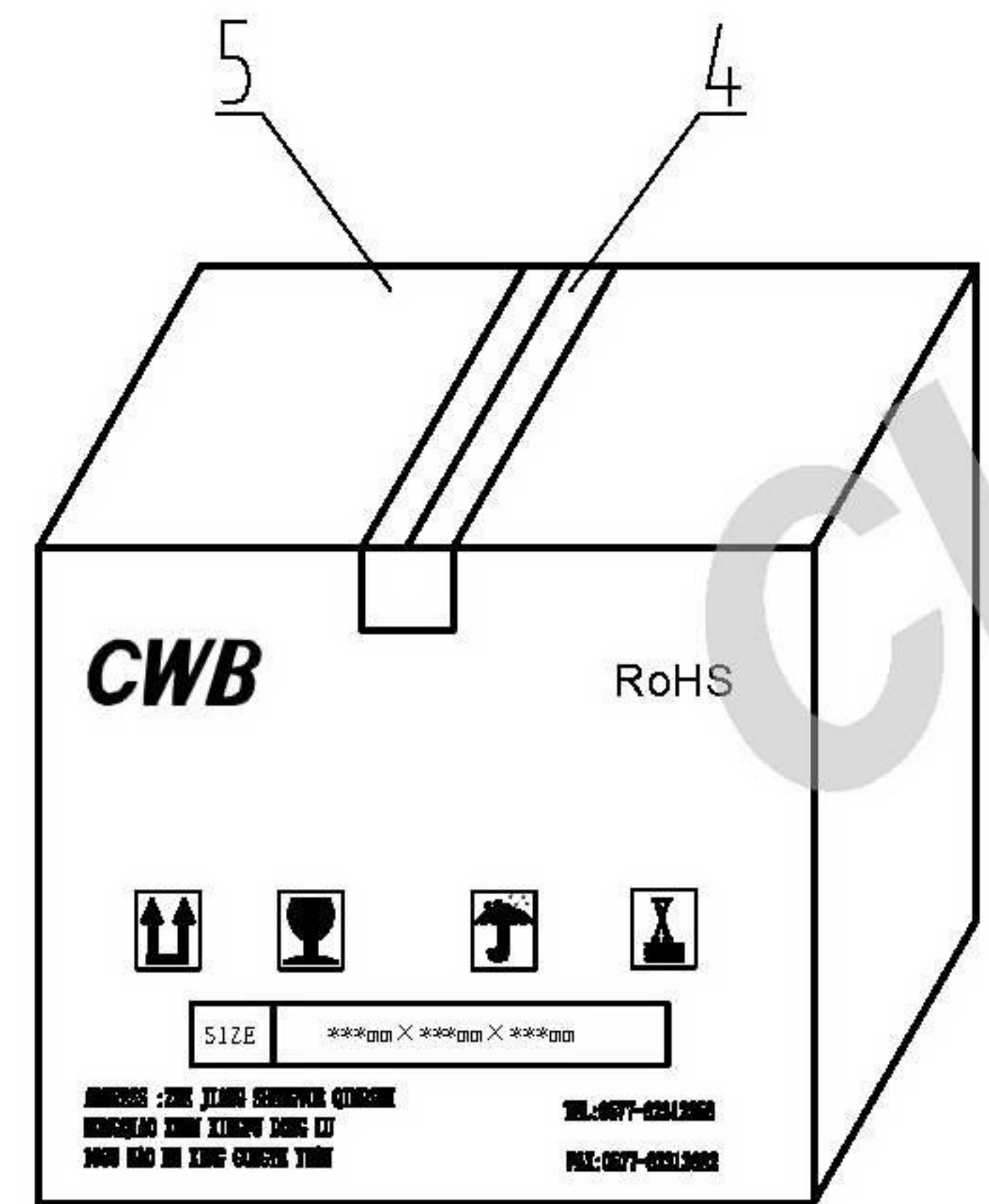
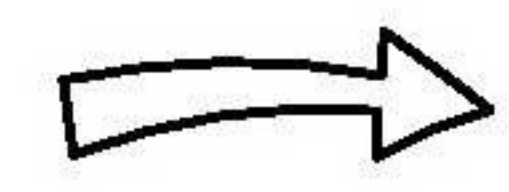
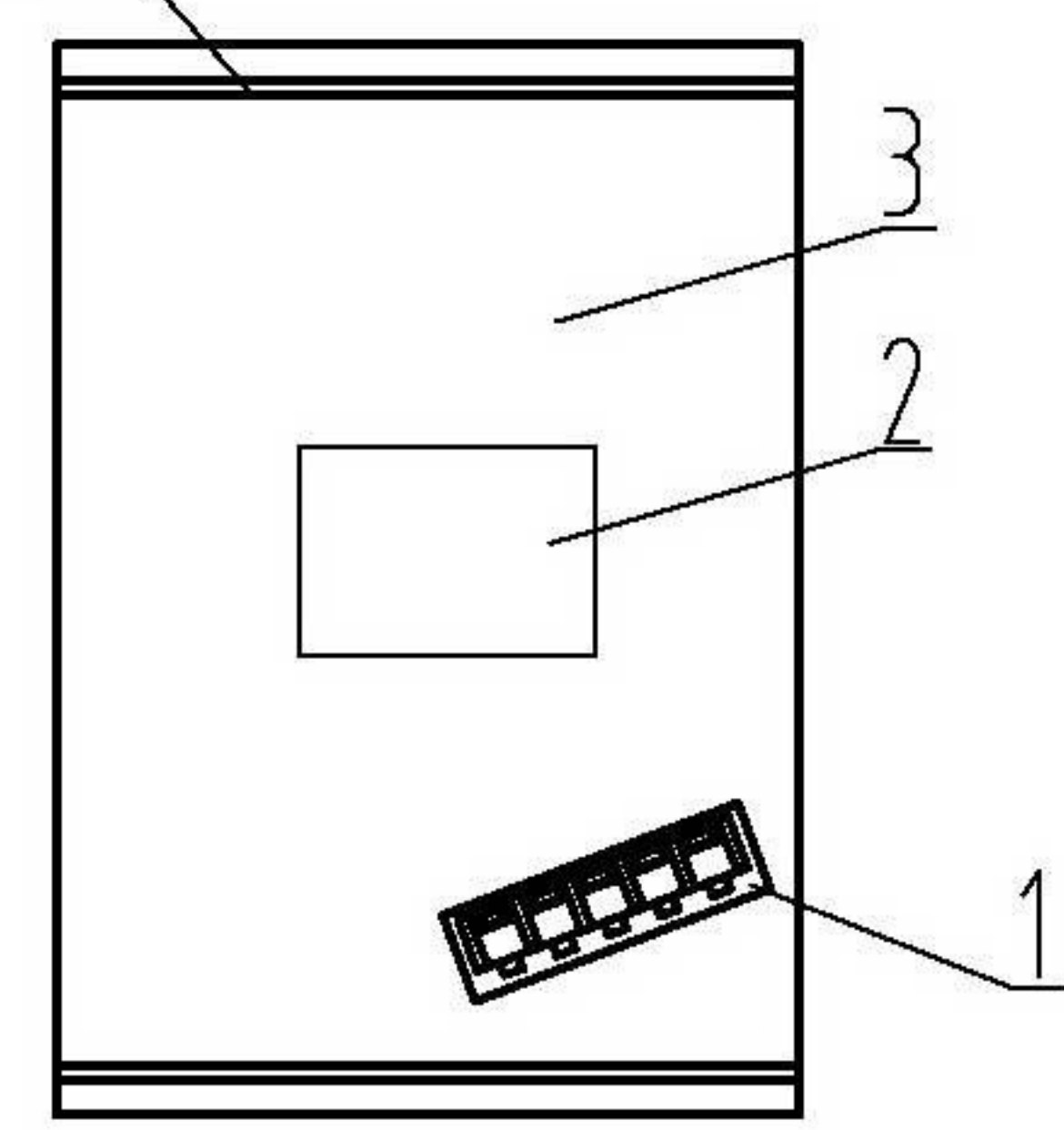
CUSTOMER DRAWING						Title: Packaging specification	
Drawn	Naihao.Wang 2021.9.6	Unit	Scale	Size	Edition	Part No: CZ-SAN-*/CZ-SANC-*/CZ-SAND-*	
Checked	Ji.Wu 2022.3.25	mm	/	A4	B2	Previous part No: CZ-SAN-B/CZ-SAN-C/CZ-SAN-D	
Approved	Dongxu.Liu 2022.3.26	Sheet No. 1 Of 1				Document No: BZ-DWG-00686	
CWB 浙江合兴电子元件有限公司 CWB Electronics (Zhejiang) Co., Ltd.						Specification No: PS4116	

General tolerance	Dimension	Tolerance	Rev. No	Location	Description	Reviser	Date
	0~3	±0.13			Version upgrade	Bo.Zhang	2022.3.16
	3~18	±0.23					
	18~50	±0.35					
	≥50	±0.55					

Packing bag

Packing box

Sealed



SAN-16A	/	1000		
SAN-15A	/	1000		
SAN-14A	/	1000		
SAN-13A	/	1000		
SAN-12A	/	1000		
SAN-11A	/	1000		
SAN-10A	/	1000		
SAN-9A	/	1000		
SAN-8A	/	1000		
SAN-7A	/	1000		
SAN-6A	/	1000		
SAN-5A	/	1000		
SAN-4A	/	1000		
SAN-3A	/	1000		
SAN-2A	/	1000		
Number	Designation	Part No.	Previous part No	Pcs/bag

5	Packing box
4	Gummed tape
3	Packing bag
2	Certification
1	SAN series housing

CUSTOMER DRAWING						Title: Packaging specification	
Drawn	Naihao.Wang 2021.9.6	Unit	Scale	Size	Edition	Part No.: SAN-nA *(**.*)	
Checked	Ji.Wu 2022.3.25	mm	/	A4	B2	Previous part No.: /	
Approved	Dongxu.Liu 2022.3.26	Sheet No. 1 Of 1				Document No.: BZ-DWG-00685	
CWB 浙江合兴电子元件有限公司 CWB Electronics (Zhejiang) Co., Ltd.						Specification No.: PS4116	

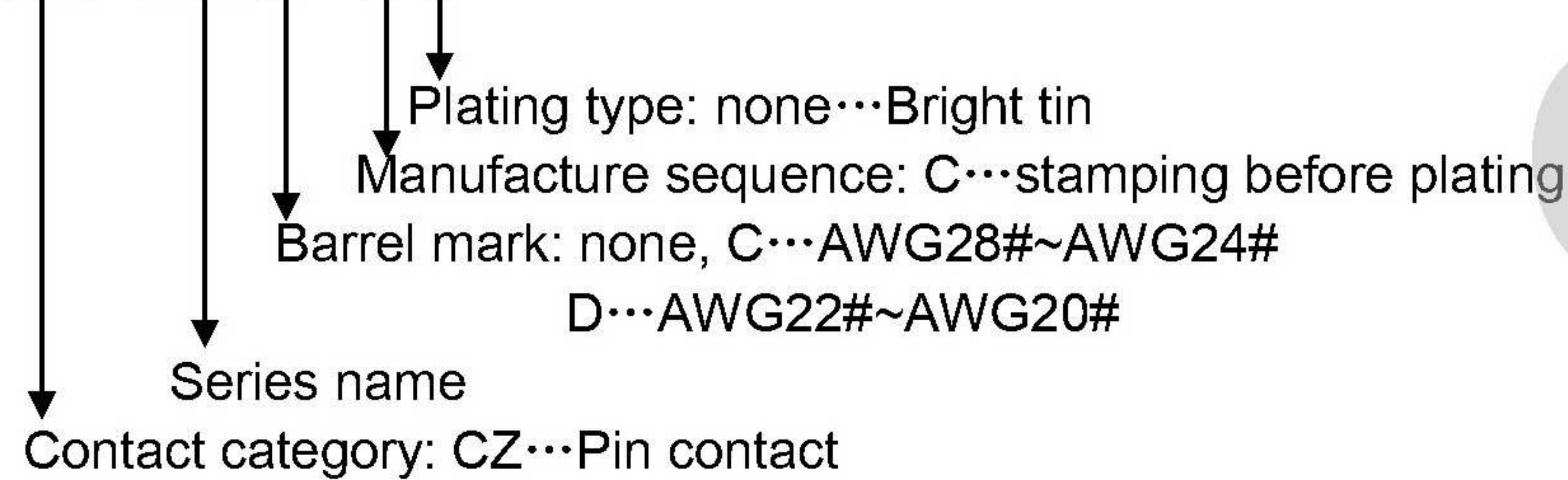
SAN 系列命名规则

SAN series naming conventions

1. Contact

CZ-SAN-C*, CZ-SANC-C*, CZ-SAND-C*,

CH - SAN * - * *



2. Receptacle housing

SAN-nA (** *-*)

SAN - n A * (** *-*)

