

标题: SCN-nAW 系列连接器

Title: SCN-nAW 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>李绍宗 2017. 3. 4</u>	产品名称 Product name: <u>SCN-nAW 系列连接器</u>
	审核 Check: <u>汪祥龙 2023. 02. 04</u>	编号 Document No.: <u>PS3953</u>
	批准 Approval: <u>刘冬旭 2023. 02. 04</u>	版本 Revision: <u>V2</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	/	First release	李绍宗 2017/03/04
V1	/	Update specifications and part no according to new naming specifications	张博 2022/04/06
V2	/	产品适用温度范围更新, 版本升级 Product applicable temperature range update, version upgrade	Heng. Yin 2023/02/04 尹恒

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# 产品规格书

## PRODUCT SPECIFICATION

### 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 2.5P 阳型电子连接器，产品名称：SCN-nAW 系列连接器。

This product specification covers the requirement for 2.5mm pitch housing, which are designed and manufactured by CWB Electronics(ZheJiang) Co.,LTD. P/N: SCN-nAW Connector.

### 3.产品描述 Product description

SCN-nAW 系列连接器产品为家电连接器产品，产品部件组成如下：

The SCN-nAW 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-SCNC-**	SCNW	AWG#26~AWG#22
		SCNW-T	
针座 receptacle housing	SCN-nAW(**-*)	SCNW-nA	PA66 UL94V-0 PA66+GF V-2

### 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 Electromrchanical 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 Solderabilith 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]	2A
适用 PCB 板 Applicable PCB	Board thickness:1.2mm-1.6mm Hole diameter:1.1-1.2mm
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)	-40°C~+105°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)	Wire size: AWG#26~AWG#22 (0.13mm <sup>2</sup> ~0.33 mm <sup>2</sup> ) Insulation diameter: $\phi$ 1.3mm- $\phi$ 1.6mm

### 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 <b>GB/T 5095.2 Method 1a</b>	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插入孔座和拔出孔座的力, 测试速度不大于25 mm/min。 The force of inserting and pulling the contact into and out of the housing along the axis shall be measured (Testing speed: <25 mm/min.) <b>GB/T 5095.8 Method 15d / EIA-364-29B</b>	插入力 (最大值) Insertion force (Max.)	固定力 (最小值) Retention force (Min.)
			10N	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.) <b>GB/T5095.8 Method 16d / EIA-364-08B</b>	AWG#26: 20N Min. AWG#24: 30N Min. AWG#22: 40N 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	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. <b>GB/T 5095.2 Method 3a / EIA-364-21C</b>	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 1000 V AC (有效值),漏电流 1 mA 的电压作用,时间 1min。 Apply a voltage of 1000 V AC (rms) and leakage current of 1 mA between adjacent contacts or ground cables for 1 minute. <b>GB/T 5095.2 Method 4a / EIA-364-20B</b>	外观: 无击穿和飞弧现象 Appearance: no breakdown or flashover	

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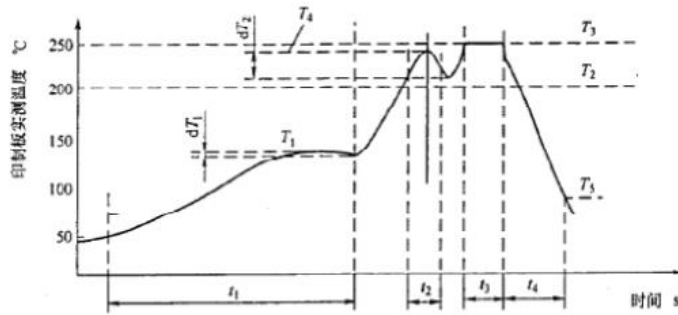
### 6.3 环境性能 Environmental

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 (105±2) °C 的空气中放置 96 小时, 再回到室温中放置 (1~2) 小时测定 Mated connectors exposed to the condition of (105±2)°C for 96 hours, recovery time (1~2) hours <b>GB/T 5095.6 Method 11i / EIA-364-17B</b>	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: 1000V Min. Withstand voltage: 1000V Min.										
6.3.2	耐低温 Cold resistance	连接器配合后, 于 (-40±2) °C 的空气中放置 96 小时, 再回到室温中放置 (1~2) 小时测定 Mated connectors exposed to the condition of (-40±2)°C for 96hours, recovery time (1~2) hours <b>GB/T 5095.6 Method 11j / EIA-364-17B</b>	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: 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 96 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 96 hours, recovery time (1~2) hours <b>GB/T 5095.6 Method 11c /EIA-364-31B</b>	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: 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, 按下列步骤调试验温度: 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 5 个循环,恢复 (1~2) 小时后检查 Mated connectors shall be tested under the following conditions <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Temperature °C</th> <th>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 <b>GB/T 5095.6 method 11d / EIA-364-32C</b>	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: 500 MΩ Min. Insulation resistance: 500 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 <b>GB/T 5095.6 Method 11f / EIA-364-26B</b>	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 (240±5) °C, 时间 (4~5) 秒。 Dip solder tails into the molten solder held at (240±5) °C for (4~5) seconds <b>IPC EIA IPC JEDEC J STD 002E</b>	上锡率≥90 % Solder coverage: ≥90 %										

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6.3.9	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 $(260 \pm 5)^\circ\text{C}$ ；时间 $(5 \pm 1)$ 秒后，在正常条件下恢复 $(1 \sim 2)$ 小时 Resistance to wave soldering heat: Dip solder tails into the molten solder held at $(260 \pm 5)^\circ\text{C}$ for $(5 \pm 1)$ seconds, recovery time $(1 \sim 2)$ hours	外观：无损伤（参照6.1.1） Appearance: no damage.( refer to 6.1.1)
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Pb-free Wave soldering Temperature profile



图中： $T_1 > 150^\circ\text{C}$   $T_2 > 220^\circ\text{C}$   $T_3 = 250^\circ\text{C} \pm 2^\circ\text{C}$   $T_4 > 230^\circ\text{C}$   $T_3 < 80^\circ\text{C}$   
 $dT_1 < 5^\circ\text{C}$   $dT_2 < 15^\circ\text{C}$   $t_1 > 60\text{s}$   $t_2 + t_3 > 3\text{s} \sim 5\text{s}$   $T_3 - T_1 < 100^\circ\text{C}$

图 1 波峰焊曲线图

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# 产品规格书

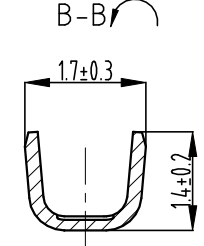
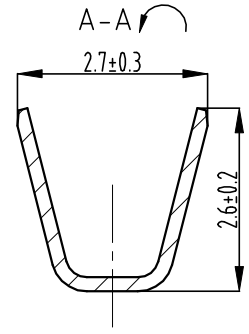
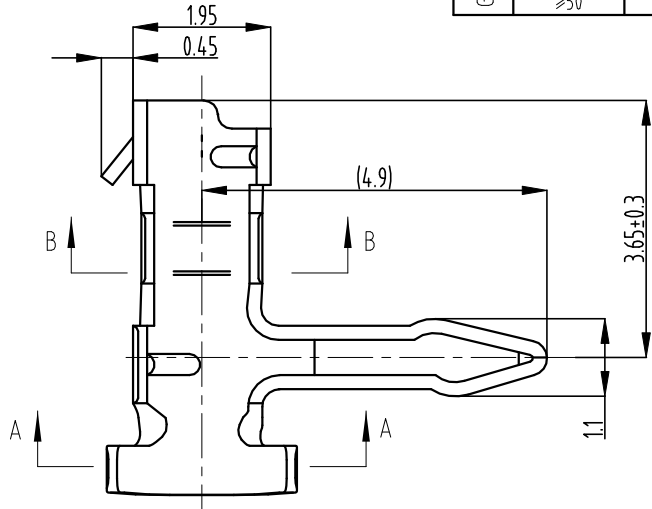
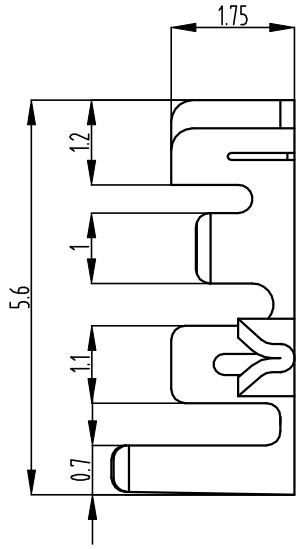
## PRODUCT SPECIFICATION

### 7.测试分组 Test sequences (Samples:5PCS)

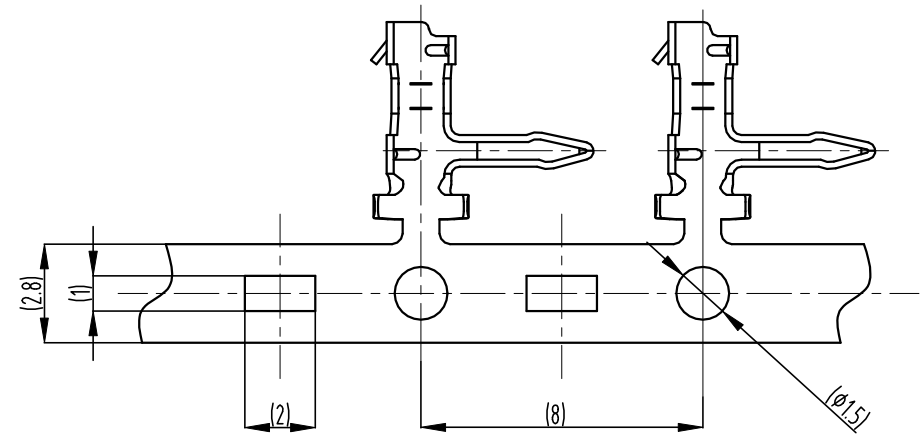
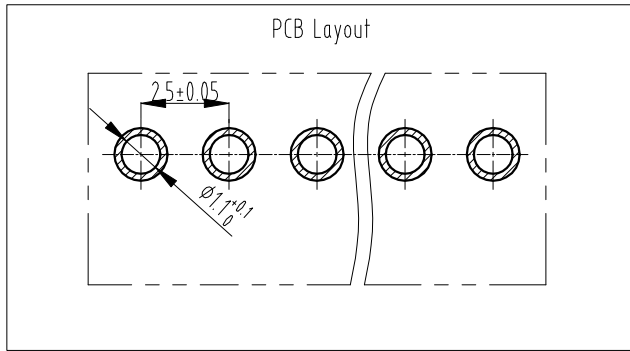
测试组 Group number	A	B	C	D	E	F	G	H	I	J
外观 Appearance	1	1	1,4	1,3	1,3	1,5	1,5	1,3	1,3	1,3
端子插入力与固定力 Insertion force and retention force for contact	2									
压着部位抗张强度 Crimp tensile strength		2								
绝缘电阻 Insulation resistance			2	3	3	3	3			
耐电压 Withstand voltage			3	4	4	4	4			
耐高温 Heat resistance				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



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



(FYI)

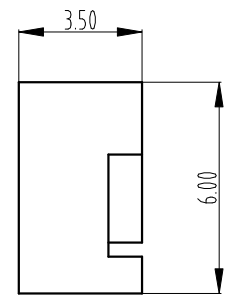
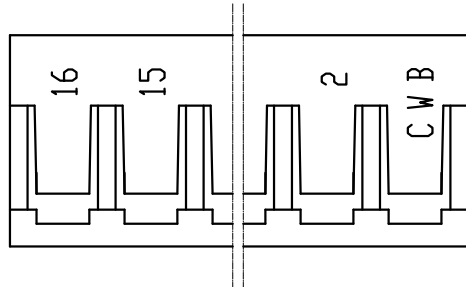


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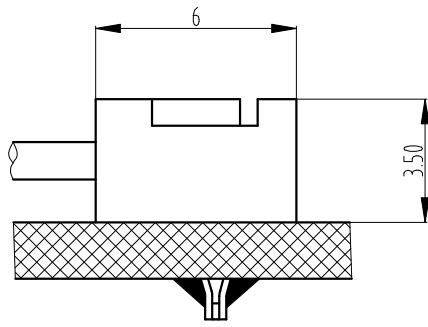
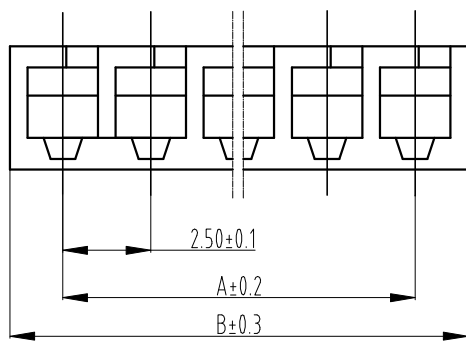
1. Material: phosphor bronze, thickness=0.2mm
2. Surface finish: tin plating
3. Matched housing: SCN-nAW
4. Applicable wires: AWG#26~AWG#22
5. Compliant to the current RoHS

CUSTOMER DRAWING						Title:	
Drawn	Shaozong.Li	2017.2.22	Unit	Scale	Size	Edition	Part No.: CZ-SCNC-**
Checked	Ji.Wu	2022.4.7	mm	10:1	A4	B	Previous part No.: SCNW/SCNW-T
Approved	Dongxu.Liu	2022.4.8	Sheet No.	1 of 1			Document No.: CP-DWG-00446
<b>CWB</b>						Specification No.: PS3953	

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					



Assembly view

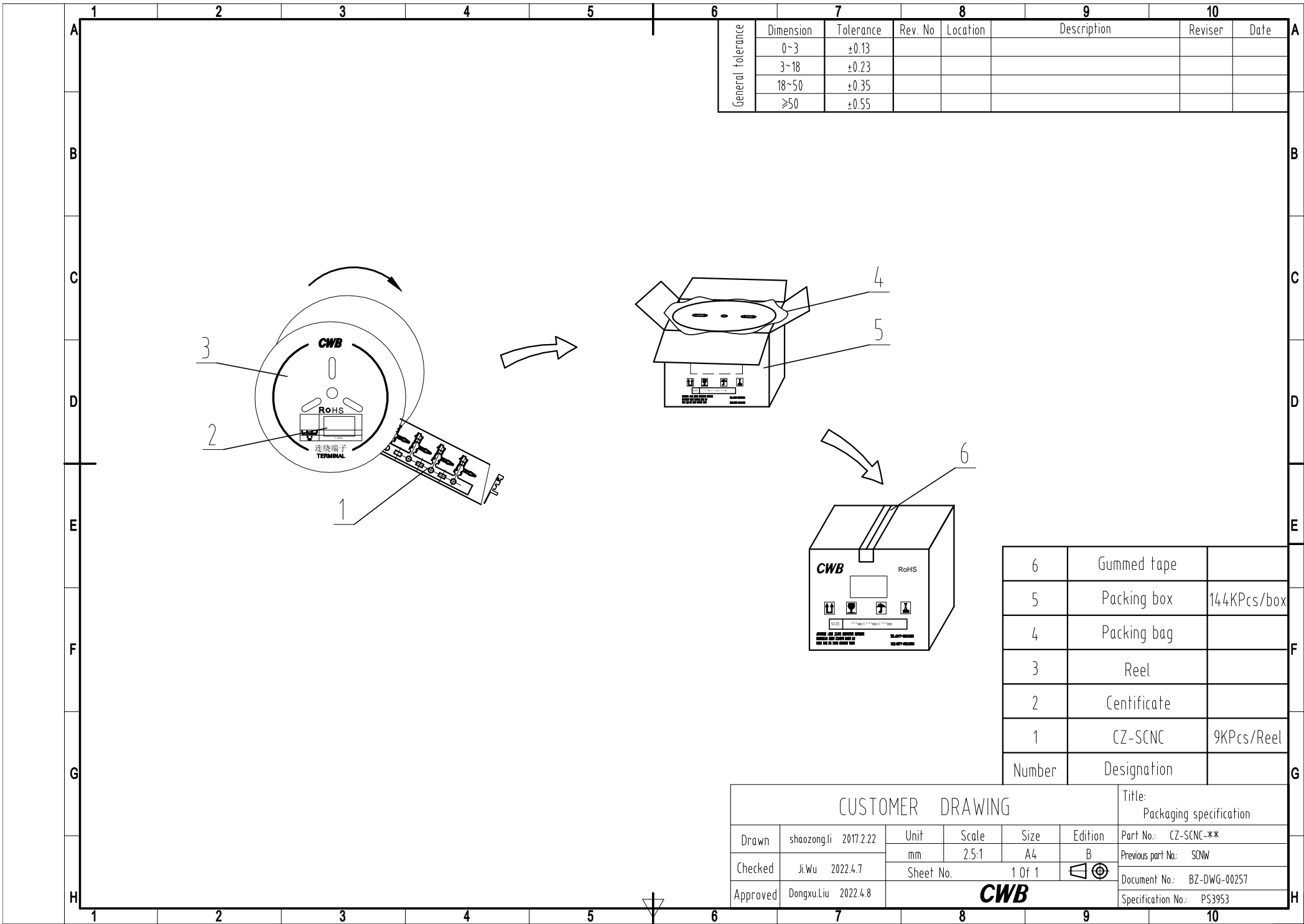


SCN-16AW	SCNW-16A	37.5	40.5
SCN-15AW	SCNW-15A	35.0	38.0
SCN-14AW	SCNW-14A	32.5	35.5
SCN-13AW	SCNW-13A	30.0	33.0
SCN-12AW	SCNW-12A	27.5	30.5
SCN-11AW	SCNW-11A	25.0	28.0
SCN-10AW	SCNW-10A	22.5	25.5
SCN-9AW	SCNW-9A	20.0	23.0
SCN-8AW	SCNW-8A	17.5	20.5
SCN-7AW	SCNW-7A	15.0	18.0
SCN-6AW	SCNW-6A	12.5	15.5
SCN-5AW	SCNW-5A	10.0	13.0
SCN-4AW	SCNW-4A	7.5	10.5
SCN-3AW	SCNW-3A	5.0	8.0
SCN-2AW	SCNW-2A	2.5	5.5
Part No.	Previous part No.	A	B
		Dimension	

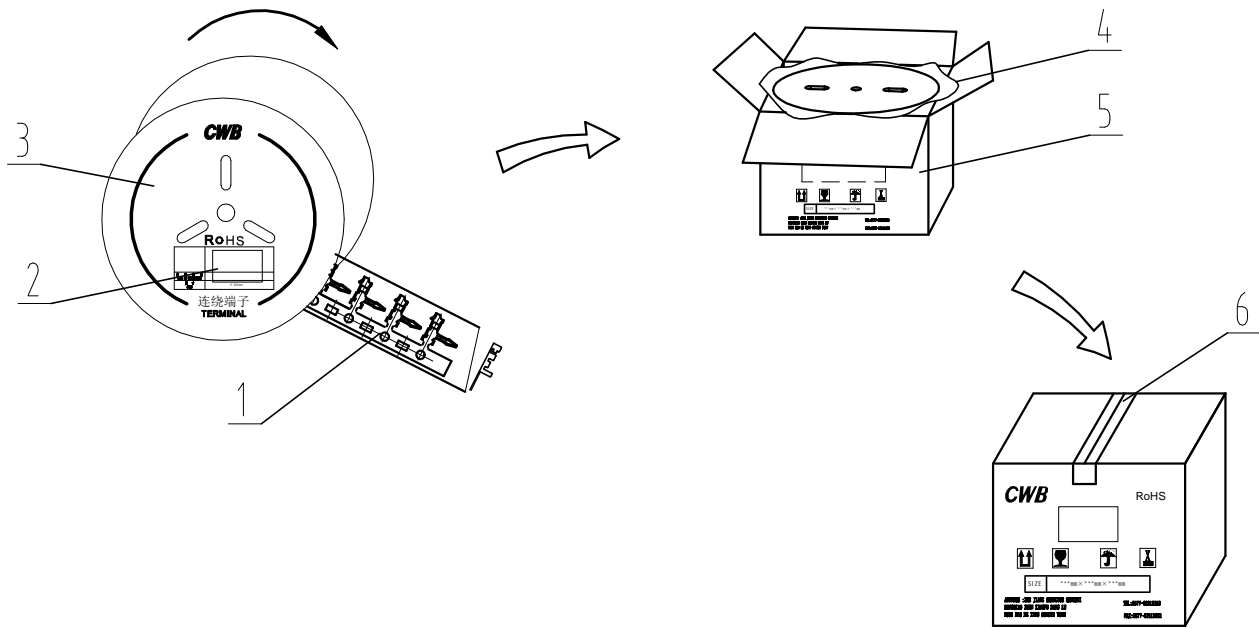
Notes:

- 1.Material: PA66 UL94 V-0/PA66 V-2
- 2.Matched contact: CZ-SCNC
- 3.Packaging: packing bag
- 4.Compliant to the current RoHS

CUSTOMER DRAWING						Title: 2.5mm pitch housing	
Drawn	Shaozong.Li 2017.2.22	Unit	Scale	Size	Edition	Part No.: SCN-nAW(**-*)	
Checked	Ji.Wu 2022.4.7	mm	5:1	A4	B	Previous part No.: SCNW-nA	
Approved	Dongxu.Liu 2022.4.8	Sheet No.	1 of 1			Document No.: CP-DWG-00447	
						Specification No.: PS3953	

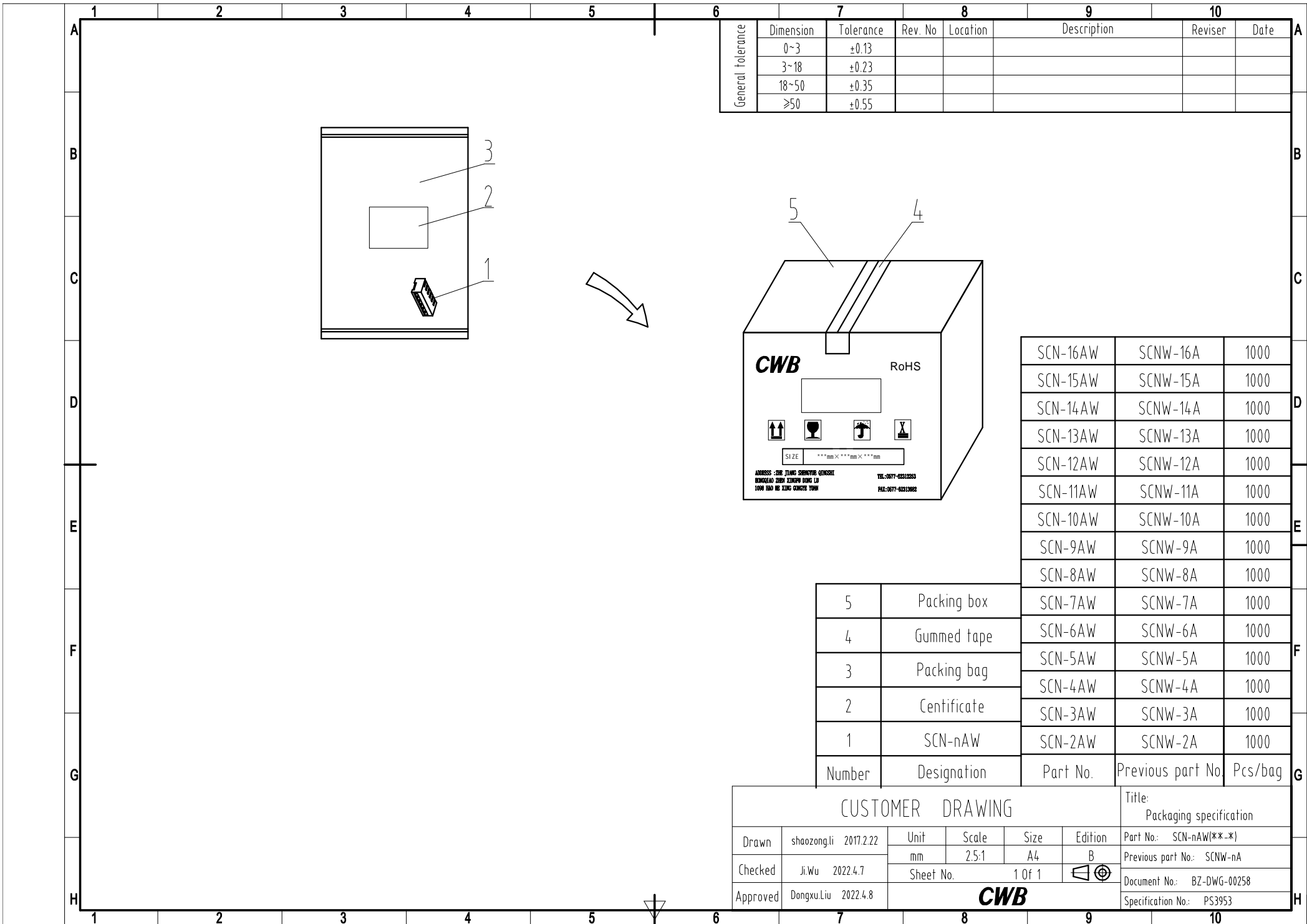


General Tolerance	Dimension	Tolerance	Rev. No	Location	Description	Reviser	Date
	0~3	±0.13					
	3~18	±0.23					
	18~50	±0.35					
	≥50	±0.55					

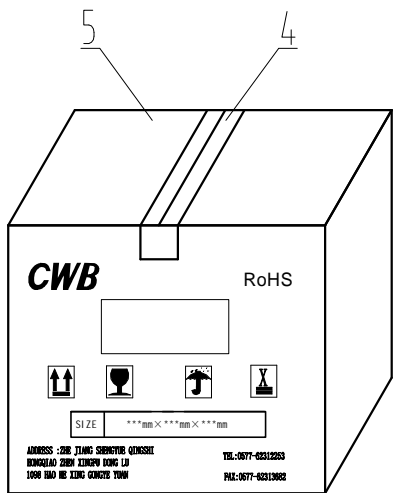
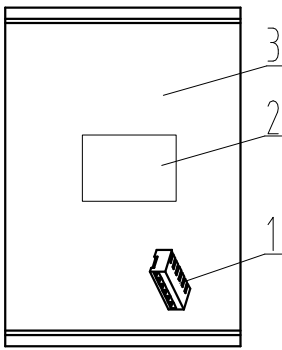


6	Gummed tape	
5	Packing box	144Kpcs/box
4	Packing bag	
3	Reel	
2	Certificate	
1	CZ-SCNC	9Kpcs/Reel
Number	Designation	

CUSTOMER DRAWING						Title: Packaging specification	
Drawn	shaozong.li	2017.2.22	Unit	Scale	Size	Edition	Part No: CZ-SCNC-**
Checked	Ji.Wu	2022.4.7	mm	2.5:1	A4	B	Previous part No: SCNW
			Sheet No.		1 Of 1	Document No: BZ-DWG-00257	
Approved	Dongxu.Liu	2022.4.8	<b>CWB</b>			Specification No: PS3953	



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					



SCN-16AW	SCNW-16A	1000
SCN-15AW	SCNW-15A	1000
SCN-14AW	SCNW-14A	1000
SCN-13AW	SCNW-13A	1000
SCN-12AW	SCNW-12A	1000
SCN-11AW	SCNW-11A	1000
SCN-10AW	SCNW-10A	1000
SCN-9AW	SCNW-9A	1000
SCN-8AW	SCNW-8A	1000

5	Packing box	SCN-7AW	SCNW-7A	1000
4	Gummed tape	SCN-6AW	SCNW-6A	1000
3	Packing bag	SCN-5AW	SCNW-5A	1000
2	Certificate	SCN-4AW	SCNW-4A	1000
1	SCN-nAW	SCN-3AW	SCNW-3A	1000
		SCN-2AW	SCNW-2A	1000
Number	Designation	Part No.	Previous part No	Pcs/bag

CUSTOMER DRAWING						Title: Packaging specification	
Drawn	shaozong.li 2017.2.22	Unit	Scale	Size	Edition	Part No.: SCN-nAW(**-*)	
Checked	Ji Wu 2022.4.7	mm	2.5:1	A4	B	Previous part No.: SCNW-nA	
Approved	Dongxu.Liu 2022.4.8	Sheet No.		1 Of 1	Document No.: BZ-DWG-00258		
<b>CWB</b>						Specification No.: PS3953	

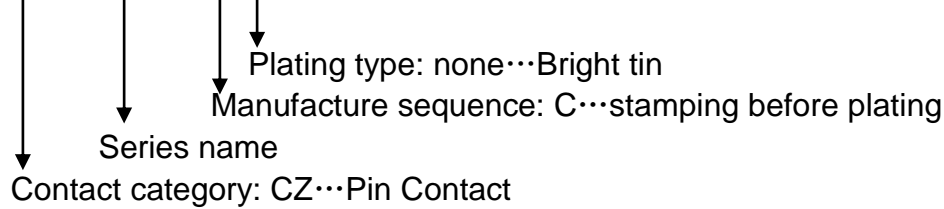
## SCN-nAW 系列命名规则

### SCN-nAW series naming conventions

#### 1. Contact

CZ-SCNC-\*\*

CZ - SCNC - C \*



#### 2. Receptacle housing

SCN-nAW (\*\*-\*)

SCN - n A W (\*\*-\*)

