



# 承认书

## APPROVAL SHEET

客户名称:

Customer

/

产品名称:

Part Name

绕线共模片式电感器

Chip Common Mode Choke Coils

产品规格:

Specification

CMC0805S 、 CMC1206S Series

版本号:

Version No.

18.01

日期:

DATE

2018-5-21

Manufacturer			Customer		
拟制	审核	确认	检验	审核	批准
Draft by	Checked by	Approve by	Check by	Checked by	Approval by
林晓华	徐雪枫	区军沛			



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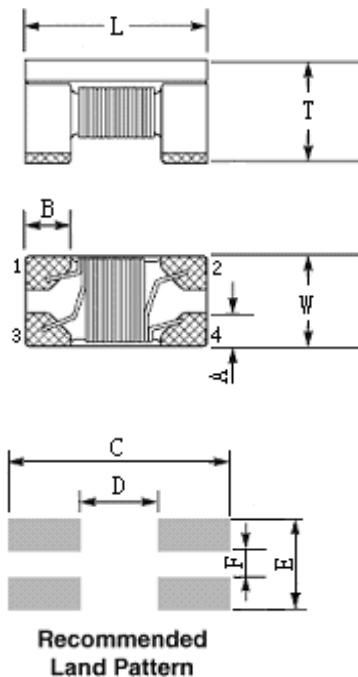


**1. 履历表 Resume**

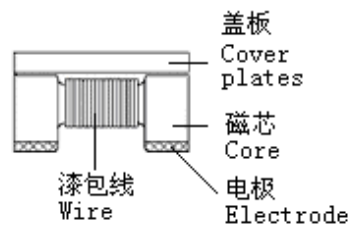
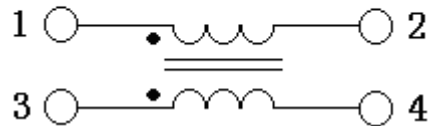
版本 Version No.	修改明细 Modify Details	日期 Date
18.01	首次发行 Initial issue	2018-5-21



## 2 外形尺寸与内部结构 Dimension & Inner-configuration:



Equivalent Circuit



序号 No.	部位 Component	材料 Material		
1	磁芯 Core	镍锌铁氧体 Ni-Zn ferrite		
2	盖板 Cover plates	镍锌铁氧体 Ni-Zn ferrite		
3	电极 Electrode	底层 Layout 0	中层 Layout 1	表层 Layout 2
		银 Ag	镍 Ni	锡 Sn
4	漆包线 Wire	铜 Cu		
5	粘接胶 Adhesive	树脂 Epoxy		

单位 Unit: mm

型号 type	L	W	T	A	B	C	D	E	F
CMC0805S	2.0±0.2	1.2±0.2	1.2±0.2	0.45	0.45	2.6	0.8	1.2	0.4
CMC1206S	3.2±0.2	1.6±0.2	1.8±0.2	0.6	0.6	3.7	1.6	1.6	0.4

## 3 产品品名构成 Product Spec. Model

CMC 1206 S — 900 T  
① ② ③ ④ ⑤

- ① 绕线共模片式电感器系列 WIRE WOUND CHIP COMMON MODE CHOKE COILS;
- ② 外型尺寸代号 DIMENSIONS: 0805 (2.0×1.2mm), 1206 (3.2×1.6mm);
- ③ 设计代号 DESIGN SYMBOL: S—电磁屏蔽型 Magnetically Shielded
- ④ 标称阻抗 IMPEDANCE: 90=90Ω; 371=370Ω; 102=1000Ω;
- ⑤ 包装类型 PACKAGING TYPE: T—卷盘包装 Tape&Reel; B—散装 Bulk。



#### 4 电性能参数表 Electrical Characteristics List

型号规格 Part NO.	客户料号 Customer P/N	误差范围 Tolerance (%)	标称阻抗 Impedance ( $\Omega$ )	测试频率 Test frequency (MHz)	直流电阻 Rdc ( $\Omega$ )max	额定电压 Rated Voltage (Vdc)max	额定电流 Idc (mA)max	绝缘电阻 IR (M $\Omega$ )min
CMC0805S-670T		$\pm 25$	67	100	0.25	50	400	10
CMC0805S-700T		$\pm 25$	70	100	0.30	50	400	10
CMC0805S-750T		$\pm 25$	75	100	0.30	50	400	10
CMC0805S-900T		$\pm 25$	90	100	0.35	50	330	10
CMC0805S-121T		$\pm 25$	120	100	0.30	50	370	10
CMC0805S-161T		$\pm 25$	160	100	0.35	50	330	10
CMC0805S-181T		$\pm 25$	180	100	0.35	50	330	10
CMC0805S-261T		$\pm 25$	260	100	0.40	50	300	10
CMC0805S-301T		$\pm 25$	300	100	0.42	50	290	10
CMC0805S-361T		$\pm 25$	360	100	0.45	50	280	10
CMC0805S-371T		$\pm 25$	370	100	0.45	50	280	10
CMC0805S-451T		$\pm 25$	450	100	0.50	50	250	10
CMC0805S-601T		$\pm 25$	600	100	0.60	50	220	10
CMC0805S-901T		$\pm 25$	900	100	0.90	50	150	10



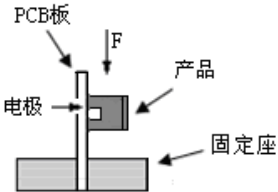
型号规格 Part NO.	客户料号 Customer P/N	误差范围 Tolerance (%)	标称阻抗 Impedance (Ω)	测试频率 Test frequency (MHz)	直流电阻 Rdc (Ω)max	额定电压 Rated Voltage (Vdc)max	额定电流 Idc (mA)max	绝缘电阻 IR (MΩ)min
CMC1206S-900T		±25	90	100	0.30	50	370	10
CMC1206S-161T		±25	160	100	0.40	50	340	10
CMC1206S-261T		±25	260	100	0.50	50	310	10
CMC1206S-371T		±25	370	100	0.50	50	300	10
CMC1206S-601T		±25	600	100	0.80	50	260	10
CMC1206S-801T		±25	800	100	0.90	50	240	10
CMC1206S-102T		±25	1000	100	1.00	50	230	10
CMC1206S-142T		±25	1400	100	1.00	50	220	10
CMC1206S-202T		±25	2000	100	1.20	50	200	10
CMC1206S-222T		±25	2200	100	1.20	50	200	10



## 5 可靠性 Reliability Data

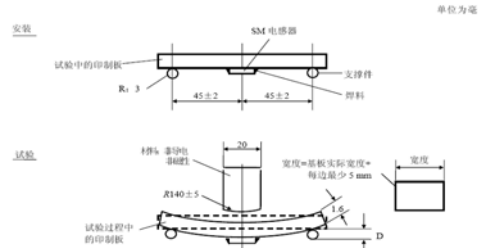
序号 No.	项目 Items	要求 Requirements	试验方法及备注 Test Methods and Remarks
1	试验用标准条件 Test Standard Conditions	①、除非另有规定,所有试验和测量在下述条件进行。Unless otherwise specified, all tests and measurements shall be carried out in the following conditions. a) 温度 Temperature: 15℃~+35℃; b) 相对湿度Relative humidity: 25%~75%; c) 气压 pressure: 86 kPa~106 kPa。 ②、在上述条件下测定有异议发生场合,按下述条件进行。Under the above conditions, the conditions for the determination of dissension shall be conducted according to the following conditions. a) 温度 Temperature: 20℃±1℃; b) 相对湿度 Relative humidity: 63%~67%; c) 气压 pressure: 86 kPa~106 kPa。	
2	工作温度范围 Operating Temperature Range	-40℃~+85℃	/
3	可焊性 Solder ability	①外观无可见损伤痕迹; No visible mechanical damage. ②端电极表面焊锡覆盖率。 Electrode surface solder coverage. CMC series: ≥80%。	在 245±5℃熔融的焊锡 (96.5%Sn/ 3.0%Ag/0.5%Cu) 中浸置 5±1s。 Dip pads in flux and dip in solder pot(96.5Sn/3.0Ag/0.5Cu)at 245±5℃ for 5±1s.
4	耐焊接热 Resistance to Soldering	①外观无可见损伤痕迹; No visible mechanical damage. ②阻抗变化不超过±20%; Impedance shall not change more than ±20%.	在 260±5℃熔融的焊锡 (96.5%Sn/ 3.0%Ag/0.5%Cu) 中浸置 10±1s。 Dip pads in flux and dip in solder pot(96.5Sn/3.0Ag/0.5Cu)at 260±5℃ for 10±1s.
5	绝缘电阻 Insulation Resistance	CMC series: ≥10 MΩ	两绕组间施加额定电压,持续一分钟。 The rated voltage is applied between the two windings for a minute.
6	振动 Vibration	①外观无可见损伤痕迹; No visible mechanical damage. ②阻抗变化不超过±20%; Impedance shall not change more than ±20%.	振幅 1.5mm, 频率 10~55Hz, 每个方向 (X、Y、 Z) 保持 2 小时。Inductors shall be subjected to vibration of 1.5mm amplitude frequency 10~55Hz (10Hz to 55Hz to 10Hz in a period of 1 minute) for 2h in each of three(X、Y、 Z) axes.



序号 No.	项目 Items	要求 Requirements	试验方法及备注 Test Methods and Remarks										
7	端电极强度 Adhesion of electrode	①试验后端电极无脱落; The end electrode did not fall off after the test. ②外观无可见损伤痕迹。 No visible mechanical damage.	将产品焊在 PCB 板上, 按下图、表所示方向及要求施加作用力。Weld the product on the PCB board, and apply force as shown in the diagram, direction and requirement.  <table border="1" data-bbox="1005 784 1460 996"> <thead> <tr> <th>尺寸规格 Size</th> <th>施加力要求</th> </tr> </thead> <tbody> <tr> <td>CMC0805 Series</td> <td>5 N</td> </tr> <tr> <td>CMC1206 Series</td> <td>10 N</td> </tr> <tr> <td colspan="2">Keep time: (10±1)s</td> </tr> <tr> <td colspan="2">Speed: 1.0 mm/s.</td> </tr> </tbody> </table>	尺寸规格 Size	施加力要求	CMC0805 Series	5 N	CMC1206 Series	10 N	Keep time: (10±1)s		Speed: 1.0 mm/s.	
尺寸规格 Size	施加力要求												
CMC0805 Series	5 N												
CMC1206 Series	10 N												
Keep time: (10±1)s													
Speed: 1.0 mm/s.													
8	耐低温 Low temperature resistance	①外观无可见损伤痕迹; No visible mechanical damage. ②阻抗变化不超过±20%; Impedance shall not change more than ±20%.	在温度 $-40 \pm 2^{\circ}\text{C}$ 的环境中存放 $1000 \begin{matrix} +24 \\ -0 \end{matrix}$ h; Component shall be subjected to $-40 \pm 2^{\circ}\text{C}$ $\begin{matrix} +24 \\ -0 \end{matrix}$ h.										
9	耐高温 High Temperature	①外观无可见损伤痕迹; No visible mechanical damage. ②阻抗变化不超过±20%; Impedance shall not change more than ±20%.	在温度 $85 \pm 2^{\circ}\text{C}$ 的环境中存放 $1000 \begin{matrix} +24 \\ -0 \end{matrix}$ h; Component shall be subjected to $85 \pm 2^{\circ}\text{C}$ $\begin{matrix} +24 \\ -0 \end{matrix}$ h.										
10	温度特性 Temperature Characteristic	阻抗随温度变化率不超过±20%。 Impedance shall not change more than ±20%.	①在以下每个温度保持 4 小时。 In the following each temperature keep the 4 h. a) $20 \pm 2^{\circ}\text{C}$ ; b) $-40 \pm 2^{\circ}\text{C}$ ; c) $20 \pm 2^{\circ}\text{C}$ ; d) $85 \pm 2^{\circ}\text{C}$ 。 ②然后以 c) 温度为基础下分别与最高温及最低温下阻抗偏差值计算变化率。 Then based on the temperature of C, the variation rate of the impedance deviation at the highest temperature and the lowest temperature is calculated respectively.										





序号 No.	项目 Items	要求 Requirements	试验方法及备注 Test Methods and Remarks
11	温度循环 Thermal Shock	①外观无可见损伤痕迹; No visible mechanical damage. ②阻抗变化不超过±20%; Impedance shall not change more than ±20%.	① +85°C 60 分钟 ↔ -40°C 60 分, 钟循环 32 次; +85°C 60minutes ↔ -40°C 60minutes 32 Cycles. ②转换时间: 2~3 分钟。 Transforming interval: 2~3 min.
12	高温负载 High temperature load	①外观无可见损伤痕迹; No visible mechanical damage. ②阻抗变化不超过±20%; Impedance shall not change more than ±20%.	① 施加额定电流; Apply the rated current. ② 在 85 ± 2°C 温度条件下存放 1000 <sup>+24</sup> - 0 h; Component shall be subjected to 85 ± 2°C <sup>+24</sup> for 1000 - 0 h.
13	恒定湿热 Static Humidity	①外观无可见损伤痕迹; No visible mechanical damage. ②阻抗变化不超过±20%; Impedance shall not change more than ±20%.	放置在于湿度 90%~95%, 温度 60 ± 2°C 的环境中 <sup>+24</sup> 存放 1000 - 0 h。 Component shall be subjected to 90% ~ <sup>+24</sup> 95%RH. at 60 ± 2°C for 1000 - 0 h .
14	抗弯强度 Bending strength	外观无可见损伤痕迹; No visible mechanical damage.	①将产品安装于试验基板上; 在垂直方向施加力 (如下图所示)。Install the Component on the test substrate; Apply force in the vertical direction (as shown below). ②该板应在 (1 ± 0.5) mm/s 的弯曲速率向下弯曲 2 mm, 保持时间 ≥ 5 s。The epoxy plate should bend down to 2 mm at the bending rate of (1 ± 0.5) mm/s, Keep time ≥ 5 sec. 
15	耐溶剂性 Solvent Resistance	①外观无可见损伤痕迹; No visible mechanical damage. ②阻抗变化不超过±20%; Impedance shall not change more than ±20%.	将元件浸泡在 23 ± 5°C 的异丙醇溶液中, 保持 5 ± 0.5 分钟。 Soak in the element 23 ± 5°C in isopropyl alcohol solution, keep 5 ± 0.5 min.

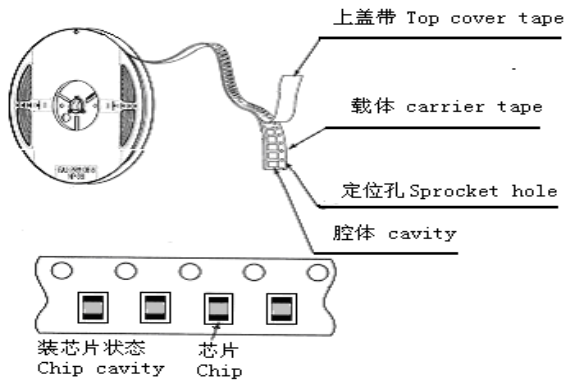
注: 以上要求测试电性能的项目, 在室温下放置至少 2 h 后在 48 h 内进行测试。

Note: When there are questions concerning, test within 48 h after placing at room temperature for at least 2 h.



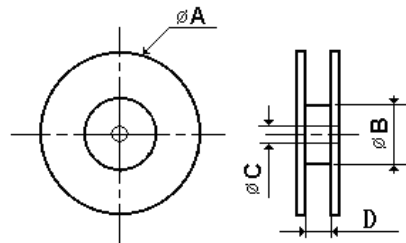
## 6 包装 Package

### 1) 编带图 Taping drawings

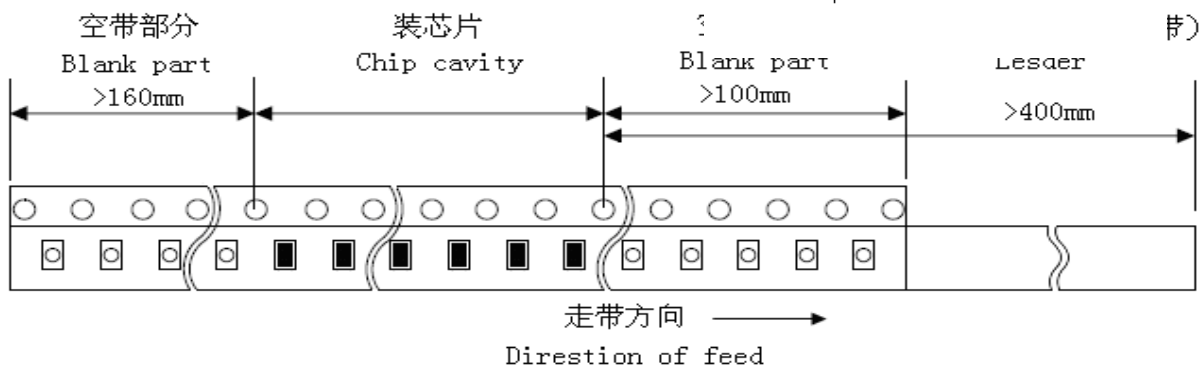


### 2) 卷盘尺寸 Reel dimensions (Unit:mm)

Part NO.	ΦA typ.	ΦB typ.	ΦC typ.	D typ.
0805~1206	178	60	13	8.4

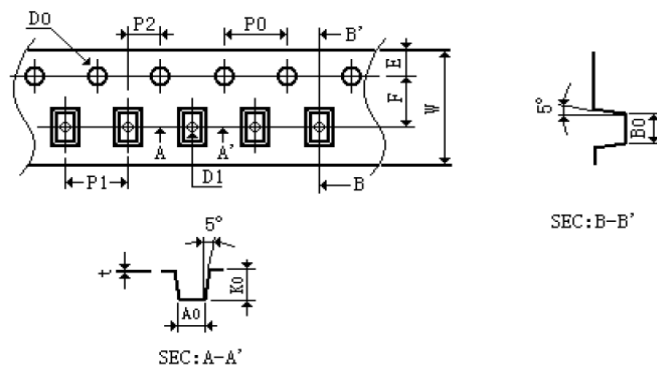


### 3) 导带及空格部分 Leader and blank portion



### 4) 编带尺寸 Taping dimensions (Unit: mm)

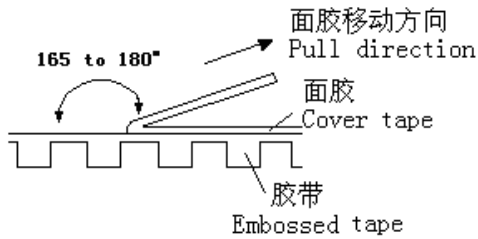
#### ● 塑料胶带 Embossed tape



Part NO.	W	E	F	D0	D1	P0	P1	P2	P0×10	t	A0	B0	K0
0805	8.00	1.75	3.50	1.50	0.65	4.00	4.00	2.00	40.00	0.23	1.50	2.25	1.40
1206	8.00	1.75	3.50	1.50	0.65	4.00	4.00	2.00	40.00	0.23	1.90	3.55	2.00



### 5) 剥离力检验 Peeling off force



#### ①盖带的剥离力要求 Peeling required

0805~1206 系列 : 20 克~80 克

0805~1206 series : 20g~80g

#### ②测试条件 Test condition

盖带剥离速度: 300mm/min±10%

Speed of peeling off : 300mm/min±10%

盖带剥离角度: 165° ~180°

Angle of peeling off: 165°~180°

### 6) 包装数量 (单位: 粒) Packaging number (Unit: Pcs )

类型 Size		1206	0805
每卷数量 Per Reel		2000	3000
每盒数量 Per Box	3 卷盒	6000	9000
	5 卷盒	10000	15000
	10 卷盒	20000	30000
每箱数量 Per Case	1.5 盒箱	30000	45000
	3 盒箱	60000	90000
	4 盒箱	80000	120000
	5 盒箱	120000	180000

### 7) 标签粘贴位置 Label stick station

卷盘标签 Reel label	纸盒标签 Carton label	纸盒标签 Carton label	外箱标签 Outer box label

## 7 推荐使用的焊接曲线 Recommended soldering profile

### 1) 焊接条件 Soldering Conditions

本产品建议使用回流焊接法。

Applicable soldering process to the products is reflow soldering.

#### ① 焊剂要求 Flux, Solder

- 使用松香基助焊剂, 禁止使用卤化物含量超过 0.2(wt)%的强酸性助焊剂。  
Don't use highly acidic flux with halide content exceeding 0.2(wt)%(chlorine conversion value).
- 使用无铅焊料(96.5Sn /3.0Ag/0.5Cu)。  
Using lead-free solder (96.5Sn /3.0Ag/0.5Cu)。



## ② 焊接要求 Soldering conditions

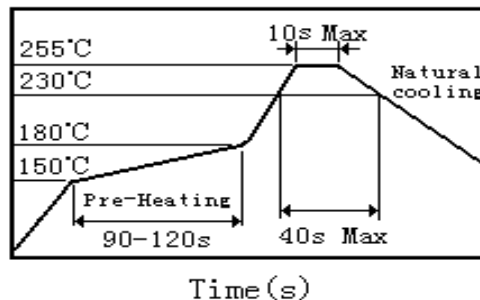
- 预热时，产品表温与焊料温度的温差最大不允许超出 150℃，焊接完冷却时，产品表温与溶剂温度之间的温差最大不超过 100℃。预热不足有可能引发产品表面裂纹，从而导致产品品质下降。

Pre-heating should be in such a way that the temperature difference between solder and ferrite surface is limited to 150℃ max. Also cooling into solvent after soldering should be in such way that the temperature difference is limited to 100℃ max. Un-enough pre-heating may cause cracks on the ferrite, resulting in the deterioration of product quality.

- 产品要在以下画出的曲线允许的范围进行焊接。其它焊接条件可能引起产品电极的腐蚀。当焊接重复时，允许的时间为第一次做的累计时间。

Products should be soldered within the following allowable range indicated by the slanted line. The excessive soldering conditions may cause the corrosion of the electrode. When soldering is repeated, allowable time is the accumulated time.

## 2) 回流焊曲线 Reflow soldering profile



## 3) 手工焊接 Iron soldering

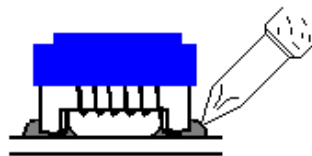
烙铁温度：350℃ (Max)

功率：最大为 30W

烙铁停留时间：<5S (注意不要将烙铁碰到产品线圈及包封层)。

Perform soldering at 350℃ on 30W max.

Soldering Time: < 5S (Take care not to apply the tip of the soldering iron to the terminal electrodes).



## 8 清洗 Cleaning

### 1) 清洗条件 Cleaning Conditions

a. 清洗温度：60℃ (Max)      Cleaning temperature: 60℃ max.

b. 清洗时间：5 分钟 (Max)      Cleaning time: 5 minutes Max.

c. 超声波功率：最大为 200W      Ultrasonic output power: 200W max.

## 9 存储要求 Storage Requirements

### 1) 存储期限 Storage period

距电感公司出厂检验时间 6 个月内，产品可以使用检验时间可以通过包装外侧标记的检验号确认。若时间超过 6 个月，应检查焊接性能后方可使用。



Products which inspected in INDUCTOR COMPANY over 6 months ago should be examined and used, which can be Confirmed with inspection No. marked on the container. Solder ability should be checked if this period is exceeded.

## 2) 存储条件 Storage conditions

- (1) 存放货物的库房应满足以下条件：温度：-10 ~ +40℃，相对湿度：30 ~ 70%。
- (2) 禁止将产品保管在腐蚀性物质中，如硫磺、氯气或酸，否则将引起端头氧化，导致降低焊接性。
- (3) 为了避免受潮气、灰尘等物质的影响，产品应保管于货架上。
- (4) 产品保管在库房中，应避免热冲击、振动以及直接光照等等。
- (5) 产品应密封包装。

(1) Products should be storage in the warehouse on the following conditions:

Temperature : -10~+40℃ Humidity: 30~70% relative humidity

(2) Don't keep products in corrosive gases such as sulfur, chlorine gas or acid , or it may case oxidization of Electrodes resulting in poor solder ability.

(3) Products should be stored on the palette for the prevention of the influence from humidity, dust and so on.

(4) Products should be stored in the warehouse without heat shock, vibration, direct sunlight and so on.

(5) Products should be stored under the airtight packaged condition.

## 10 ODS（消耗臭氧层物质）的使用情况 Usage Of ODS

对于以下所列物质，我公司在生产过程中绝不使用。

ODS: CCl<sub>4</sub>（四氯化碳）、HCFC 等。

For ODS listed below , we don't use in process.

ODS: CCl<sub>4</sub>, HCFC, etc.

## 11 注意事项 Notes

(1) RoHS 指令 Response to RoHS directive

本公司产品符合 RoHS 指令。

Our products are RoHS compliance.

(2) 本承认书保证我司产品作为一个单体时的质量情况，当我司产品被安装到贵司产品上时请保证贵司的产品已根据贵司的规范进行了有效评价和确认。

This product specification guarantees the quality of our product as a single unit, Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.

(3) 如果贵司对我司产品的试用已超过了本测试规范所界定的产品功能，对于此所引发的失效我司将不予保证。

We can't warrant against failure caused by any use of our product that deviates from the intended use as described in this product specification.

(4) 为防止断线，请不要使用锋利的物体接触线圈，如镊子。

Do not touch wire with sharp objects such as tweezers to prevent wire breakage.