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客户版本号	A0

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规格书

SPECIFICATIONS

产 品 类 型 Product type	铝电解电容器 Aluminum Electrolytic Capacitor
产 品 系 列 Series	CD284L
产 品 规 格 Description	25 V 330 μ F ϕ 8 * 11.5
产 品 编 码 Part No.	ECR1ELY331MLL080011E
客 户 编 码 Customer P/N	/

南通江海电容器股份有限公司

Nantong Jianghai Capacitor Co., Ltd.

地址：江苏省南通市平潮镇通扬南路 79 号

No.79 South Tongyang Road Pingchao Town

Nantong City Jiangsu Province PR China

TEL: 0086--0513--86726020 / FAX: 0086--0513--86571812

日 期 Date	批 准 Approved by	审 核 Checked by	制 定 Drawn by
2021.12.18	姚玉英	孙何欢	黄熊惑

客户承认栏 User

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规格书变更记录

(Change history of specification)

[illegible]

SPEC LIST FOR CD284L SERIES

JH P/N		额定电压 Rated Voltage UR(V)	标称容量 Capacitance CAP(uF)	容量偏差 Capacitance Tolerance (%)	损耗角正切 Dissipation Factortgδ(%) 20℃ 120Hz	漏电流 Leakage Current LC(uA) 20℃ 2 min	Z (Ω) 20℃ 100k Hz
ECR1ELY331MLL080011E		25	330	±20	14	82.5	0.056
标准尺寸 D*L(mm)	极限尺寸 D*L(mm)	Pin距 (mm)	额定纹波 Ripple current mArms 105 ℃ 100k Hz	寿命 Lifetime H 105 ℃	脚型 (mm)	备注	
8 * 11.5	8.5 * 13	3.5	945	8000	长脚	PET黑色套管	

部品号说明Explanation of Part Number:

ECR	1E	LY	331	M	LL	080011	E	*
引线式	标称电 压代号	产品系列 代码	额定容量 代号	容量偏差	脚型	产品 尺寸	套管 材质	特殊要求 代码
Radial	Rated Voltage Code	Series Code	Nominal Capacitance Code	Capacitance Tolerance	Lead Form Code	Size Code	Sleeve Code	Customer Special Requirements Code
	25	CD284L	330	±20	Long Lead	8 * 11.5	(PET)	-

1. 适用范围 Adapt Range

本产品规格书适用于南通江海电容器股份有限公司 CD284L 型铝电解电容器产品。
This product specification is adapted to CD284L series Aluminum Electrolytic Capacitors produced by Nantong Jianghai Capacitor Co.,Ltd .

2. 使用温度范围 Operating Temperature Range:

-40 ~ 105 ℃

3. 浪涌电压 Surge Voltage

工作电压(V) Rated voltage	6.3	10	16	25	35	50	63	80	100
浪涌电压(V) Surge voltage	7.2	13	20	32	44	63	79	100	125

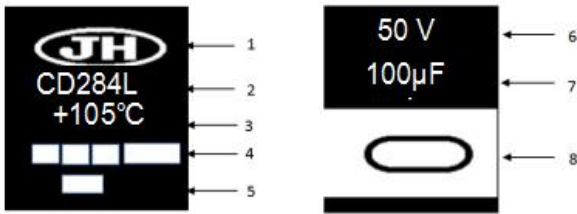
4. 损耗 Dissipation Factor (20℃，120Hz)

工作电压(V) Rated voltage	6.3	10	16	25	35	50	63	80	100
损耗角正切值 Tan (%) MAX	22	19	16	14	12	10	9	8	8

When nominal capacitance is over 1000μF, Tan shall be added 0.02 to the listed valued with increase of every 1000 μF .

5. 静电容量范围 Capacitance Range 8.2 μF ~ 8200 μF

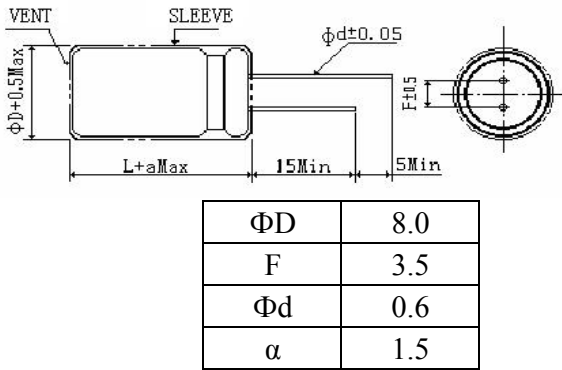
6. 标识 Marking (Example: CD284L 50 V 100 μF)



NO.	项 目 Item	NO.	项目Item
1	商 标 Brand	5	容量偏差:Capacitance Tolerance
2	产品系列Products series	6	额定电压Rated voltage
3	上限温度: Max temperature	7	静电容量Capacitance
4	*年度标记 Year code	8	极 性 Polarity

注：我司有3种套管印字方式：1. 激光印字；2. 油墨印字；3. 碳带印字；如客户有特殊要求时，按客户要求执行。

7. 外形图 Dimensions



8.纹波电流系数 Multiplier for Ripple Current

8.1 频率系数 Frequency Coefficient

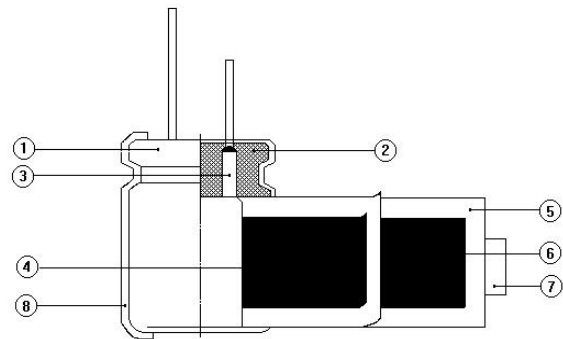
Freq(Hz) Cap(μF)	120	1k	10k	100k
8.2~33	0.42	0.70	0.90	1.00
47~270	0.50	0.73	0.92	1.00
330~680	0.55	0.77	0.94	1.00
820~1800	0.60	0.80	0.96	1.00
2200~6800	0.70	0.85	0.98	1.00

8.2 温度系数 Temperature Coefficient

Temperature(℃) Rated Voltage(v)	≤65	+85	+105
6.3~100	2.0	1.7	1.0

9.构造图及材料表 Frame drawing and Material list

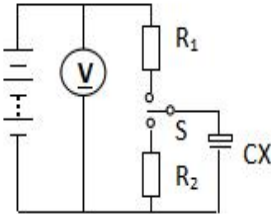
9.1构造图 (Frame drawing)

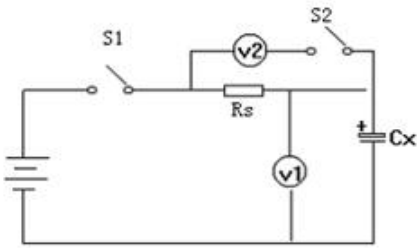


9.2 材料表 (Material Table)

NO	构成部件 parts	材质 Material	NO	构成部件 parts	材质 Material
1	铝壳 Case	铝 Aluminum	6	负极箔 Cathode Foil	铝 Aluminum
2	橡皮塞 Rubber	合成橡胶 Synthetic rubber	7	胶带 Tape	聚丙烯 Polypropylene
3	引出线 Terminal	铝+CP线 Aluminum + CP wire	8	套管 Sleeve	PET
4	正极箔 Anode Foil	铝 Aluminum	9	电解液 Electrolyte	有机溶剂 Organic Solvent
5	隔离纸 Separator	电解电容器纸 Electrolytic Capacitors paper			

10. 性能特征 Specifications

NO	项 目 Items	条 件 Conditions	规 格 Specifications
10.1	最大允许纹波电流 Maximum permissible ripple current	温度 Temperature : 105 $\pm$ 2 $^{\circ}$ C 电压: 直流电压值+交流电压峰值 $\leq$ 标称电压 Voltage: DC Voltage + peak ripple voltage $\leq$ Rated voltage	见规格表 Refer to SPEC LIST
10.2	浪涌电压 Surge Voltage	在下面规定的温度下, 通过指定的浪涌电压, 6.0分钟(充电30秒, 放电5分30秒)为一周, 往返1000回合, 常温常湿下放置1~2小时达到热平衡状态测定满足 The capacitor shall be subjected to 1000 cycles at a temperature specified below, each consisting of a charge period of 30 $\pm$ 5s, followed by a discharge period of approx 5min.30 s. And the capacitor shall be stored 1~2 hours under standard atmospheric conditions to obtain thermal stability, after which measurement shall be made 应加电压: 见3项 Test voltage: see 3 温度: 15~30 $^{\circ}$ C Test Temperature : 15~30 $^{\circ}$ C 测试回路 Measurement circuit  R1: 串联保护电阻 (1K Ω) Protective series resistor (1K Ω) V: 直流电压表 DC Voltage R2: 放电电阻 Discharge resistor (1K Ω) S: 切换开关 Switch Cx: 待测电容器 Test Capacitor	漏电流: 不超过规定值 Leakage Current: Not more than the specified value 容量变化: 初始值的 $\pm$ 15%以内 Capacitance change: Within $\pm$ 15% of the initial value 损耗角正切: 不超过规定值 Dissipation Factor : Not more than the specified value
10.3	静电容量 (允许偏差) Capacitance (Tolerance)	测试频率: 120 Hz, Measuring frequency : 120 Hz 测试电压: 0.5 Vrms or less Measuring voltage : 0.5Vrms or less DC bias voltage : +1.5~ 2.0 V DC	静电容量允许偏差 $\pm$ 20% Capacitance Tolerance $\pm$ 20%
10.4	损耗角正切(tg δ) Dissipation Factor	测试条件与静电容量相同 Measurement shall be made under the same conditions as those given for the measurement of capacitance	见规格表 Refer to SPEC LIST

NO	项 目 Items	条 件 Conditions	规 格 Specifications
10.5	漏电流 Leakage Current	电容器接$1000\pm 10\Omega$的保护电阻施加电压 2 分钟后的测试电流。 The rated voltage shall be applied across the capacitor and its protective resistor which shall be $1000\pm 10\Omega$. The leakage Current shall then be measured after an electrocution period of 2 min . The leakage current shall calculated by the following equation. 漏电流: $(I) = E/R_s$ Leakage current: E: 直流电压表的电压值 Voltage measured with DC voltmeter R_s:标准电阻的电阻值 Resistance of the protective resistor 测定电路measurement circuit:  电压将下法 (voltage drop method) R_s:标准电阻的电阻值 ($1000\pm 10\Omega$) protective resistor 直流电压表或电子电压表 DC voltmeter or electronic voltmeter S1:开关switch S2:电压表保护用变换开关 Protective switch for a voltmeter CX:待测电容器test capacitor	0.01CV或 3uA以下(2分钟取大值) Less than 0.01CV or 3uA Whichever larger (2min) C: 标称静电容量 (uF) Capacitance V: 额定电压 (V) Rated voltage

NO	项 目 Items	条 件 Conditions																												
10.6	高低温特性 Characteristic at High and low temperature	电容器根据下表的次序处理 The capacitor shall be subjected in turn to the procedures specified below. <table border="1"> <tr> <th>阶段 Step</th><th>温 度 Temperature</th><th>时 间 Time</th></tr> <tr> <td>1</td><td>20±2℃</td><td>热平衡状态 Thermal equilibrium</td></tr> <tr> <td>2</td><td>-40 ±3℃</td><td>*2 hours</td></tr> <tr> <td>3</td><td>20±2℃</td><td>热平衡状态 Thermal equilibrium</td></tr> <tr> <td>4</td><td>105 ±2℃</td><td>*2 hours</td></tr> <tr> <td>5</td><td>20±2℃</td><td>热平衡状态 Thermal equilibrium</td></tr> </table> * 电容器放置在每一温度下，待阻抗或电容量稳定后方可测试。 The capacitor should be stored at each temperature until measured impedance or capacitance are stabilized . <table border="1"> <tr> <td rowspan="2">阶段2 Step 2</td><td>阻抗比（对阶段1） Impedance ratio</td><td>见10.10项 refer to No 10.10</td></tr> <tr> <td>静电容量变化率(对阶段1) Change in capacitance</td><td>静电-20~0% within -20~0%</td></tr> <tr> <td rowspan="2">阶段4 Step 4</td><td>静电容量变化率(对阶段1) Change in capacitance</td><td>静电0~+20% within 0~+20% of step 1</td></tr> <tr> <td>漏电流 Leakage Current</td><td>规定值5倍以下 Less than 500% of the specified value</td></tr> </table> 阶段1：测定容量，损耗和阻抗值。 Step 1: Capacitance, Dissipation Factor and impedance shall be measured. 阶段2：放置2小时后，达到热平衡状态再测。 Step 2： After the capacitor being stored for 2 hours, Capacitance, Dissipation Factor and impedance shall be Measured. The measurement shall be made at thermal stability. 阶段4：放置2小时后，达到热平衡状态再测。 Step 4： After the capacitor being stored for 2 hours, Capacitance, Dissipation Factor and impedance shall be Measured. The measurement shall be made at thermal stability.	阶段 Step	温 度 Temperature	时 间 Time	1	20±2℃	热平衡状态 Thermal equilibrium	2	-40 ±3℃	*2 hours	3	20±2℃	热平衡状态 Thermal equilibrium	4	105 ±2℃	*2 hours	5	20±2℃	热平衡状态 Thermal equilibrium	阶段2 Step 2	阻抗比（对阶段1） Impedance ratio	见10.10项 refer to No 10.10	静电容量变化率(对阶段1) Change in capacitance	静电-20~0% within -20~0%	阶段4 Step 4	静电容量变化率(对阶段1) Change in capacitance	静电0~+20% within 0~+20% of step 1	漏电流 Leakage Current	规定值5倍以下 Less than 500% of the specified value
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	漏电流 Leakage Current	规定值5倍以下 Less than 500% of the specified value																												

NO	项 目 Items	条 件 Conditions	规 格 Specifications														
10.7	压力释放 Pressure relief	一. 交流试验 A.C. test 施加电压值: Applied voltage 交流电压不超过0.7倍的额定直流电压或250V交流电压, 两者取小值。 A.C. voltage not exceeding 0.7 times the rated Direct voltage or 250V AC whichever is the lower. 频率 Frequency : 50 Hz或60 Hz 串联电阻参照下表 Series resistor refer to the table below. <table><tr><td>Capacitance</td><td>Series resistor</td></tr><tr><td>$C \leq 1 \mu\text{F}$</td><td>$1000 \pm 100 \Omega$</td></tr><tr><td>$1 \mu\text{F} < C \leq 10 \mu\text{F}$</td><td>$100 \pm 10 \Omega$</td></tr><tr><td>$10 \mu\text{F} < C \leq 100 \mu\text{F}$</td><td>$10 \pm 1 \Omega$</td></tr><tr><td>$100 \mu\text{F} < C \leq 1000 \mu\text{F}$</td><td>$1 \pm 0.1 \Omega$</td></tr><tr><td>$1000 \mu\text{F} < C \leq 10000 \mu\text{F}$</td><td>$0.1 \pm 0.01 \Omega$</td></tr><tr><td>$10000 \mu\text{F} < C$</td><td>*</td></tr></table> * 电阻相当于试验频率阻抗的 1/2 Resistance is equivalent to a half of Impedance by test frequency. 二. 直流试验 D.C. test 施加同额定电压相等的反电压, 限制电流为1A Reversed polarity D.C. rated voltage shall be applied to the capacitor,the DC current shall be limited to be 1A. 注: 1、该规定适用于铝壳直径6mm 以上的电容器。 2、试验开始30 Min 后, 防爆装置不动作时, 停止试验。 3、上述两种实验方法选其中一种进行试验。 Note: 1. This requirement applies to capacitors with a diameter of 6mm or more. 2. When the pressure relief device does not open even 30 minutes after commencement of this test, the test may be ended. 3. Either of the above test method could be selected in the test.	Capacitance	Series resistor	$C \leq 1 \mu\text{F}$	$1000 \pm 100 \Omega$	$1 \mu\text{F} < C \leq 10 \mu\text{F}$	$100 \pm 10 \Omega$	$10 \mu\text{F} < C \leq 100 \mu\text{F}$	$10 \pm 1 \Omega$	$100 \mu\text{F} < C \leq 1000 \mu\text{F}$	$1 \pm 0.1 \Omega$	$1000 \mu\text{F} < C \leq 10000 \mu\text{F}$	$0.1 \pm 0.01 \Omega$	$10000 \mu\text{F} < C$	*	防爆装置释放时, 无燃烧、无爆炸或铝壳和封口材料的分离。 The pressure relief device shall open in such a way as to avoid any danger of fire or explosion of Capacitor elements .
Capacitance	Series resistor																
$C \leq 1 \mu\text{F}$	$1000 \pm 100 \Omega$																
$1 \mu\text{F} < C \leq 10 \mu\text{F}$	$100 \pm 10 \Omega$																
$10 \mu\text{F} < C \leq 100 \mu\text{F}$	$10 \pm 1 \Omega$																
$100 \mu\text{F} < C \leq 1000 \mu\text{F}$	$1 \pm 0.1 \Omega$																
$1000 \mu\text{F} < C \leq 10000 \mu\text{F}$	$0.1 \pm 0.01 \Omega$																
$10000 \mu\text{F} < C$	*																

NO	项 目 Items	条 件 Conditions	规 格Specifications																												
10.8	高温负荷 Load life	在 105 ±2℃的恒温箱内，对电容器施加电压。施加直流电压和交流电压的峰值的和要等于额定电压，产生的纹波电流不能超过最大纹波电流，时间 8000 小时，试验结束后，在标准状态下放置 16 小时后进行测试。 The capacitor shall be placed in a circulating air oven at an ambient temperature of 105 ±2℃. The sum of the DC voltage and peak AC voltage must not exceed the full rated voltage of the capacitor. The ripple current generated shall not exceed the maximum ripple current, DC voltage and the rated ripple current shall be applied for a period of 8000 hours. It shall be subjected to standard atmospheric for 16 hours, after which measurement shall be made.	漏电流：不超过规定值 容量变化：初测值的±25 % 以内 (6.3V 10V,±30%) 损耗角正切：不超过规定值的2倍 (6.3V 10V,3倍) Leakage current : ≤Initial specified value Capacitance change :Within ±25% of initial value(6.3V 10V,±30%) Dissipation factor: ≤200% of initial specified value(6.3V 10V,≤300%) 试验后底部允许轻微鼓起： A little bulged is accepted. The criteria is as follows: <table><tr><td>壳号(Φ)</td><td>判定基准</td></tr><tr><td><12.5</td><td>≤0.8mm</td></tr><tr><td>12.5~16</td><td>≤1.0mm</td></tr><tr><td>18~22</td><td>≤1.6mm</td></tr><tr><td>25</td><td>≤1.8mm</td></tr></table>	壳号(Φ)	判定基准	<12.5	≤0.8mm	12.5~16	≤1.0mm	18~22	≤1.6mm	25	≤1.8mm																		
壳号(Φ)	判定基准																														
<12.5	≤0.8mm																														
12.5~16	≤1.0mm																														
18~22	≤1.6mm																														
25	≤1.8mm																														
10.9	高温存储 Shelf Life	温度 Temp：105 ±2℃ 时间 Time：500+36 小时 电压处理：在常温下电容器串联保护电阻 (1KΩ)，加额定电压30分钟，放电，常温放置24～48 小时后测量。 Condition : The DC rated voltage shall be applied across the capacitor and its protective resistor (1KΩ) for 30 minutes ,The capacitor shall then be stored under standard Atmospheric conditions for 24 ～48 hours.	漏电流:不超过规定值 容量变化:初测值的±20 % 以内 损耗角正切:不超过规定值的2倍 Leakage current : ≤Initial specified value Capacitance change : Within ±20% of initial value Dissipation factor : ≤200% of initial specified value																												
10.10	阻抗特性 Impedance Stability	<table><tr><td colspan="2">Rated voltage (V)</td><td>6.3</td><td>10</td><td>16</td><td>25</td></tr><tr><td rowspan="2">Impedance (120Hz)</td><td>Z -25℃/+20℃</td><td>4</td><td>3</td><td>2</td><td>2</td></tr><tr><td>Z -40℃/+20℃</td><td>12</td><td>10</td><td>8</td><td>6</td></tr></table> <table><tr><td colspan="2">Rated voltage (V)</td><td>35</td><td>50~100</td></tr><tr><td rowspan="2">Impedance (120Hz)</td><td>Z -25℃/+20℃</td><td>2</td><td>2</td></tr><tr><td>Z -40℃/+20℃</td><td>4</td><td>3</td></tr></table>	Rated voltage (V)		6.3	10	16	25	Impedance (120Hz)	Z -25℃/+20℃	4	3	2	2	Z -40℃/+20℃	12	10	8	6	Rated voltage (V)		35	50~100	Impedance (120Hz)	Z -25℃/+20℃	2	2	Z -40℃/+20℃	4	3	
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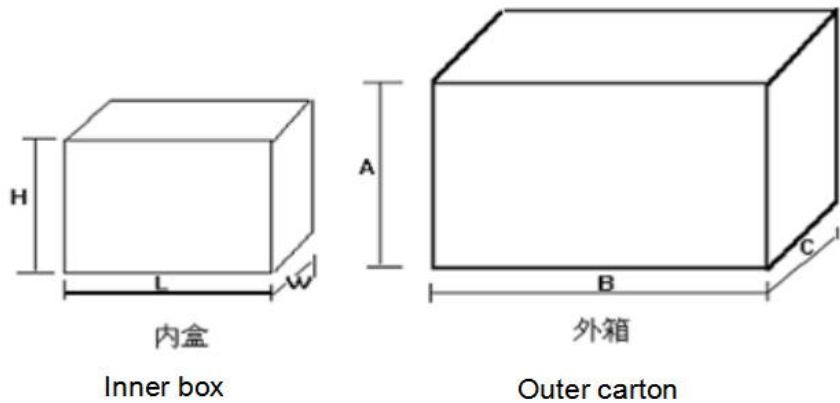
NO	项 目 Items	条 件 Conditions	规 格 Specifications
10.11	可焊性 Solder Ability	浸渍时间 Solder press time: $2\pm0.5s$ 焊接温度 Solder temperature: $235\pm5^{\circ}C$	浸渍面积90%以上附着 At least 90% of Circumferential surface of the dipped portion of termination shall be covered with new solder .
10.12	耐焊接热 Resistance to Soldering Heat	温度: $260\pm5^{\circ}C$ Test Temperature: $260\pm5^{\circ}C$ 时间: $10\pm1 s$ Test time: $10\pm1s$	漏电流: 不超过规定值 Leakage Current : Not more than the specified value 电容量变化: 初测值的 $\pm10\%$ 以内 Capacitance Change : within $\pm10\%$ of the initial value 损耗角正切; 不超过规定值 Dissipation Factor : Not More than the specified value 外观: 无明显异常 Appearance : No remarkable abnormality
10.13	耐湿性 Resistance of Dump Heat	温度: $40\pm2^{\circ}C$ Test Temperature : $40\pm2^{\circ}C$ 湿度: 90-95% RH Relative Humidity: 90-95%RH 时间: $240\pm8hrs$ 试验后常温放置24-48小时 To expose in the atmospheric condition for 24 to 48 hours after completion of test .	漏电流: 不超过规定值 Leakage Current : Not more than the specified value 电容量变化: 初测值的 $\pm10\%$ 以内 Capacitance Change : within $\pm10\%$ of the initial value 损耗角正切; 不超过规定值 Dissipation Factor: Not more than the specified value 外观: 无明显异常 Appearance: No remarkable abnormality
10.14	耐振性 Resistance to Vibration	频率: 10-55-10 Hz/分 总振幅: 1.5mm Frequency : From 10 to 55 Hz and return to 10 Hz, shall be transferred in 1 Min . Total Amplitude: 1.5 mm 条件: X. Y. Z方向各2小时, 共6小时 Direction and duration of vibration: 3 orthogonal directions mutually each for 2 hours, Total 6 hours .	静电容量测试时无接触不良, 断线及短路, 端子无机械损伤 Capacitance : During the test, measured value to be stabilized (when measured several times within 30min before completion of test) Appearance : No remarkable abnormality 静电容量变化: 初始值的 $\pm5\%$ 以内, 外观无明显异常 Capacitance change: Within $\pm5\%$ of the initial value, No remarkable abnormality

NO	项 目 Items		条 件 Conditions			规 格 Specifications
10.15	耐溶剂性 Resisting Solvent		方法一： 溶剂Solvent：异丙醇Isopropyl alcohol 温度Temperature：20-25℃ 时间Time：30±5s 或方法二： 溶剂Solvent：软化水或蒸馏水 Demineralized or distilled Water 温度Temperature：50-60℃ 时间Time：300±30s			外观：无显著异常 Appearance： No remarkable abnormality
10.16	端子强度 Terminal Strength	拉伸度 Tensile test intensity	线径 Diameter of terminal (mm)	拉伸力 Tensile Strength (N)	维持时间 Continued time	测定静电容量时,无接触不良,开路 和短路现象,另外无机械损伤 和端子损伤。 When the capacitance is measured,there shall be no intermittent contacts or open or short circuiting. There shall be no such mechanical damage as terminal damage etc.
			0.3<d≤0.5	5	10±1 sec	
			0.5<d≤0.8	10		
		0.8<d≤1.25	20			
		弯曲强度 winding intensity	2回合 2 bends			
			线径 Diameter of terminal (mm)	弯曲力 Tensile Strength (N)	锥质量 Awl quality	
			0.3<d≤0.5	2.5	0.25 kg	
0.5<d≤0.8	5		0.51 kg			
0.8<d≤1.25	10	1.0 kg				

11. 包装 Packing

引线式长脚及成型产品散式包装 Long lead and Forming products Packing
内外盒尺寸及数量 Size and Quantity of inbox and outbox

$\phi D * L$	内盒inbox				外盒outbox			
	$L \pm 5$	$W \pm 5$	$H \pm 3$	Quantity (PCS)	$A \pm 5$	$B \pm 5$	$C \pm 3$	Quantity (PCS)
8*11.5	280	210	145	2500	310	445	295	10000



RoHS指令规定标准RoHS Statement

我公司目前生产的产品已经满足欧盟 RoHS指令规定的标准，具体江海禁用限用物质标准如下：
Jianghai products can meet standards of RoHS directive for each substance, the details are as below:

序号	禁用物质名称 Name of prohibited substances	最大含量标准 Maximum content standard (PPM or mg/kg)	备注 remarking
1	Cadmium and -compounds (镉及其化合物)	5	
2	Mercury and -compounds (汞及其化合物)	2	
3	Pb and compounds (铅及其化合物)	90	
4	Cr VI (六价铬)	75	
5	PBBs, poly brominated biphenyl ethers (聚溴化苯醚) /PBDE	10	
6	PBBs, poly brominated biphenyl (聚溴化苯)	10	
7	PCBs, poly chlorinated biphenyl (聚氯化苯)	10	
8	PCTs, poly chlorinated terphenyls (聚氯烃)	10	
9	PCP, Pentachlorophenol (五氯酚)	10	
10	All types Asbestos (所有类型石棉)	10	
11	CFCS, Chlorofluorocarbons (氟氯化碳)	0	
12	HCFCs, Hydrogenated chlorofluorocarbons (加氢氟氯化碳)	0	
13	CHCs, Chlorinated hydrocarbons (氯烃化合物)	0	

对于所供产品的包装材料还需满足下列标准：

For the packaging materials for products, need to meet the following criteria:

14	Cadmium, Mercury, Lead and Chromium VI(镉、汞、铅和铬的总和)	100	参考94/62/EC Reference 94/62/EC
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补充要求：

此标准未列明的其它重金属和化学物质含量标准以各个国家为准；

Additional requirements: This standard does not indicate any other heavy metals and chemical substance content standards to all countries subject .

* 欧盟Rohs指令规定的豁免不在上面标准之内。

Substances exempted from RoHS instruction are not concluded in the requirements listed above.

* 环保物料定义：满足上述标准，并且已经无铅化；

Environmentally friendly materials Definition: meet the above criteria, and have been lead-free;

*参考文件：94/62/EC(包装材料与包装废气物指令)、2002/95/EC(RoHS指令)、

91/157/EEC(电池及蓄电池标准)、91/338/EEC(镉含量指令)、EN71-3(欧盟玩具重金属标准)

References: 94/62/EC (packaging material and packaging waste are Directive), 2002/95/EC (RoHS Directive), 91/157/EEC (the standard battery and battery), 91/338/EEC (cadmium content of instruction), EN71-3 (EU toy heavy metal standards)

二. 本公司符合欧盟ROHS指令的产品在电性能、尺寸方面没有任何改变，在焊接工艺方面没有任何要求，贵公司可以继续采用原有含铅焊接工艺。

Our company is in compliance with the European Union ROHS directive in electric products, no change. In the soldering process, without any requirements of your company can continue using the original lead-based welding technology.

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