Winnerway
宏远

2016 CATALOG

# ALUMINUM FOIL

FOR ALUMINUM ELECTROLYTIC CAPACITORS

铝 电 解 电 容 器 用 铝 箔

## 公 司 简 介

扬州宏远电子有限公司成立于 1995 年，厂址位于中国江苏省高邮市，占地面积 14 万㎡，主要产品为铝电解电容器用腐蚀箔和化成箔，现有腐蚀生产线 46 条、化成生产线 58 条，年生产能力为 1600 万㎡，年销售额 7.8 亿元人民币，折合 1.22 亿美元。

扬州宏远电子有限公司是国家高新技术企业。公司拥有一批高素质的管理人才和专业技术人才，建立了研究开发、生产制造、技术保证、品质服务、环境建设等一整套科学的管理体系，拥有自主开发的高水平腐蚀、化成箔制造技术，具有独立的设备开发和制造能力。通过了 ISO9001：2008 版质量管理体系认证和 ISO14001：2004 版环境管理体系再认证。同时拥有多项发明专利。

追求卓越品质，提供满意产品，本公司愿与广大客户一起为成为一家充满魅力、富有竞争力的国际化企业而努力！

## COMPANY INTRODUCTION

YANGZHOU HONGYUAN ELECTRONIC CO., LTD. was founded in 1995.It is located in Gaoyou city Jiangsu province , China. Covering an area of140000m$^2$, Major products are etched foil and formed foil which applied to aluminum capacitors. The company is running 46 etched product lines and 58 formed product lines at present. The yearly output of Yangzhou HONGYUAN is16 million square meters, and RMB 780 million (about USD 122million )annual sales now.

YANGZHOU HONGYUAN was appointed as the “HIGH AND NEW TECHNOLOGY ENTERPRISES OF CHINA”. Benefiting from its excellent professionals of management and technology, Yangzhou HONGYUAN has formed a set of scientific management systems including research & development, manufacture, technology, quality services and environment protection . Moreover, Yangzhou HONGYUAN possesses its own top-ranking etching and forming foil production technology, has the independent ability of equipment development and manufacture. Our company obtained quality management system certificate of ISO9001:2008 and environment management system certificate of ISO14001:2004.meantime ,the company also owes lots of inventions.

Pursuing super excellent quality and providing perfect products are the goal of our company, together with our clients, YANGZHOU HONGYUAN would like to dedicate to be an international competitive enterprises.

## 1.1 Definitions of Technical Terms 术语定义

| Technical Terms<br>术语 | Code<br>代码 | Definitions<br>定义 |
|---|---|---|
| Formation<br>化成处理 | — | Process for depositing dielectric aluminum oxide film ($Al_2O_3$) on the surface of the foil by anodic oxidation<br>箔表面进行阳极氧化生成介质铝氧化膜（$Al_2O_3$）的过程 |
| Formed Foil<br>化成箔 | — | Foils treated by formation process<br>表面经过化成处理的箔 |
| Etched Foil<br>腐蚀箔 | — | Foils treated by etching process before formation process<br>化成处理前经过腐蚀扩面处理的箔 |
| Foil for Anode<br>阳极箔 | — | Foils used as an anode of a capacitor<br>电容器阳极用箔 |
| Foil for Cathode<br>阴极箔 | — | Foils used as an cathode of a capacitor<br>电容器阴极用箔 |
| Voltage across Terminals<br>化成电压 | Vfe | Final voltage applied during formation process<br>未化成箔在化成处理时所加的最终电压 |
| Dielectric Withstanding Voltage<br>氧化膜耐电压 | Vt | Voltage of formed foil measure 3 minutes after reaching rise time (Tr)<br>到达升压时间(Tr)3 分钟后化成箔的电压值 |
| Nominal Formation Voltage<br>额定化成电压 | Vf | Nominal value of dielectric withstanding voltage<br>氧化膜的额定耐压值 |
| Rise Time<br>升压时间 | Tr | Time at which the applied voltage reaches 90% of nominal formation voltage(Vf), with a specified electric current applied to formed foil<br>对化成箔按指定电流升压到额定化成电压(Vf)90%的值时所用的时间 |
| Hydration Process<br>水和处理 | — | Immersion of foil in deionized water at high temperature for specified time<br>按指定时间将箔浸入高温纯水中煮沸处理 |
| Hydration Resistance Test<br>耐水和性试验 | — | Test to evaluate foil stability after hydration process<br>评估箔在进行水和处理后的稳定性的试验 |
| Rise Time after Hydration Process<br>水和处理后的升压时间 | Tr60 | Time at which the applied voltage reaches 90% of nominal formation voltage(Vf), with a specified electric current applied to hydrated formed foil<br>水和处理后的化成箔按指定电流升压到额定化成电压(Vf)90%的值时所用的时间 |
| Dielectric Withstanding Voltage after Hydration Process<br>水和处理后的氧化膜耐电压 | Vt60 | Voltage of formed foil after hydration process measured 3 minutes after rise time (Tr60)<br>水和处理后的化成箔到达升压时间(Tr60)3 分钟后氧化膜的耐电压 |

Note: Tr60 & Vt60 indicate hydration time of 60 minutes. 备注：Tr60和Vt60所指的水煮时间为60分钟

## 1.2 How to Order 如何定购

| | |
|---|---|
| Ordering Unit<br>定购计量单位 | The ordering unit is based on square meters ($m^2$ ) calculated by multiplying foil length(m) by foil width (m)<br>定购计量单位基于铝箔的长度（米）与宽度（米）的乘积，即平方米 |
| Minimum Ordering quantity<br>最小定购数量 | The minimum ordering quantity is one small size roll of foil with the outside diameter measuring approximately 200mm<br>最小定购数量为一卷外径大约 200㎜ 的铝箔 |
| Quantity Calculation<br>数量计算 | Ordering One Roll: Calculate the foil area ($m^2$ ) and round off to one decimal place.<br>定购一卷：计算铝箔的面积（平方米）时请尽可能保留到一个小数位 |
| | Ordering more than One Roll: Calculate the foil area ($m^2$ ) for every roll. The total foil area is the total quantity of the order<br>定购多于一卷：计算每卷铝箔的面积（平方米），总面积就是定单的总数量 |

| | |
|---|---|
| Information Required on<br>Customer Order form<br>客户定单上应注明的资料 | Date of Order<br>定单日期 |
| | Your Purchase Order Number<br>定单号码 |
| | Foil Part No.: Please be sure to specify “Nominal Formation Voltage” when ordering formed foil. When ordering etched foil, specify “Etched Foil”<br>铝箔的代码：定购化成箔时请务必注明“额定化成电压”，当定购腐蚀箔时请注明 “腐蚀箔” |
| | Quantity of Foil: Use square meters ($m^2$ ) to calculate quantity based on Nominal Length per Carton (m)<br>铝箔的数量：在考虑到每箱的额定长度（米）的前提下，使用平方米来计算所需要的数量 |
| | Delivery Date<br>交货日期 |
| | Delivery Terms<br>交货条款 |

## 1.3 Part Numbering System 产品代码

For example: Y 100 LM01 21VF

（1） （2） （3） （4）

（1）Y：Low voltage 低压 YH：Middle to High voltage 中高压

（2）Thickness（μm）铝箔厚度

（3）Series number 铝箔系列序号

（4）Nominal Formation voltage（Blank for Etched Foil）额定化成电压（腐蚀箔不标注）

## 1.4 Nominal Formation Voltage Range 额定化成电压范围

| Foil Category | Nominal Formation Voltage Range |
|---|---|
| Formed Foil, Extreme Low Voltage | 3.0 ≤ Vf ≤ 7.9 |
| Formed Foil, Low Voltage | 8.0 ≤ Vf ≤ 165 |
| Formed Foil, Middle to High Voltage | 166 ≤ Vf ≤ 730 |

## 1.5 Specifications for Anode Foil Capacitance 阳极箔静电容量规范

| Items<br>项目 | Specifications<br>规范 |
|---|---|
| Effective Width of Foil<br>铝箔的有效宽度 | 480mm (500mm wide roll less 10mm at each edge) (For reference only, please according to Data Sheet)<br>480㎜（500㎜宽的铝箔两边各减去10㎜），只供参考，具体请以实际数据检验表为准 |
| Average Capacitance<br>平均静电容量 | As per Section 2. Specifications<br>按照第二章规范中列出的数值 |
| Tolerance of Average Capacitance<br>平均静电容量偏差 | As per Section 2. Specifications<br>按照第二章规范中列出的数值 |
| Calculation of Average Capacitance<br>平均静电容量的计算 | A1, A2, A3: Measured capacitance values at outer side of a foil<br>从铝箔卷外端测量得的标准静电容量值<br>B1, B2, B3: Measured capacitance values at core side of a foil<br>从铝箔卷内端测量得的标准静电容量值<br>X = (A max + A min + B max + B min) / 4 |
| Dispersion Range<br>离散范围 | 13% or less<br>小于13% |
| Calculation of Dispersion Range<br>离散率的计算 | A1, A2, A3: Measured capacitance values at outer side of a foil<br>从铝箔卷外端测量得的标准静电容量值<br>B1, B2, B3: Measured capacitance values at core side of a foil<br>从铝箔卷内端测量得的标准静电容量值<br>Dispersion Rate = [(A max or B max - A min or B min) / Average Capacitance] x 100% |

## 1.6 Specifications for Residual Chloride Content 氯离子残留量规范

| Items<br>项目 | Specifications<br>规范 |
|---|---|
| Residual Chloride Content<br>氯离子残留量 | Low Voltage Etched Foils: 2.0mg/$m^2$ or less<br>低压腐蚀铝箔：小于 2.0mg/$m^2$<br>All foils except the above foils: 1.0mg/$m^2$ or less<br>其他铝箔：小于 1.0mg/$m^2$ |
| Test Methods to be Applied<br>参考测试方法 | Test Method - Residual Chloride Content<br>氯离子残留量的测试方法 |

## 1.7 Specifications for Visual Appearance 外观规范

| Items<br>项目 | Specifications<br>规范 |
|---|---|
| Visual Appearance<br>外观 | For both Etched and Formed Foils, the appearance of one roll may be slightly different from another. This may look different because of variances in raw foil, production process, etc. The following minor defects shall not be reasons for rejection as long as they are proven not to be harmful to the capacitor during process of production:<br>对于腐蚀箔和化成箔，每一卷的外观都可能存在轻微的差异。这主要是由于原箔、制造过程等因素而造成的。即使铝箔上有以下的小瑕疵，只要对电容器制造过程没有不良影响就不应该作为投诉的理由。<br>(1) Small speckles 小斑点<br>(2) Wrinkles and marks or visible corrections of them 皱痕<br>(3) Visible aluminum hydroxide on foil surface 表面的氢氧化铝粉末<br>(4) Small pin-holes 小针孔<br>(5) Variations of surface color 表面颜色变化 |

## 2.1 Specifications for Etched Foil for Anode, low Voltage
## 低压阳极用腐蚀铝箔规格表

| Type | Items 项目 | Thickness 厚度 ±5（μm） | Capacitance（μF/cm²）静电容量 | | | Tensile Strength 最小抗拉强度（N/cm） | Bending Strength(min.) R=0.5mm(bends) 最小抗弯强度 | 最适合使用电压（WV） |
|---|---|---|---|---|---|---|---|---|
| | | | 21Vf | 67Vf | 132Vf | | | |
| LD | Y60LD01 | 60 | | | 0.53 | 21.6 | 90 | 50～100 |
| | Y60LD02 | 60 | | | 0.85 | 21.6 | 90 | 50～100 |
| | Y60LD03 | 60 | | | 1.15 | 19.6 | 80 | 50～100 |
| | Y65LD01 | 65 | 24.0 | 5.8 | 2.00 | 17.7 | 80 | 16～100 |
| | Y65LD02 | 65 | 26.0 | 6.4 | 2.25 | 17.7 | 80 | 16～100 |
| | Y65LD03 | 65 | 28.5 | 7.2 | 2.75 | 17.7 | 80 | 16～100 |
| LM | Y80LM01 | 80 | 40 | 9.5 | | 19.6 | 90 | 8.0～63 |
| | Y80LM02 | 80 | 44 | 10.2 | | 19.6 | 90 | 8.0～63 |
| | Y85LM01 | 85 | 50 | 12.0 | | 19.6 | 90 | 8.0～50 |
| | Y85LM02 | 85 | 56 | 12.6 | | 19.6 | 90 | 8.0～50 |
| | Y90LM01 | 90 | 64 | 15.3 | | 17.7 | 80 | 8.0～35 |
| | Y95LM02 | 95 | 66 | 15.8 | | 17.7 | 80 | 8.0～35 |
| | Y95LM03 | 95 | 70 | 16.4 | | 17.7 | 80 | 8.0～35 |
| | Y95LM04 | 95 | 75 | 16.6 | | 17.7 | 80 | 8.0～35 |
| | Y100LM01 | 100 | 75 | 15.8 | | 17.7 | 80 | 6.3～35 |
| | Y100LM02 | 100 | 79 | 17.2 | | 17.7 | 80 | 4.0～35 |
| | Y100LM03 | 100 | 81 | | | 17.7 | 80 | 4.0～35 |
| | Y100LM04 | 100 | 84 | | | 17.7 | 80 | 4.0～25 |
| | Y105LM01 | 105 | 84 | | | 17.7 | 80 | 4.0～25 |
| | Y105LM02 | 105 | 91 | | | 17.7 | 80 | 4.0～25 |
| | Y110LM02 | 110 | 91 | | | 17.7 | 80 | 4.0～25 |
| LN | Y85LN00 | 85 | | | 3.60 | 19.6 | 90 | 50～100 |
| | Y85LN01 | 85 | | | 4.20 | 17.7 | 80 | 50～100 |
| | Y95LN01 | 95 | | | 4.66 | 19.6 | 90 | 35～100 |
| | Y95LN02 | 95 | | | 5.02 | 17.7 | 80 | 35～100 |
| | Y100LN01 | 100 | | | 5.20 | 19.6 | 90 | 35～100 |
| | Y100LN02 | 100 | | | 5.50 | 17.7 | 80 | 35～100 |
| | Y100LN03 | 100 | | | 5.70 | 17.7 | 80 | 35～100 |
| | Y110LN01 | 110 | | | 6.10 | 17.7 | 80 | 35～100 |
| LT | Y60LT01 | 60 | | | 0.32 | 22 | 90 | 50～100 |
| | Y60LT02 | 60 | | | 0.35 | 22 | 90 | 50～100 |
| | Y80LT01 | 80 | 22 | | | 22 | 90 | 16～50 |
| | Y95LT01 | 95 | 50 | | | 22 | 90 | 16～50 |
| | Y95LT02 | 95 | 60 | | | 22 | 90 | 8.0～16 |
| | Y105LT01 | 105 | 76 | | | 26 | 90 | 6.3～16 |
| | Y110LT01 | 110 | 76 | | | 26 | 90 | 6.3～16 |

— Vf：The rating turns into the voltage 额定化成电压

— Aluminum purity 铝纯度（Al）：≥99.99%

— On the table accommodates the size is a mean value 上表容量值是平均值

## 2.1 Specifications for Etched Foil for Anode, low Voltage
## 低压阳极用腐蚀铝箔规格表

| Type | Items 项目 | Thickness 厚度 ±5（μm） | Capacitance （μF/cm²）静电容量 | | | Tensile Strength 最小抗拉强度（N/cm） | Bending Strength(min.) R=0.5mm(bends) 最小抗弯强度（回） | 最适合使用电压（WV） |
|---|---|---|---|---|---|---|---|---|
| | | | 21Vf | 67Vf | 132Vf | | | |
| LMA | Y80LMA01 | 80 | 60 | 13.2 | | 17.7 | 80 | 4.0～50 |
| | Y80LMA02 | 80 | 63 | 13.6 | | 17.7 | 80 | 4.0～50 |
| | Y80LMA03 | 80 | 66 | 14.2 | | 17.7 | 80 | 4.0～50 |
| | Y85LMA01 | 85 | 67 | 14.5 | | 17.7 | 80 | 4.0～50 |
| | Y90LMA01 | 90 | 69 | 14.8 | | 17.7 | 80 | 4.0～50 |
| | Y90LMA02 | 90 | 72 | 15.6 | | 17.7 | 80 | 4.0～50 |
| | Y90LMA03 | 90 | 75 | 16.2 | | 17.7 | 80 | 4.0～50 |
| | Y95LMA01 | 95 | 78 | 16.9 | | 17.7 | 80 | 4.0～50 |
| | Y95LMA02 | 95 | 81 | 17.5 | | 17.7 | 80 | 4.0～50 |
| | Y95LMA03 | 95 | 84 | 18.3 | | 17.7 | 80 | 4.0～50 |
| | Y95LMA04 | 95 | 87 | 18.5 | | 17.7 | 80 | 4.0～50 |
| | Y100LMA01 | 100 | 87 | 18.8 | | 17.7 | 80 | 4.0～50 |
| | Y100LMA02 | 100 | 90 | 19.3 | | 17.7 | 80 | 4.0～50 |
| | Y100LMA03 | 100 | 93 | 20.2 | | 17.7 | 80 | 4.0～50 |
| | Y105LMA01 | 105 | 96 | 20.6 | | 17.7 | 80 | 4.0～50 |
| | Y105LMA02 | 105 | 99 | 21.1 | | 17.7 | 80 | 4.0～50 |
| | Y105LMA03 | 105 | 102 | 21.5 | | 17.7 | 80 | 4.0～50 |
| | Y110LMA01 | 110 | 105 | 22.0 | | 17.7 | 80 | 4.0～50 |
| | Y110LMA02 | 110 | 108 | | | 17.7 | 80 | 4.0～50 |

— Vf：The rating turns into the voltage 额定化成电压

— Aluminum purity 铝纯度（Al）：≥99.99%

— On the table accommodates the size is a mean value 上表容量值是平均值

## 2.2 Specifications for Etched Foil for Anode，Middle to High Voltage
## 中高压阳极用腐蚀铝箔规格表

| Type | Items 项目 | Thickness 厚度 ±5（μm） | Capacitance （μF/cm²）静电容量 | | | Tensile Strength 最小抗拉强度（N/cm） | Bending Strength(min.) R=1.0mm 最小抗弯强度（回） | 最适合使用电压（WV） |
|---|---|---|---|---|---|---|---|---|
| | | | 257Vf | 529Vf | 600Vf | | | |
| MV | YH110MV3 | 110 | 1.58 | | | 19.6 | 50 | 160～300 |
| | YH110MV4 | 110 | 1.70 | | | 19.6 | 40 | 160～300 |
| | YH110MV5 | 110 | 1.80 | | | 19.6 | 40 | 160～300 |
| | YH115MV6 | 115 | 1.85 | | | 19.6 | 40 | 160～300 |
| | YH115MV7 | 115 | 1.93 | | | 19.6 | 40 | 160～300 |
| | YH120MV8 | 120 | 2.01 | | | 19.6 | 40 | 160～300 |
| | YH120MV9 | 120 | 2.07 | | | 19.6 | 40 | 160～300 |
| | YH120MV10 | 120 | 2.11 | | | 19.6 | 40 | 160～300 |
| | YH120MV11 | 120 | 2.16 | | | 19.6 | 40 | 160～300 |
| GV | YH100GV1 | 100 | | 0.49 | | 19.6 | 50 | 330～400 |
| | YH100GV2 | 100 | | 0.53 | | 19.6 | 50 | 330～400 |
| | YH100GV3 | 100 | | 0.59 | | 19.6 | 50 | 330～400 |
| | YH105GV4 | 110 | | 0.62 | | 19.6 | 50 | 330～400 |
| | YH110GV5 | 115 | | 0.65 | | 19.6 | 40 | 330～400 |
| | YH110GV6 | 115 | | 0.67 | | 19.6 | 40 | 330～400 |
| | YH115GV7 | 115 | | 0.69 | | 19.6 | 40 | 330～400 |
| | YH115GV8 | 120 | | 0.71 | | 19.6 | 40 | 330～400 |
| | YH120GV9 | 120 | | 0.73 | | 19.6 | 40 | 330～400 |
| | YH120GV10 | 120 | | 0.75 | | 19.6 | 40 | 330～400 |
| | YH120GV11 | 120 | | 0.77 | | 19.6 | 40 | 330～400 |
| | YH125GV12 | 125 | | 0.79 | | 19.6 | 40 | 330～400 |
| | YH125GV13 | 125 | | 0.81 | | 19.6 | 40 | 330～400 |

— Vf：The rating turns into the voltage 额定化成电压

— Aluminum purity 铝纯度（Al）：≥99.99%

— On the table accommodates the size is a mean value 上表容量值是平均值

## 2.2 Specifications for Etched Foil for Anode，Middle to High Voltage
## 中高压阳极用腐蚀铝箔规格表

| Type | Items 项目 | Thickness 厚度 ±5（μm） | Capacitance （μF/cm²）静电容量 | | | Tensile Strength 最小抗拉强度（N/cm） | Bending Strength(min.) R=1.0mm 最小抗弯强度（回） | 最适合使用电压（WV） |
|---|---|---|---|---|---|---|---|---|
| | | | 257Vf | 529Vf | 600Vf | | | |
| SV | YH110SV1 | 110 | | | 0.50 | 19.6 | 50 | 450～600 |
| | YH115SV2 | 115 | | | 0.54 | 19.6 | 50 | 450～600 |
| | YH115SV3 | 115 | | | 0.56 | 19.6 | 40 | 450～600 |
| | YH115SV4 | 115 | | | 0.58 | 19.6 | 40 | 450～600 |
| | YH120SV5 | 120 | | | 0.60 | 19.6 | 40 | 450～600 |
| | YH120SV6 | 120 | | | 0.62 | 19.6 | 40 | 450～600 |
| | YH120SV7 | 120 | | | 0.64 | 19.6 | 40 | 450～600 |
| | YH125SV8 | 125 | | | 0.65 | 19.6 | 40 | 450～600 |
| | YH125SV9 | 125 | | | 0.66 | 19.6 | 40 | 450～600 |

— Aluminum purity 铝纯度（Al）：≥99.99%

— On the table accommodates the size is a mean value 上表容量值是平均值

## 2.3 Specifications for Formed Foil for Anode，Low Voltage, LD LM Series 低压阳极用化成箔规格表

## LD LM Series

| 型号 | Capacitance（μF/cm²）静电容量 | | | | | | | | | | | | | | 厚度 ±5（μm） |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WV | 8 | | 10 | | | 16 | | | | | 25 | | | | |
| T℃ | 85 | 105 | 85 | | 105 | 85 | | | | 105 | 85 | | | 105 | |
| Vf(V) | 10 | 11 | 12 | 13 | 14 | 17 | 18 | 19 | 21 | 23 | 29 | 31 | 33 | 36 | |
| Y60LD01 | | | | | | | | | | | | | | | 60 |
| Y60LD02 | | | | | | | | | | | | | | | 60 |
| Y60LD03 | | | | | | | | | | | | | | | 60 |
| Y65LD01 | 46.0 | 41.8 | 38.4 | 35.5 | 33.0 | 27.1 | 25.5 | 24.2 | 22.0 | 20.0 | 14.8 | 13.9 | 13.1 | 11.8 | 65 |
| Y65LD02 | 50.2 | 45.7 | 41.9 | 38.7 | 36.0 | 29.6 | 27.9 | 26.5 | 24.0 | 21.9 | 16.4 | 15.4 | 14.5 | 13.0 | 65 |
| Y65LD03 | 56.2 | 51.4 | 47.1 | 43.5 | 40.4 | 33.5 | 31.4 | 29.8 | 27.0 | 24.6 | 18.8 | 17.6 | 16.5 | 14.8 | 65 |
| Y80LM01 | 80 | 73 | 67 | 62 | 58 | 48 | 45 | 44 | 40 | 37 | 28 | 26.5 | 24.5 | 22 | 80 |
| Y80LM02 | 90 | 80 | 76 | 68 | 63 | 52 | 49 | 48 | 45 | 40 | 32 | 29 | 27 | 25 | 80 |
| Y80LM03 | 100 | 90 | 84 | 76 | 70 | 60 | 56 | 54 | 51 | 46 | 36 | 32 | 30 | 28 | 80 |
| Y85LM01 | 98 | 89 | 82 | 76 | 70 | 60 | 56 | 54 | 50 | 46 | 36 | 34 | 30 | 28 | 85 |
| Y85LM02 | 110 | 101 | 90 | 86 | 80 | 68 | 64 | 62 | 56 | 52 | 39 | 37 | 32 | 30 | 85 |
| Y85LM03 | 120 | 109 | 100 | 92 | 86 | 76 | 72 | 68 | 61 | 54 | 44 | 41 | 38 | 34 | 85 |
| Y90LM02 | 130 | 122 | 114 | 106 | 101 | 85 | 82 | 79 | 70 | 66 | 50 | 47 | 44 | 38 | 90 |
| Y90LM03 | 140 | 130 | 122 | 115 | 108 | 92 | 87 | 83 | 75 | 68 | 53 | 49 | 46 | 40 | 90 |

| 型号 | Capacitance（μF/cm²）静电容量 | | | | | | | | | | | | | | 抗拉强度 N/cm | R0.5 抗弯强度（回） |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WV | 35 | | | 50 | | | | 63 | | | 80 | | 100 | | | |
| T℃ | 85 | | 105 | 85 | | | 105 | 85 | | 105 | 85 | 105 | 85 | 105 | | |
| Vf(V) | 43 | 47 | 51 | 58 | 62 | 67 | 73 | 82 | 85 | 92 | 105 | 115 | 132 | 143 | | |
| Y60LD01 | | | | | | | | | 1 | 0.9 | | | | 0.47 | 21.6 | ⩾60 |
| Y60LD02 | | | | | | | | | | | 1.12 | 1.00 | 0.85 | | | |
| Y60LD03 | | | | | | | | | | | | 1.36 | 1.15 | 0.98 | 19.6 | |
| Y65LD01 | 9.5 | 8.7 | 7.7 | 6.5 | 6.1 | 5.6 | 5.03 | 4.20 | 4.10 | 3.72 | 2.90 | 2.62 | 2.00 | 1.68 | 17.7 | |
| Y65LD02 | 10.6 | 9.7 | 8.6 | 7.2 | 6.7 | 6.2 | 5.56 | 4.70 | 4.50 | 4.08 | 3.20 | 2.88 | 2.25 | 1.92 | | |
| Y65LD03 | 12.4 | 11.4 | 10.1 | 8.6 | 8.1 | 7.5 | 6.73 | 5.70 | 5.50 | 4.53 | 3.90 | 3.52 | 2.75 | 2.36 | | |
| Y80LM01 | 17.8 | 16.2 | 14.4 | 11.6 | 10.5 | 9.5 | 8.3 | 6.9 | 6.7 | 6.0 | | | | | 19.6 | ⩾60 |
| Y80LM02 | 19.2 | 17.5 | 15.8 | 12.5 | 11 | 10.2 | 9.0 | 7.2 | 7.0 | 6.4 | | | | | | |
| Y80LM03 | 21.0 | 19.0 | 17.0 | 14.5 | 13.2 | 11.0 | 9.4 | 8.8 | 8.6 | 7.6 | | | | | | |
| Y85LM01 | 22.0 | 20.0 | 18.0 | 15.5 | 14.2 | 12.0 | 10.4 | 8.8 | 8.6 | | | | | | | |
| Y85LM02 | 24.0 | 21.0 | 18.8 | 16.3 | 15.0 | 12.6 | 11.0 | 9.7 | 9.5 | | | | | | | |
| Y85LM03 | 25.5 | 23.0 | 20.2 | 16.8 | 15.5 | 14.0 | 11.8 | | | | | | | | | |
| Y90LM02 | 28.8 | 26.0 | 22.0 | 18.7 | 17.4 | 15.6 | 14.3 | | | | | | | | | |
| Y90LM03 | 30.0 | 27.0 | 24.0 | 19.3 | 18.0 | 16.2 | 14.8 | | | | | | | | | |

## 2.4 Specifications for Formed Foil for Anode，Low Voltage, LM LN Series 低压阳极用化成箔规格表

## LM LN Series

| 型号 | Capacitance（μF/cm²）静电容量 | | | | | | | | | | | | | | | | | 厚度 ±5（μm） |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WV | 6.3 | | 8 | | 10 | | | 16 | | | | | 25 | | | | |
| | T℃ | 85 | 105 | 85 | 105 | 85 | | 105 | 85 | | | | 105 | 85 | | | | 105 |
| | Vf(V) | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 17 | 18 | 19 | 21 | 23 | 29 | 31 | 33 | 36 | |
| Y95LM03 | | 165 | 146 | 142 | 128 | 120 | 112 | 104 | 86 | 81 | 77 | 70 | 63 | 50 | 47 | 44 | 38 | 95 |
| Y95LM04 | | 182 | 162 | 145 | 130 | 125 | 115 | 108 | 92 | 87 | 83 | 75 | 68 | 51 | 48 | 46 | 39 | 95 |
| Y100LM01 | | 182 | 162 | 145 | 130 | 125 | 115 | 108 | 92 | 87 | 83 | 75 | 68 | 51 | 48 | 46 | 39 | 100 |
| Y100LM02 | | 187 | 166 | 150 | 136 | 129 | 120 | 112 | 96 | 91 | 87 | 79 | 72 | 52 | 50 | 48 | 42 | 100 |
| Y100LM03 | | 192 | 170 | 154 | 140 | 132 | 123 | 115 | 98 | 93 | 89 | 81 | 74 | 54 | 52 | 49.5 | 44 | 100 |
| Y100LM04 | | 195 | 173 | 158 | 144 | 135 | 126 | 118 | 103 | 98 | 93 | 84 | 77 | 58 | 55 | 51 | 46 | 100 |
| Y105LM01 | | 195 | 173 | 158 | 144 | 135 | 126 | 118 | 103 | 98 | 93 | 84 | 77 | 58 | 55 | 51 | 46 | 105 |
| Y105LM02 | | 198 | 180 | 165 | 155 | 145 | 136 | 128 | 111 | 105 | 100 | 91 | 83 | 62 | 58 | 54 | 48.5 | 105 |
| Y110LM02 | | 198 | 180 | 165 | 155 | 145 | 136 | 128 | 111 | 105 | 100 | 91 | 83 | 62 | 58 | 54 | 48.5 | 110 |

| 型号 | Capacitance（μF/cm²）静电容量 | | | | | | | | | | | | | | | | | 抗拉强度 N/cm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WV | 35 | | | 50 | | | | 63 | | | 80 | | | 100 | | | |
| | T℃ | 85 | | 105 | 85 | | | 105 | 85 | | 105 | 85 | | 105 | 85 | | 105 | |
| | Vf(V) | 43 | 47 | 51 | 58 | 62 | 67 | 73 | 82 | 85 | 92 | 105 | 115 | 125 | 132 | 143 | 150 | 160 | |
| Y95LM01 | | 28.0 | 25.3 | 21.5 | 18.4 | 17.0 | 15.5 | 15.0 | 12.3 | | | | | | | | | | 17.7 |
| Y95LM02 | | 29.5 | 26.8 | 22.6 | 19.3 | 17.8 | 16.3 | 15.8 | 13.0 | | | | | | | | | | |
| Y95LM03 | | 31.2 | 28.0 | 23.6 | 20.2 | 18.6 | 17.0 | 16.4 | 13.5 | | | | | | | | | | |
| Y95LM04 | | 32.0 | 28.6 | 24.1 | 20.6 | 19.0 | 17.3 | 16.6 | 13.8 | | | | | | | | | | |
| Y100LM01 | | 29.5 | 26.3 | 23.0 | | | | | | | | | | | | | | | |
| Y100LM02 | | 31.5 | 28.5 | 25.0 | | | | | | | | | | | | | | | |
| Y100LM03 | | 33.6 | 30.8 | 27.0 | | | | | | | | | | | | | | | |
| Y100LM04 | | 36.2 | 32.8 | 29.1 | | | | | | | | | | | | | | | |
| Y85LN00 | | | | | 10.8 | 10.1 | 9.4 | 8.6 | 7.7 | 7.4 | 6.6 | 5.3 | 4.6 | 4.1 | 3.6 | 3.0 | | | 19.6 |
| Y85LN01 | | | | | 12.6 | 11.5 | 10.8 | 10.0 | 8.8 | 8.6 | 7.6 | 6.2 | 5.4 | 4.8 | 4.2 | 3.5 | | | |
| Y90LN01 | | | | | 14.7 | 13.5 | 12.6 | 11.5 | 9.7 | 9.3 | 8.4 | 6.7 | 5.7 | 5.1 | 4.5 | 3.8 | | | |
| Y90LN02 | | | | | 15.3 | 15.0 | 14.1 | 12.6 | 10.3 | 10.0 | 9.2 | 7.4 | 6.3 | 5.6 | 4.8 | 4.2 | | | |
| Y95LN01 | | 26.7 | 24.3 | 22.2 | 15.8 | 14.5 | 13.4 | 12.1 | 10.1 | 9.9 | 8.6 | 6.9 | 5.9 | 5.3 | 4.7 | 4.0 | 3.65 | 3.0 | |
| Y95LN02 | | 29.2 | 26.6 | 23.2 | 17.3 | 16.0 | 15.0 | 13.2 | 10.8 | 10.5 | 9.4 | 7.6 | 6.5 | 5.7 | 5.0 | 4.3 | 3.9 | 3.2 | |
| Y95LN03 | | 30.9 | 28.2 | 25.6 | 19.0 | 17.5 | 16.5 | 14.2 | 11.3 | 11.0 | 10.0 | 8.2 | 7.1 | 6.0 | 5.2 | 4.4 | 3.95 | 3.3 | 17.7 |
| Y100LN02 | | 31.0 | 28.5 | 26.0 | 19.6 | 18.3 | 17.0 | 15.1 | 12.6 | 12.2 | 10.8 | 8.6 | 7.3 | 6.3 | 5.5 | 4.6 | 4.15 | 3.4 | |
| Y100LN03 | | 34.5 | 31.5 | 27.5 | 20.5 | 19.3 | 18.0 | 16.5 | 13.3 | 12.8 | 11.5 | 8.8 | 7.8 | 6.5 | 5.7 | 4.8 | 4.3 | 3.6 | |
| Y100LN04 | | 37.2 | 34.0 | 29.5 | 22.0 | 20.6 | 19.2 | 17.5 | 14.3 | 13.8 | 12.4 | 9.5 | 8.1 | 6.8 | 6.1 | 5.2 | 4.6 | 3.9 | |
| Y110LN01 | | 37.2 | 34.0 | 29.5 | 22.0 | 20.6 | 19.2 | 17.5 | 14.3 | 13.8 | 12.4 | 9.5 | 8.1 | 6.8 | 6.1 | 5.2 | 4.6 | 3.9 | |
| Y110LN02 | | 40.0 | 36.5 | 31.5 | 23.5 | 22.0 | 20.5 | 18.5 | 15.3 | 14.8 | 13.4 | 10.2 | 8.4 | 7.1 | 6.5 | 5.6 | 4.9 | 4.2 | |

**R0.5 抗弯强度（回）≥60**

## 2.5 Specifications for Formed Foil for Anode，Low Voltage,LT Series （High Strength）

## LT 系列 高强度低压阳极用化成箔规格表

# LT Series

| 型号 | Capacitance（μF/cm²）静电容量 | | | | | | | | | | | | | | | | | 厚度±5μm | 抗拉强度N/cm | R0.5抗弯强度（回） |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WV | 6.3 | | 8 | | 10 | | | 16 | 25 | | 35 | | 50 | | 100 | | | | |
| | T℃ | 85 | 105 | 85 | 105 | 85 | | 105 | 85 | 85 | 105 | 85 | 105 | 85 | 105 | 85 | 105 | | | |
| | Vf(V) | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 21 | 33 | 36 | 47 | 51 | 67 | 73 | 132 | 143 | 160 | | |
| Y60LT01 | | | | | | | | | | | | | | | | 0.24 | 0.22 | 0.20 | 60 | | |
| Y60LT02 | | | | | | | | | | | | | | | | 0.32 | 0.29 | 0.26 | 60 | | |
| Y80LT01 | | | | | | | | | 22 | 13.5 | 11.8 | 7.3 | 6.4 | 4.5 | 4.1 | | | | 80 | 22 | ⩾60 |
| Y95LT01 | | | | | | | | | 50 | 30.0 | 28.0 | 17. | 15.8 | 10.2 | 9.0 | | | | 95 | | |
| Y95LT02 | | | | 108 | 98 | 90 | 84 | 78 | 56 | | | | | | | | | | 95 | | |
| Y105LT0 | 182 | 162 | 145 | 130 | 125 | 115 | 108 | 76 | | | | | | | | | | | 105 | 26 | |

**Characteristics:High Strength、Suitable for 5mm or7mm height capacitor**

**特点：高强度、可分切 3mm、2.2mm**

## 2.6 pecifications for Formed Foil for Anode，Low Voltage,LMA Series
## LMA 系列 低压阳极用化成箔规格表

# LMA Series

| 型号 | Capacitance(μF/cm²)静电容量 | | | | | | | | | | | | | | | | 厚度±5（μm） |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WV | 6.3 | | 8 | | 10 | | | 16 | | | | | 25 | | | | |
| T℃ | 85 | 105 | 85 | 105 | 85 | | 105 | 85 | | | | 105 | 85 | | | 105 | |
| Vf(V) | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 17 | 18 | 19 | 21 | 23 | 29 | 31 | 33 | 36 | |
| Y80LMA01 | 150 | 133 | 120 | 109 | 100 | 93 | 86 | 76 | 72 | 68 | 60 | 54 | 40 | 38 | 36 | 32 | 80 |
| Y80LMA02 | 157 | 140 | 126 | 114 | 103 | 97 | 90 | 78 | 74 | 71 | 63 | 57 | 42 | 40 | 38 | 34 | 80 |
| Y80LMA03 | 164 | 146 | 131 | 118 | 107 | 100 | 93 | 81 | 77 | 74 | 66 | 60 | 44 | 42 | 40 | 36 | 80 |
| Y85LMA01 | 170 | 150 | 135 | 122 | 111 | 104 | 97 | 83 | 79 | 76 | 68 | 61 | 46 | 44 | 41 | 36 | 85 |
| Y90LMA01 | 172 | 153 | 137 | 124 | 112 | 105 | 98 | 84 | 81 | 77 | 69 | 62 | 47 | 45 | 42 | 37 | 90 |
| Y90LMA02 | 179 | 160 | 144 | 130 | 118 | 110 | 103 | 88 | 84 | 80 | 72 | 65 | 49 | 47 | 44 | 38 | 90 |
| Y90LMA03 | 186 | 166 | 148 | 134 | 122 | 115 | 108 | 92 | 87 | 83 | 75 | 68 | 51 | 49 | 46 | 39 | 90 |
| Y95LMA01 | 194 | 173 | 155 | 140 | 127 | 118 | 110 | 97 | 92 | 88 | 78 | 71 | 52 | 50 | 47 | 42 | 95 |
| Y95LMA02 | 202 | 180 | 161 | 146 | 133 | 125 | 117 | 101 | 95 | 91 | 81 | 74 | 55 | 52 | 49 | 44 | 95 |
| Y95LMA03 | 210 | 185 | 166 | 150 | 136 | 128 | 120 | 105 | 99 | 94 | 84 | 77 | 58 | 54 | 51 | 46 | 95 |
| Y95LMA04 | 215 | 190 | 172 | 155 | 142 | 131 | 123 | 109 | 102 | 97 | 87 | 79 | 60 | 57 | 53 | 48 | 95 |
| Y95LMA05 | 220 | 196 | 177 | 161 | 148 | 136 | 128 | 113 | 106 | 101 | 90 | 82 | 62 | 59 | 55 | 50 | 95 |
| Y100LMA01 | 230 | 205 | 185 | 169 | 155 | 143 | 134 | 116 | 109 | 104 | 93 | 85 | 64 | 61 | 57 | 52 | 100 |
| Y100LMA02 | 240 | 213 | 192 | 175 | 160 | 148 | 139 | 119 | 112 | 107 | 96 | 87 | 66 | 62 | 59 | 54 | 100 |
| Y100LMA03 | 251 | 220 | 199 | 183 | 168 | 155 | 143 | 123 | 116 | 110 | 99 | 90 | 68 | 63 | 61 | 56 | 100 |
| Y110LMA01 | 262 | 230 | 207 | 187 | 175 | 162 | 150 | 129 | 122 | 117 | 105 | 95 | 70 | 68 | 64 | 57 | 110 |
| Y110LMA02 | 268 | 236 | 210 | 192 | 180 | 166 | 154 | 132 | 125 | 120 | 108 | 98 | 72 | 70 | 66 | 59 | 110 |

| 型号 | Capacitance(μF/cm²)静电容量 | | | | | | | | | | | | | | 抗拉强度N/cm | R0.5抗弯强度（回） |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WV | 35 | | | 50 | | | | 63 | | | 80 | | 100 | | | |
| T℃ | 85 | | 105 | 85 | | | 105 | 85 | | 105 | 85 | 105 | 85 | 105 | | |
| Vf(V) | 43 | 47 | 51 | 58 | 62 | 67 | 73 | 82 | 85 | 92 | 105 | 115 | 132 | 143 | | |
| Y80LMA01 | 24 | 21 | 19 | 15.8 | 14.7 | 13.2 | 12.0 | | | | | | | | 19.6 | ≥60 |
| Y80LMA02 | 25 | 22 | 20 | 16.3 | 15.1 | 13.6 | 12.4 | | | | | | | | | |
| Y80LMA03 | 27 | 24 | 22 | 17.0 | 15.8 | 14.2 | 13.0 | | | | | | | | | |
| Y90LMA01 | 28 | 25 | 23 | 17.7 | 16.5 | 14.8 | 13.5 | | | | | | | | | |
| Y90LMA02 | 29 | 26 | 24 | 18.7 | 17.4 | 15.6 | 14.3 | | | | | | | | | |
| Y90LMA03 | 30 | 27 | 25 | 19.3 | 18.0 | 16.2 | 14.8 | | | | | | | | | |
| Y95LMA01 | 32 | 29 | 27 | 20.2 | 18.8 | 16.9 | 15.5 | | | | | | | | | |
| Y95LMA02 | 33 | 30 | 28 | 21.0 | 19.4 | 17.5 | 15.4 | | | | | | | | | |
| Y95LMA03 | 34 | 31 | 29 | 22.0 | 20.4 | 18.3 | 16.0 | | | | | | | | | |
| Y100LMA01 | 35 | 32 | 30 | 22.7 | 21.0 | 18.8 | 16.2 | | | | | | | | | |
| Y100LMA02 | 36 | 33 | 31 | 23.2 | 21.5 | 19.3 | 16.8 | | | | | | | | | |
| Y100LMA03 | 37 | 34 | 32 | 24.2 | 22.4 | 20.2 | 17.6 | | | | | | | | | |
| Y105LMA01 | 38 | 35 | 33 | 24.6 | 22.8 | 20.6 | 18.2 | | | | | | | | | |
| Y105LMA02 | 39 | 36 | 34 | 25.0 | 23.3 | 21.1 | 18.6 | | | | | | | | | |
| Y105LMA03 | 40 | 37 | 35 | 25.4 | 23.7 | 21.5 | 18.8 | | | | | | | | | |
| Y110LMA01 | 41 | 38 | 36 | 26.0 | 24.2 | 22.0 | 19.1 | | | | | | | | | |

## 2.7 Specifications for Formed Foil for Anode，Middle Voltage, MV Series

## MV 系列 中压阳极用化成箔规格表

### MV Series

| 型号 | Capacitance(μF/cm²)静电容量 | | | | | | | | | | | | Thickness 厚度 ±5 μm | Bending Strength(min.) 最小抗弯（回） | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WV | 160 | | 180 | | 200 | | 250 | | | 300 | | | | | |
| T℃ | 85 | 105 | 85 | 105 | 85 | 105 | 85 | | 105 | 85 | | 105 | | | |
| Vf(V) | 210 | 230 | 250 | 260 | 270 | 290 | 315 | 335 | 365 | 365 | 370 | 375 | | R3.5 | R1.0 |
| YH100MV3 | 1.96 | 1.76 | 1.63 | 1.58 | 1.54 | 1.37 | 1.23 | 1.15 | 1.05 | 1.05 | 1.03 | 1.00 | 100 | ≥100 | ≥20 |
| YH100MV4 | 2.10 | 1.88 | 1.75 | 1.70 | 1.65 | 1.47 | 1.28 | 1.20 | 1.10 | 1.10 | 1.07 | 1.04 | 100 | | |
| YH110MV5 | 2.23 | 1.98 | 1.83 | 1.80 | 1.76 | 1.54 | 1.34 | 1.25 | 1.15 | 1.15 | 1.12 | 1.08 | 110 | | |
| YH110MV6 | 2.29 | 2.05 | 1.89 | 1.85 | 1.81 | 1.60 | 1.40 | 1.30 | 1.20 | 1.20 | 1.17 | 1.13 | 110 | | |
| YH115MV7 | 2.38 | 2.13 | 1.96 | 1.93 | 1.88 | 1.67 | 1.45 | 1.35 | 1.24 | 1.24 | 1.21 | 1.17 | 115 | | |
| YH115MV8 | 2.46 | 2.20 | 2.05 | 2.01 | 1.95 | 1.73 | 1.49 | 1.40 | 1.28 | 1.28 | 1.25 | 1.21 | 115 | | |
| YH120MV9 | 2.54 | 2.28 | 2.11 | 2.06 | 2.0 | 1.78 | 1.54 | 1.45 | 1.32 | 1.32 | 1.28 | 1.25 | 120 | | |
| YH120MV10 | 2.62 | 2.35 | 2.16 | 2.10 | 2.04 | 1.83 | 1.59 | 1.50 | 1.35 | 1.35 | 1.31 | 1.28 | 120 | | |
| YH120MV11 | 2.70 | 2.42 | 2.21 | 2.15 | 2.08 | 1.87 | 1.63 | 1.55 | | | | | 120 | | |

—Tensile Strength 抗拉强度（N/cm）：≧19.6（2.00Kgf/cm）

—Aluminum purity 铝纯度 （%） ：4N（99.99%）

—Test Method 测试方法 ：EIAJ RC-2364

## 2.8 Specifications for Formed Foil for Anode，High Voltage, GV Series

## GV 系列 高压阳极用化成箔规格表

### GV Series

| 型号 | Capacitance( μ F/cm²)静电容量 | | | | | | | | | | | Thick-ness 厚度 ±5 μm | Bending Strength (min.) 最小抗弯（回） | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WV | 330 | | 350 | | 400 | | | | | | | | | |
| T℃ | 85 | 105 | 85 | 105 | 85 | | | | | | 105 | | | |
| Vf(V) | 440 | 480 | 480 | 510 | 520 | 530 | 540 | 550 | 560 | 580 | 590 | | R3.5 | R1.0 |
| YH100GV1 | 0.62 | 0.56 | 0.56 | 0.51 | 0.50 | 0.49 | 0.48 | 0.47 | 0.46 | 0.44 | 0.43 | 100 | ⩾100 | ⩾10 |
| YH100GV2 | 0.68 | 0.60 | 0.60 | 0.55 | 0.54 | 0.53 | 0.52 | 0.50 | 0.49 | 0.47 | 0.46 | 100 | | |
| YH100GV3 | 0.73 | 0.65 | 0.65 | 0.61 | 0.60 | 0.59 | 0.58 | 0.56 | 0.55 | 0.52 | 0.50 | 100 | | |
| YH105GV4 | 0.78 | 0.70 | 0.70 | 0.64 | 0.63 | 0.62 | 0.61 | 0.59 | 0.58 | 0.56 | 0.54 | 105 | | |
| YH110GV5 | 0.81 | 0.73 | 0.73 | 0.68 | 0.66 | 0.65 | 0.64 | 0.62 | 0.61 | 0.58 | 0.56 | 110 | | |
| YH110GV6 | 0.85 | 0.76 | 0.76 | 0.71 | 0.69 | 0.67 | 0.66 | 0.64 | 0.63 | 0.60 | 0.58 | 110 | | |
| YH115GV7 | 0.89 | 0.80. | 0.80 | 0.75 | 0.73 | 0.69 | 0.68 | 0.66 | 0.65 | 0.62 | 0.60 | 115 | | |
| YH115GV8 | 0.92 | 0.83 | 0.83 | 0.78 | 0.76 | 0.72 | 0.70 | 0.68 | 0.67 | 0.64 | 0.62 | 115 | | |
| YH120GV9 | 0.95 | 0.85 | 0.85 | 0.80 | 0.78 | 0.75 | 0.73 | 0.71 | 0.69 | 0.66 | 0.64 | 120 | | |
| YH120GV10 | 0.98 | 0.88 | 0.88 | 0.82 | 0.80 | 0.78 | 0.76 | 0.73 | 0.71 | 0.68 | 0.66 | 120 | | |
| YH120GV11 | 1.01 | 0.9 | 0.90 | 0.84 | 0.82 | 0.80 | 0.78 | 0.75 | 0.73 | 0.70 | 0.68 | 120 | | |
| YH125GV12 | 1.04 | 0.92 | 0.92 | 0.86 | 0.84 | 0.82 | 0.80 | 0.77 | 0.75 | 0.72 | 0.70 | 125 | | |
| YH125GV13 | 1.07 | 0.94 | 0.94 | 0.88 | 0.86 | 0.84 | 0.82 | 0.79 | 0.78 | 0.74 | 0.72 | 125 | | |

—Tensile Strength 抗拉强度（N/cm）：≧19.6（2.00Kgf/cm）

—Aluminum purity 铝纯度 （%） ：4N（99.99%）

—Test Method 测试方法 ：EIAJ RC-2364

## 2.9 Specifications for Formed Foil for Anode，High Voltage, SV Series

## SV 系列 高压阳极用化成箔规格表

### SV Series

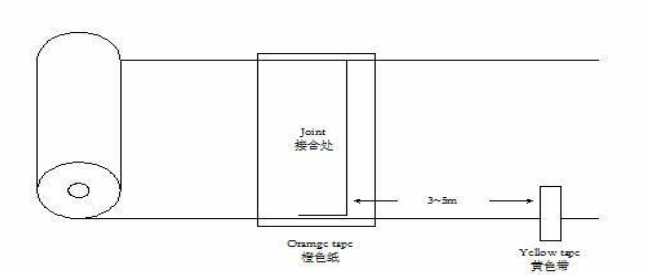
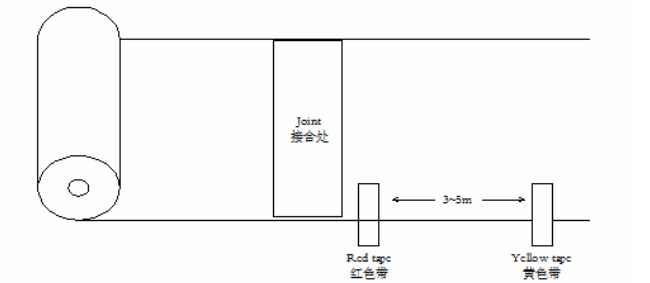
| 型号 | Capacitance(μF/cm²)静电容量 | | | | | | | | | | | Thick-ness 厚度 ±5 μm | Bending Strength (min.) 最小抗弯（回） | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WV | 450 | | | | 500 | | | 550 | | 600 | | | | |
| T℃ | 85 | | | 105 | 85 | | 105 | 85 | 105 | 85 | 105 | | | |
| Vf(V) | 600 | 620 | 630 | 650 | 660 | 680 | 730 | 750 | 800 | 840 | 880 | | R3.5 | R1.0 |
| YH110SV1 | 0.50 | 0.48 | 0.47 | 0.45 | 0.44 | 0.41 | 0.36 | 0.34 | 0.29 | 0.25 | 0.21 | 110 | ⩾100 | ⩾10 |
| YH115SV2 | 0.54 | 0.52 | 0.51 | 0.49 | 0.48 | 0.45 | 0.39 | 0.37 | 0.32 | 0.27 | 0.23 | 115 | | |
| YH115SV3 | 0.56 | 0.54 | 0.53 | 0.51 | 0.50 | 0.47 | 0.41 | 0.39 | 0.34 | 0.29 | 0.25 | 115 | | |
| YH115SV4 | 0.58 | 0.56 | 0.55 | 0.53 | 0.52 | 0.49 | 0.43 | 0.41 | 0.36 | 0.31 | 0.27 | 115 | | |
| YH120SV5 | 0.60 | 0.58 | 0.57 | 0.55 | 0.54 | 0.51 | 0.45 | 0.43 | 0.38 | 0.33 | 0.29 | 120 | | |
| YH120SV6 | 0.62 | 0.60 | 0.59 | 0.57 | 0.56 | 0.53 | 0.47 | 0.45 | 0.40 | 0.35 | 0.31 | 120 | | |
| YH120SV7 | 0.64 | 0.62 | 0.61 | 0.59 | 0.58 | | | | | | | 120 | | |
| YH125SV8 | 0.66 | 0.64 | 0.63 | | | | | | | | | 125 | | |
| YH125SV9 | 0.68 | | | | | | | | | | | 125 | | |

—Tensile Strength 抗拉强度（N/cm）：≧19.6（2.00Kgf/cm）
—Aluminum purity 铝纯度 （%） ：4N（99.99%）
—Test Method 测试方法 ：EIAJ RC-2364

## 3.1 Number of Joints and Joint Intervals 接合数量和接合距离

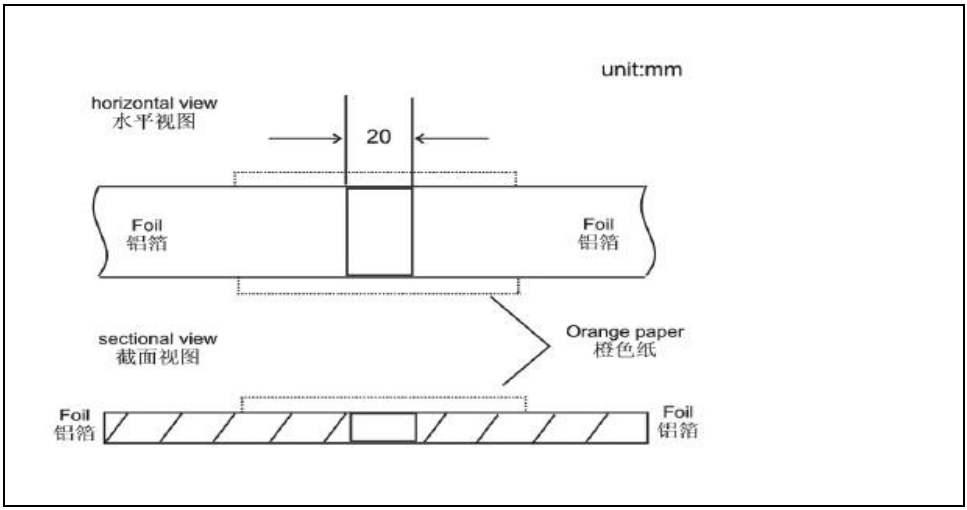
| | |
|---|---|
| Container Type 包装箱类型 | Carton 纸箱 |
| Number of Joints 接合数量 | One or None 少于一个 |
| Joint Intervals 接合距离 | Interval from joint to the end of foils is 50m or more<br>接合处距离铝箔的末端不少于 50 米 |

## 3.2 Marking of Joints 接合记号

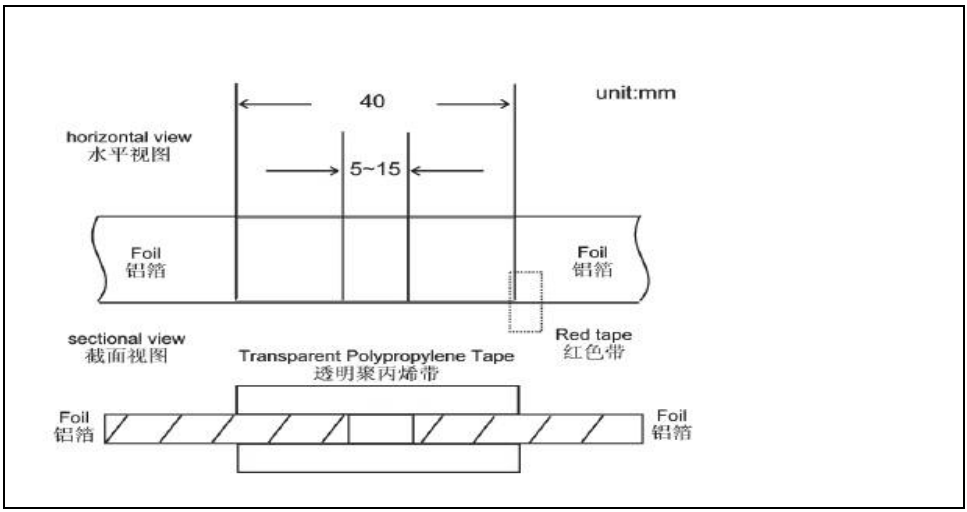
| Items<br>项目 | Specifications<br>规范 |
|---|---|
| Low Voltage Etched Foil<br>低压腐蚀铝箔 |  |
| All Foils other than above<br>其他 |  |

## 3.3 Joint Method 接合方法

### (1) Low Voltage Etched Foil (Cold Weld) 低压腐蚀铝箔(冷焊)



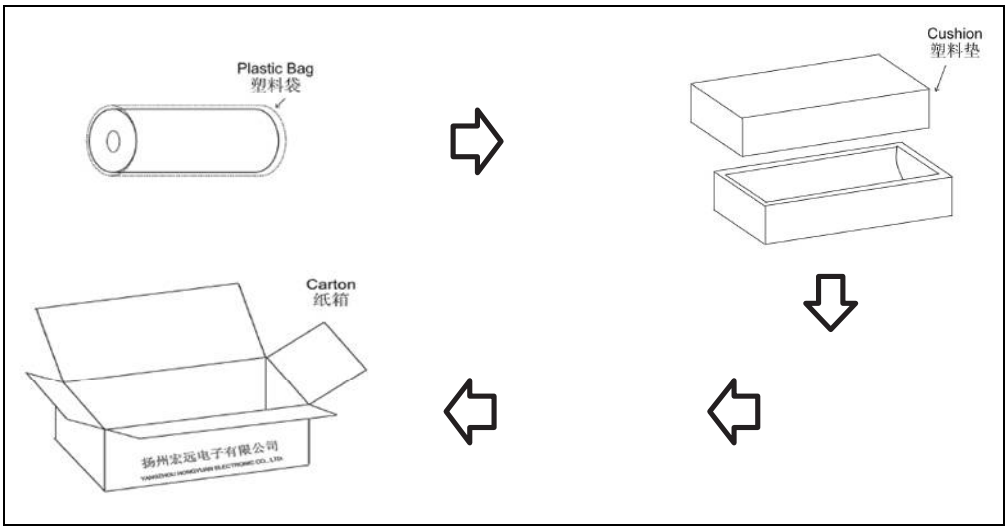

### (2) All Foils other than Low Voltage Etched Foil 其他



## 4.1 Standard Packing Specifications 标准包装规范

| Items<br>项目 | Formed Foil / Etched Foil 化成箔/腐蚀箔 |
|---|---|
| Container Type<br>包装箱类型 | Carton<br>纸箱 |
| Width of Roll<br>卷宽 | 500mm |
| Core Size<br>卷芯尺寸 | Length: 500mm 长度<br>Inside Diameter: 40mm 内径 |
| Core Materials<br>卷芯材质 | Aluminum & Iron<br>铝合金 |
| Dimensions of Container<br>包装箱尺寸 | 290D x 290H x 580W (mm) |
| Weight of One Roll (Without Container)<br>卷重(不含包装箱) | Approx. 30 kg 大约 |

## 4.2 Packing Methods 包装方法



## 4.3 Data Sheet 数据检验表

| | |
|---|---|
| 1 | Foil Part No. 铝箔编码 |
| 2 | Thickness 厚度 |
| 3 | Roll Width 卷宽 |
| 4 | Effective Width 有效宽度 |
| 5 | Foil No. 铝箔编号 |
| 6 | Date of Inspection 检验日期 |
| 7 | Foil Length 铝箔长度 |
| 8 | Foil Area 铝箔面积 |
| 9 | Weight 重量 |
| 10 | Tensile Strength 抗拉强度 |
| 11 | Bending Strength 抗弯强度 |
| 12 | Residual Chloride Content 氯离子残留量 |
| 13 | Capacitance at Each Measurement Point 各个测量点的实际静电容量 |
| 14 | Nominal Formation Voltage (Vf) (Formed Foil Only)额定化成电压（仅对化成箔） |
| 15 | Vt Values at Each Measurement Point (Formed Foil Only)各个测量点的氧化膜耐压值 |

A small tag with the same information is also attached to every roll of foil and its container.
包装箱外面和塑料袋里面各附上一张相同资料的数据检验标签.

## 5.1 Quality Assurance System 品质保证系统

Please contact us for the detailed progression of our quality assurance system.
公司已建立了完善的品质保证系统，如欲进一步了解详情请与我们联系.

## 5.2 Quality Assurance of Foil 铝箔的品质保证

During our etching and formation processes, major processing conditions like electric current, voltage and temperature are automatically controlled and simultaneously recorded by our continuous recording system. The quality assurance of our foil is achieved by maintaining the production conditions in accordance with the specified processing conditions.
在铝箔的腐蚀和化成处理过程中，主要处理参数如电流、电压和温度等均采用自动控制。各参数也被连续记录下来。我们严格按照指定的处理参数进行生产，以确保产品的品质能达到要求。

## 5.3 Performance Tests 性能测试

Our foil test samples are taken from the outer side and the core side of every roll and used for all performance tests. The test results are the ones presented to our customers.
我们的铝箔测试样本提取于每卷的始端和末端，这些样本被用于各种性能测试，其测试结果与将提交给客户的数据检验表一致.

## 5.4 Rejections and Claims 退货和投诉处理

If you have a problem with our foil, please send us the following information and materials that are essential to handling the case properly and promptly.
若在使用过程中遇到问题，请提供如下基本资料和物料，以便我们能迅速正确地协助您解决问题.

1. Customer's Foil Receiving Date 客户收到铝箔的日期
2. Customer's Acceptance Test Date 客户的自行测试日期
3. Foil Part Number, such as "Y60LD01" 铝箔编码，如"Y60LD01"
4. Foil Number, such as "xxx - x - xx" which appears on our Data Sheet
   铝箔编号，如数据表上的"xxx - x - xx"
5. Rejected Quantity 投诉数量
6. Customer's Purchase Order Number 客户定单号码
7. Foil Sample for Analysis (submit minimum size of 500mm wide by 200mm long, one piece)
   一片500㎜ x200㎜的铝箔样本
8. Reason for Rejection and /or Claim, and briefly describe how the defect was found
   投诉原因和/或要求，并简单描述如何发现问题

We will analyze the rejection and/or claim based on the information above, check our production records, if necessary, and advise the customer of our findings.
我们将基于以上资料分析有关投诉和/或要求，检查我们的生产记录，及时向客户反馈相关分析结果和处理方法。

## 6.1 Acceptance Test 铝箔验收认可测试

Upon receiving our foil, user generally perform their own acceptance test. Depending on foil type, please make sure the acceptance test is conducted at the following designated time:
当收到我们的铝箔时，客户通常会自行进行一些检验，根据铝箔的型号，请确定这些检验务必在以下指定时间进行。

1. Formed Foil for Anode: Before Slitting 阳极用化成箔：切割前
2. Etched Foil for Anode: Before Forming 阳极用腐蚀箔：化成前
3. Etched Foil for Cathode: Before Slitting 阴极用腐蚀箔：切割前

## 6.2 Handling Aluminum Foil (Do not handle foils with bare hands) 铝箔处理(切勿用手直接接触铝箔)

Never handle aluminum foil with your bare hands because the chloride in fingerprints and perspiration has a strong corrosive effect on aluminum. To prevent chloride contamination of aluminum foil during the manufacturing process of aluminum electrolytic capacitors, remember to wear clean, sterile gloves when handling the foil.
由于手上的氯化物及汗液对铝箔有强烈腐蚀性，故不能用手直接接触铝箔。为了避免在生产电解电容时错用受到氯化物污染的铝箔，处理铝箔时请切记要戴上清洗干净的手套。

## 6.3 Storage at User's Site 如何存储铝箔

When foils are stored at user's site, please remember the following points:
客户存储铝箔时请紧记以下各点:

1. Store foil in sealed containers 应用密封容器储存铝箔
2. Keep storage area free of chloride contamination 存放在没有受到氯化物污染的地点
3. Maintain normal temperature (5 to 30℃) and low humidity (less than 85%) in the storage area.
   存放地点的正常温度是5 to 30℃，相对湿度小于85%
4. Never put water on any type of foil. Water on foil can create a gas over a period of time, and because foil is stored in closed containers, the build-up of generated gas may cause an explosion
   无论腐蚀箔或化成箔都不能接触水份（受到水湿的铝箔，在一段时间之内会产生大量气体，若存放于密封的容器内，有可能发生爆炸）
5. Do not subject foil to mechanical stress because it can cause problems during the manufacturing process. 铝箔不能受压，受压后有可能在生产过程中出现问题

## 6.4 Shelf life 储存期限

Foil is guaranteed for the first six months after shipment. After six months, the foil should be tested before processing
以出厂日期起计所有铝箔都有六个月的保证期，六个月后本公司建议对铝箔重新测试。

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