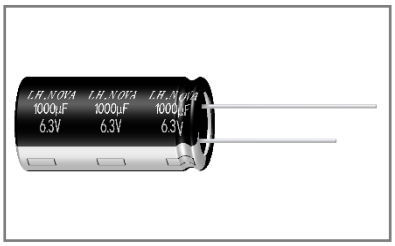
■LY 系列铝电解电容器

LY Series Aluminum Electrolytic Capacitor



◆特征

Feature

* 寿命: 105℃ 4000~10000 小时
  Load life:105℃ 4000~10000 hours.
* 超低阻抗
  Ultra low impedance.
* 符合 RoHS
  Compliant to the RoHS Directive.

◆应用

Application

* 适用于各类开关电源等电子产品
  Ideally designed for all kinds of switching power supply and other electronic products.

◆型号表示法

Part Number

8	220	LA	M	0511	LY	N	0	1	1	0

代码 Code	产品类别 Type
8	成品 Product

代码 Code	电压 Voltage
LA	6.3
LB	10
LC	16
LD	25
LE	35
LF	50
LG	63
MA	100

代码 Code	尺寸 Dimensions ΦDxL(mm)
0511	Φ5x11
AA12	Φ6.3x12
0812	Φ8x12
1020	Φ10x20
AB20	Φ12.5x20
1840	Φ18x40

代码 Code	商标 Trademark
N	LH.NOVA

代码 Code	内码 Internal Code
1	105℃

代码 Code	产品脚型 Lead Forming Type
0	散装品 Bulk
P	直脚方式编带品 original type(vertical) tape

代码 Code	标称容量 Nominal Capacitance
1R0	1uF
220	22uF
501	500uF
183	18000uF

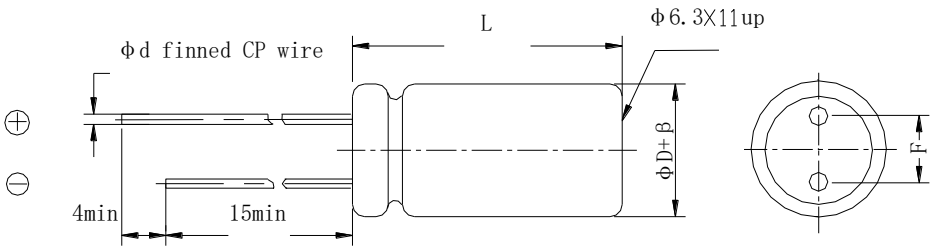
代码 Code	误差 Tolerance
K	±10%
V	$\pm^{20}_{10}$ %
M	±20%
Q	$\pm^{30}_{10}$ %

代码 Code	型号 Series
LY	LY

代码 Code	胶管颜色 Sleeve Color
0	黑色 Black
1	深蓝色 Deep-blue
7	棕色 Brown
9	绿色 Green

代码 Code	内码 Internal Code
1	普通品 regular
E	PET胶管 平台胶粒
F	PET胶管 凹台胶粒

◆产品结构
Product Structure



β(mm)	±0.5			±1.0				
ΦD(mm)	5	6.3	8	10	12.5	16	18	22
F±0.5(mm)	2.	2.5	3.5	5.0		7.5		10.0
Φd±0.1(mm)	0.5		0.6			0.8		
L(mm)	11,12		12,16	12,16,	16,20,25	16,20,25,30,35	20,25,30,35,40	25,30,35,40
	L±2.0							

◆主要特性表
Main specifications

项目 Item	主要特性 Performance Characteristics
额定工作电压范围 Rated Voltage Range	6.3~100V.DC
使用温度范围 Operating Temperature Range	-40℃~+105℃
标称静电容量范围 Nominal Capacitance Range	1~18000μF
静电容量允许偏差 Capacitance Tolerance	±20%（M，+20℃，120Hz）
漏电流 Leakage Current (20℃)	额定工作电压(V) Rated working voltage: 6.3~100 漏电流 Leakage current: 2 分钟后 I≤0.01CV 或 3(μA),取最大值 / After 2 min. I≤0.01CV or 3(μA), Whichever is greater. C：标称静电容量（μF）Nominal Capacitance in μF V：额定工作电压（V）Rated working voltage in V
损耗角正切 DF Dissipation Factor	额定工作电压(V) Rated working voltage: 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 100 DF(MAX) (20℃,120Hz): 0.18 / 0.16 / 0.14 / 0.`12 / 0.12 / 0.10 / 0.09 / 0.08 当容量值大于 1000μF 时，每增加 1000μF，DF 值加 0.02 For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.

<table>
<tr>
<td>浪涌电压
Surge Voltage Test</td>
<td>
<table>
<tr><td>额定工作电压(V)
Rated working voltage</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr>
<tr><td>浪涌电压(V)
Surge voltage</td><td>8</td><td>13</td><td>20</td><td>32</td><td>44</td><td>63</td><td>79</td><td>125</td></tr>
</table>
施加表中所列浪涌电压，充电 30± 5 秒，放电 5.5± 0.5 分钟作为一个周期，共进行 1000 次。测试温度： 15℃-35℃然后在标准大气条件下放置达到热稳定， 测试各参数。
Application of DC surge Voltage stated at table,1000 times of charging for 30 ± 5 sec.,discharging with a period of 5.5± 0.5 min.. Test temperature: 15℃ -35℃And the capacitor shall be stored under standard atmospheric conditions to obtain thermal stability, after which measurements shall be made.
容量变化：在初始值的± 20%以内。损耗角正切值不大于规定值的 200%。漏电流：不大于初始规定值
Capacitance change:Within ± 20% of the initial value Dissipation factor:Not more than 200% of the specified value.Leakage current: more than the initial specified value</td>
</tr>
<tr>
<td>温度特性
Temperature Stability</td>
<td>
<table>
<tr><td colspan="2">额定工作电压(V)
Rated working voltage</td><td>6.3</td><td>10</td><td>16</td><td>25~100</td></tr>
<tr><td rowspan="2">阻抗比(120Hz)
Impedance Ratio</td><td>z-25℃/z+20℃</td><td>4</td><td>3</td><td>2</td><td>2</td></tr>
<tr><td>z-40℃/z+20℃</td><td>8</td><td>6</td><td>4</td><td>3</td></tr>
</table>
</td>
</tr>
<tr>
<td>高温负荷特性
Load life</td>
<td>
在+105℃ 环境中施加额定工作电压和最大允许纹波电流 4000~10000 小时后,电容器的性能符合下面要求：
After application of rated working voltage with max permissible ripple current specified at +105℃ for 4000~10000 hours, capacitors meet the characteristics requirements measured at +20℃ listed at below:
1、电容量变化率:±25%初始测量值以内
Capacitance change: ±25% initial measured value
2、漏电流: ≤初始规定值
Leakage current: ≤initial specified value
3、损耗角正切值≤200%倍初始规定值
Dissipation factor: ≤200% initial specified value
<table>
<tr><td rowspan="2">外径
Case Dia</td><td colspan="2">时间(hrs)
Life Time</td></tr>
<tr><td>6.3~10WV</td><td>16~100WV</td></tr>
<tr><td>ΦD≤8</td><td>4000</td><td>5000</td></tr>
<tr><td>ΦD=10</td><td>6000</td><td>7000</td></tr>
<tr><td>ΦD≥12.5</td><td>8000</td><td>10000</td></tr>
</table>
</td>
</tr>
<tr>
<td>高温贮存特性
Shelf life</td>
<td>
在+105℃环境无负荷放置 1000 小时后，根据 JIS-C-5101-4，加额定电压 30min,,常温放置 24～48 小时后测试，电容器的性能符合下面要求:
After leaving capacitors under no load at +105℃ for 1000 hours, According to JIS-C-5101-4, apply the rated DC voltage for 30 minutes and store the capacitors under room temperature for 24-48 hours. The capacitors meet the characteristics listed as below:
1、电容量变化率:±20%初始测量值以内
Capacitance change : ±20% initial measured value
2、漏电流: ≤初始规定值
Leakage current:≤initial specified value
3、损耗角正切值≤200%倍初始规定值
Dissipation factor: ≤200% initial specified value
</td>
</tr>
</table>

稳态湿热 Resistance to damp heat (steady state)	试验温湿度：40±2℃，90～95%RH 试验时间：500±10h 试验后，电容器在标准大气条件下 2 小时，然后测试参数 Test temperature and humidity: 40±2℃, 90~95%RH Test time: 500±10h After completion of test, the capacitor shall be subjected to standard atmospheric conditions for 2 hours, after which measurements shall be made. 外观：无异状 Appearance: No remarkable abnormality 容量变化：在初始值±10%范围内 Capacitance change: Within ±10% of the initial value. 损失角正切值：不大于初始规定值 Dissipation factor: ≤initial specified value 漏电流：不大于初始规定值 Leakage current: ≤initial specified value
耐焊接热 Resistance to soldering heat	焊锡温度：260±5℃，浸入时间：10±1 秒，浸入深度 ：1.6mm Solder bath temperature: 260±5℃, Immersion time: 10±1sec. Immersion depth: 1.6mm 外观：无异状 Appearance: No remarkable abnormality 容量变化：在初始值±10%范围内 Capacitance change: Within ±10% of the initial value. 损失角正切值：不大于初始规定值 Dissipation factor: ≤ initial specified value 漏电流：不大于初始规定值 Leakage current: ≤initial specified value
防爆试验 Safety vent	以下试验只适用于铝壳直径≥Φ8 产品。 The following tests only apply to those products with vent products at diameter≥Φ8 with vent. 在电容器两极施加反向直流电压，其中通过的电流为 1A，在测试时防爆装置应能在 30 分钟内动作。 DC Application test: The capacitor shall be subjected to a reverse DC voltage. The current flowing through the capacitor shall be 1A. If the vent does work with the voltage applied for 30 minutes, the test is considered to be passed. 应无引线、铝箔等散射，无火花产生 The safety vent is actuated under the test conditions, thereby preventing terminals, metal pieces, etc, of the capacitor from scattering due to burst, the case from separating from the seal packing, or the capacitor from producing flame.

<table>
<tr>
<td>端子强度
Terminal strength</td>
<td>端子抗拉强度：沿电容器端子引线方向施加拉力(如下表)，10±1 秒。
<table>
<tr><td>引线直径 ϕ</td><td>0.45</td><td>0.50</td><td>0.60</td><td>0.80</td><td>1.00</td></tr>
<tr><td>拉力 N</td><td>5</td><td>5</td><td>10</td><td>10</td><td>20</td></tr>
</table>
Tensile strength of terminal: A static load shall be applied to the terminal in the axial direction and acting in a direction away from the body for 10±1 sec.
端子抗弯强度：在电容器引线施加固定重力（如下表），然后 5 秒内完成将电容体弯折 90° 后回到原位，再向相反方向弯折 90° 后回到原位。
<table>
<tr><td>引线直径 ϕ</td><td>0.45</td><td>0.50</td><td>0.60</td><td>0.80</td><td>1.00</td></tr>
<tr><td>拉力 N</td><td>2.5</td><td>2.5</td><td>5</td><td>5</td><td>10</td></tr>
</table>
Bending strength of terminal: Hang the specified dead weight, in about 5 sec then bend the body through 90°, return to the original position. Next bend it in opposite direction through 90° with the same speed, again return to the original position

外观：无可见机械损伤
Appearance: no visible mechanical damage
电容器应无接触不良开路或短路
The capacitor shall be no intermittent contacts, or open or short circuiting</td>
</tr>
<tr>
<td>可焊性
Solder ability</td>
<td>焊锡温度：235±5℃
浸入时间：2±0.5 秒
Temperature of solder: 235±5℃
Dipping time: 2±0.5sec.
This specification shall be met after the capacitors are stored under standard atmospheric conditions for 6 months.

浸入焊锡的引线表面积约 90%以上应附着新锡。
At least 90% of circumferential surface of the dipping portion of terminal shall be covered with new solder.</td>
</tr>
<tr>
<td>振动试验
Resistance to vibration</td>
<td>在 3 个互相垂直的方向分别施加 2 小时振动，共 6 小时。
频率：10-55Hz
振幅峰-峰值：1.5mm.
振速：1 分钟内振速 10～55～10Hz
Direction and duration of vibration:
3 orthogonal directions mutually each for 2h, Total 6h.
Vibration frequency range :10-55Hz.
Peak to peak amplitude: 1.5mm
Sweep rate :10 to 55 to 10Hz in about 1 min.

外观：无可见机械损伤
Appearance: no visible mechanical damage
电容器应无接触不良开路或短路
The capacitor shall be no intermittent contacts, or open or short circuiting</td>
</tr>
</table>

◆尺寸表、允许纹波、电流纹波电流频率因子

Dimensions and ripple current and frequency coefficient

纹波电流频率因子

Ripple current frequency coefficient

Freq（Hz） / Cap(μF)	50 (60)	100 (120)	1K	10K	≥100K
6.8~33	0.30	0.42	0.70	0.90	1.00
39~270	0.35	0.50	0.73	0.92	1.00
330~680	0.40	0.55	0.77	0.94	1.00
820~1800	0.45	0.60	0.80	0.96	1.00
2200~18000	0.50	0.70	0.85	0.98	1.00

尺寸表与允许纹波电流

Dimensions and ripple current

WV/V / Cap/μF	6.3（LO）			10(LB)			16(LC)			25(LD)			35(LE)		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
6.8													5×11	2.5	55
10													5×11	1.0	40
33													5×11	0.80	80
47										5×11	0.58	210	5×11	0.75	100
56							5×11	0.58	210	5×11	0.58	212	6.3×12	0.25	340
68										5×11	0.98	100	6.3×12	0.45	280
100				5×11 6.3×12	0.60 2.0	180 210	6.3×12	0.25	320	5×11 6.3×12 8×12	0.25 0.25 0.18	330	6.3×12 8×12	0.2 0.18	450 500
150	5×11	0.58	200				6.3×12	0.58	210	6.3×12	0.35	400	8×12	0.13	640
220				5×11 6.3×12	0.60 0.26	220 330	6.3×12	0.19	320	8×12 10×12	0.13 0.13	640 700	5×11 8×12 8×16 10×12	0.095 0.095 0.087 0.080	800 800 840 865
270										8×16	0.11	700	8×20	0.069	1050
330	6.3×12	0.25	330	6.3×12	0.20	450	8×12	0.13	640	8×12 8×16 10×12	0.11 0.087 0.080	840 865 865	8×16 10×12 10×16	0.07 0.07 0.060	1120 1120 1210
470	6.3×9 6.3×12	0.25 0.18	480 480	6.3×12 8×12 8×16	0.15 0.14 0.14	550 640 640	8×16 8×20 10×12	0.087 0.084 0.080	840 840 865	8×20 10×12 10×16	0.069 0.065 0.060	1050 1200 1210	10×20 12.5×16 12.5×20	0.046 0.049 0.049	1400 1450 1450
560	8×12	0.15	580	8×16	0.11	700	8×14 8×16	0.095 0.085	840 860	10×12 10×16	0.088 0.058	980 1280	10X16 10×20	0.06 0.042	1650
680	8×12	0.13	640	8×16 10×12	0.087 0.080	840 865	8×20 10×12 10×16	0.069 0.08 0.060	1050 1210 1210	8×20 10×20 12.5×16	0.078 0.046 0.049	1100 1400 1450	10×20 10×30 12.5×20	0.085 0.031 0.035	1800 1910 1900
820	8×12 10×12	0.12 0.080	780 865	8×12 10×12	0.08	950	10×12 10×16	0.06	1250	10×20	0.042	1650	12.5×20	0.035	1900
1000	8×16	0.087	840	10×12 10×16 10×20	0.09 0.060 0.06	1050 1210 1210	10×16 10×20 12.5×16	0.06 0.046 0.049	1300 1400 1450	10×20 10×30 12.5×20	0.048 0.031 0.035	1750 1910 1900	10×20 12.5×20 12.5×25	0.05 0.035 0.027	2050 2150 2230
1200	8×20 10×16	0.069 0.060	1050 1210	10×20	0.046	1400	10×20	0.042	1650	16×20	0.043	2210	12.5×30	0.024	2650
1500	10×20	0.046	1400	10×20 12.5×16	0.069 0.060	1650 1210	10×20 10×30 12.5×20	0.055 0.031 0.035	1910 1910 1900	12.5×20 12.5×25	0.035 0.027	2200 2230	12.5×30 16×20 12.5×35	0.035 0.035 0.020	2880
1800	12.5×16	0.049	1450	10×20 12.5×20	0.045 0.033	1350 1650	12.5×25	0.03	2100	12.530	0.024	2650	16×25	0.021	2930
2200	10×20	0.042	1650	10×20 12.5×20	0.042 0.035	1900	10×25 12.5×20 12.5×25	0.047 0.055 0.027	2100 2100 2230	12.5×25 16×20 12.5×35	0.05 0.05 0.020	2700 2700 2880	16×25 16×30	0.035 0.025	3200 3450
2700	10×30	0.031	1910	18×20	0.043	2210	12.5×30	0.024	2650	16×25	0.021	2930	16×35	0.015	3610
3300	12.5×20	0.035	1900	12.5×25	0.027	2230	12.5×25 12.5×35	0.05 0.020	2880	16×30	0.042	3650	18×30 18×35	0.042 0.014	4000 4220
3900	12.5×25	0.027	2230	12.5×30	0.024	2650	16×25	0.021	2930	16×35	0.015	3610	18×40	0.012	4280

WV/V Cap/μF	6.3（LO）			10(LB)			16(LC)			25(LD)			35(LE)		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
5600	12.5×35 16×20	0.020 0.027	2880 2530	16×35	0.021	2930	16×35	0.015	3610	18×40	0.012	4280			
6800	16×25	0.021	2930	16×30	0.017	3450	18×35	0.014	4080						
8200	16×30	0.017	3450	16×35	0.015	3610	18×35	0.014	4220	16×40	0.055	4000			
10000	16×35	0.015	3610	18×35	0.014	4220	18×40	0.012	4280						
12000	18×30	0.015	4170	18×40	0.012	4280									
15000	18×35	0.014	4220												
18000	18×40	0.012	4280												

(1) 外形尺寸　Case Size D×L(mm)

(2) 100KHz 阻抗值 Impedance at 100KHz +20℃ (Ω)

(3) 最大允许纹波电流 Max allowable ripple current (mArms, +105℃,100KHz)

WV/V Cap/μF	50(LF)			63(LG)			80(LH)			100(MA)		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
1.0	5×11	5.0	22									
2.2	5×11	2.5	42							5×11	3.5	60
3.3	5×11	2.3	47							5×11	3.5	60
4.7	5×11 6.3×12	2.0 0.85	110 80	5×11	2.0	110	5×11	2.0	110	5×11	2.5	70
6.8	5×11	1.9	88	5×11	1.0	80	5×11	1.0	80	5×11	1.9	92
10	5×11 6.3×12	1.4 0.45	124 150	5×11	1.0	80	5×11	1.0	80	6.3×12	1.5 0.8	200 100
15	5×11 6.3×12	1.4 0.45	124 150	5×11	1.8	62	5×11	1.8	62	6.3×12 8×12	1.0 1.3	126 180
22	5×11 6.3×12	1.0 0.8	80	6.3×12	0.8	100	6.3×12	0.8	100	6.3×12 8×12	0.70 1.3	180 250
33	6.3×12	0.48	230	6.3×12	0.45	240	8×12	0.55	250	8×12 8×16	0.60 0.80	250 350
47	6.3×12 8×12	0.35 0.45	380 300	6.3×9 6.3×12 6.3×15	0.65 1.1 0.55	180 135 200	8×9 8×12	0.45 0.60	250 320	8×12 8×16 10×12	0.38 0.35 0.34	280 300 325
56	6.3×12	0.35	280	8×12	0.50	260	8×12	0.55	250	8×16 8×20	0.28 0.26	380 408
68	8×12	0.23	350	8×12 8×16	0.45	280	8×12	0.45	280	10×12 8×16 8×20 10×16	0.35 0.35 0.35 0.25	300 300 400 400
82	8×12	0.23	350	8×16 10×12	0.36	335	8×12 10×12	0.15 0.17	550 450	10×20	0.17	518
100	8×12 8×16	0.17 0.13	555 500	8×16 10×12 10×16	0.3 0.3 0.33	350 350 350	10×12 10×14 10×16	0.40 0.30 0.13	500 550 580	10×16 10×20 12.5×25	0.17 0.16 0.15	555 595 600
120	8×12 8×16	0.3 0.12	730 730	8×14 8×20 10×16	0.28 0.26 0.25	408 408 400	8×20	0.26	400	10×25 12.5×16 12.5×20	0.13	765

WV/V / Cap/μF	50(LF)			63(LG)			80(LH)			100(MA)		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
150	8×12 10×12	0.15 0.12	700 760	8×20	0.25	400	10×16	0.25	400	10×20 12.5×20 16×16	0.15 0.20 0.11	580 895 895
180	8×20 10×12	0.091 0.12	910 900	10×16 10×20 12.5×16	0.18 0.17 0.18	518 518 527	10×14 10×20 12.5×16	0.10 0.10 0.25	1000 750 650	12.5×25	0.096	875
220	8×16 8×20 10×14 10×16	0.095 0.09 0.095 0.084	900 950 950 1050	10×12 10×16 10×20 10×25	0.16 0.16 0.13 0.23	595 595 700 1050	10×20 12.5×20	0.17 0.18	700 900	10×30 10×40 12.5×25 12.5×30	0.08 0.08 0.090 0.070	1220 1010 1220 1450
270	10×20	0.060	1220	10×20 12.5×16 12.5×20	0.13 0.15 0.13	700 700 765	12.5×16 12.5×20	0.13 0.12	760 765	12.5×35	0.070	1140
330	10×16 10×20,25 12.5×16	0.08 0.055 0.055	1300 1440 1440	10×20 10×25 12.5×16	0.25 0.13 0.11	750 750 765	12.5×20 12.5×25	0.072 0.09	1100 1100	16×20 18×20	0.078 0.072	1300 1350
390	10×25	0.055	1500	12.5×20	0.10	850	12.5×16 12.5×20	0.095 0.09	750 1200	12.5×35 16×25	0.045 0.04	1660 2900
470	10×30 12.5×16 12.5×20 16×16	0.043 0.08 0.045 0.065	1690 1500 1660 1660	12.5×20 12.5×30	0.09 0.080	880 1010	12.5×25 16×20 16×25	0.09 0.075 0.065	1000 1400 1300	16×30 16×35 18×25	0.040 0.040 0.045	1900 1900 1900
560	12.5×16 12.5×20	0.056 0.055	1950 1960	12.5×25 16×20 16×25	0.065 0.065 0.065	1350 1350 1350	18×20	0.062	1500	18×35	0.036	2130
680	10×30 12.5×30	0.045 0.030	1980 2310	16×20 16×25 18×20	0.062 0.062 0.062	1410 1420 1430	16×30	0.05	1500	18×35	0.036	1890
820	12.5×25 12.5×35 16×20	0.03 0.025 0.035	2300 2570 2570	12.5×35 12.5×40 16×30	0.07 0.055 0.049	1500 1600 1650	16×30	0.05	1500	18×40	0.032	2470
1000	12.5×20,25 16×25	0.065 0.025	2555	16×25 16×35	0.05 0.040	1900	16×30	0.05	2030			
1200	16×30	0.022	3010	18×35	0.036	1890	16×30	0.035	2130			
1500	16×35	0.019	3150	18×35	0.032	2470	16×40	0.025	2510			
1800	18×30	0.021	3635	18×40	0.032	2470						
2200	18×35	0.017	3680	18×40	0.038	3860						
2700	18×40	0.014	3800	18x40	0.035	3800						

(1) 外形尺寸 Case Size D×L(mm)

(2) 100KHz 阻抗值 Impedance at 100KHz +20℃ (Ω)

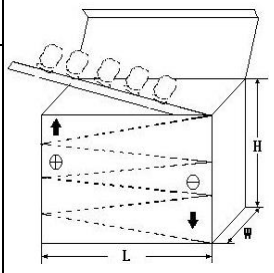
(3) 最大允许纹波电流 Max allowable ripple current (mArms, +105℃,100KHz)

◆包装

Packaging

* 编带产品包装规范与数量 Taped packaging quantity

直径 ΦD(mm)	数量(只) Qty. (Pcs)	L(电容高度)≤22mm	L(电容高度)＝25±2mm
		L×W×H(mm)	L×W×H(mm)
Φ5	2000	328×235×50	328×235×57
Φ6.3	1500		
Φ8	1000		
Φ10	600		
Φ12.5	400		
Φ16	250		
Φ18	200		



* 散装品包装数量 Bulk packaging quantity

直径 ΦD(mm) Diameter	高度 L(mm) Length	数量（只/袋） Quantity （pcs/bag）	袋/盒 bag/box	内箱/外箱 Inner box/outer box	(只/箱) psc/box
Φ4	7-8	1000	15	4	60000
Φ5	5-7	1000	12	4	48000
Φ5	11	1000	10	4	40000
Φ6.3	5-7	1000	10	4	40000
Φ6.3	8-15	1000	8	4	32000
Φ6.3	15-20	1000	6	4	24000
Φ8	5-12	500	8	4	16000
Φ8	14-16	500	8	4	16000
Φ8	20	500	6	4	12000
Φ10	9-13	500	6	4	12000
Φ10	14-16	250	8	4	8000
Φ10	17-20	250	8	4	8000
Φ10	25-30	200	8	4	6400
Φ10	31-35	200	6	4	4800
Φ12-Φ13	16-28	200	6	4	4800
Φ12-Φ13	30-40	100	8	4	3200
Φ12-Φ13	45-55	100	6	4	2400
Φ16	15-20	100	8	4	3200
Φ16	21-30	100	6	4	2400
Φ16	31-40	50	10	4	2000
Φ18	15-20	100	6	2	1200
Φ18	25-30	50	8	2	800
Φ18	35-40	50	6	2	600
Φ18	41-50	25	10	2	500
Φ20	25-40	50	10	2	1000
Φ22	25-35	50	5	2	500
Φ22	≥40	25	10	2	500

◆贮存方法 Storage Methods

＊ 请保管在室温 5℃～35℃，湿度 75%RH 以下的环境

＊（1）产品储存期限：≤12 个月；Storage life：≤12 months

＊（2）产品储存期限超 12 个月时，需充电后再使用

＊（3）产品储存时间超过 3 年的应报废处理

＊（4）库存有效期以套管上印刷的时间开始计算

＊（5）请尽量以包装状态保管

＊（6）当电容器长期储存后，漏电流会升高，温度越高，漏电流上升越快，因此应注意储存环境。如铝电解电容器的漏电流上升对电路有不良影响，请在使用前充电处理

＊（7）请避免在以下环境中保管

① 溅水、高温高湿及结露的环境；

② 溅油、或者充满气体油成分的环境；

③ 充满酸性有毒气体（硫化氢、亚硫酸、亚硝酸、氯、溴、溴化甲烷等）的环境；

＊ We recommend the following conditions for storage: Ambient temperature: 5℃～35℃, Ambient humidity: Less than 75% RH.

* (1)Storage life:≤12 months;

* (2) If storage life time is over 12 months,the products need to be recharged;

* (3) If storage life time is over three years, the product need to be discarded;

* (4) Expiry date:calculating from the date marked on the sleeve;

* (5) Please keep capacitors in the original package;

*(6)Leakage current tends to increase when capacitors have been stored for long period of time. The higher temperature, the faster leakage current rises. Please take caution when selecting the storage location. The leakage current decreases gradually as voltage is applied to the capacitor. If the rising leakage current may cause problems in the circuit, please charge the capacitor before using.

* (7) Avoid storing the capacitors under such circumstances:

①Environment of water splashing, high temperature, high humidity and dewing;

②The environment that splashes oil, or is filled with gas oil;

③With full of acid toxic gases environment such as(hydrogen sulfide , sulfurous acid, nitrous acid, chlorine , bromine, methyl bromide, etc.

◆铝电解电容器使用注意事项

Important information on the application of aluminum electrolytic capacitors

＊(1)直流铝电解电容器应按正确的极性使用

当直流铝电解电容器被反极性接入电路时，电容器会导致电子线路短路，由此产生的电流会引致电容器损坏。若电路中有可能在负引线施加正极电压，请选用无极性产品

＊(2)在额定工作电压以下作用

当电容器上所施加电压高于额定工作电压时，电容器的漏电流将上升，其电气特性将在短时内劣化直至损坏。注意电压峰值请勿超出额定工作电压

* (3)常规产品禁止作快速充放电使用

当常规电容器被用作快速充电用途。其使用寿命可能会因为容量下降，温度急剧上升等而缩减。

* (4)施加纹波电流应小于额定值

施加纹波电流超过额定值后，会导致电容器体过热，容量下降，寿命缩短。所施加纹波电压的峰值应小于额定工作电压。

* (5)使用环境温度

铝电解电容器的使用寿命会受到环境温度的影响。据科学统计，使用环境温度下降 10℃其使用寿命增加 1 倍。

* (6)引出线强度

当拉力施加到电容器引出线，该拉力将作用于电容器内部，这将导致电容器内部短路，开路或漏电流上升。在电容器焊装到电路板，请勿强烈摇动电容器。

* (7)焊接过程耐热性

铝电解电容器装至电路板进行浸焊或波峰焊时，其塑料套管可能因焊接时间过长、温度过高而发生破裂或二次收缩。

* (8)电路板的安装孔距及安装位置

电路板安装孔的设计应与产品说明书的引线脚距一致，如果将电容器强行插入孔距不配套的电路板，那么会有应力作用于引出线，这将导致短路或漏电流上升。

* (9)铝电解电容可能会有残留电压，请在使用前对电容器进行放电。

(1) DC aluminum electrolytic capacitors should be used according to the correct polarity

When a DC aluminum electrolytic capacitor is connected to a circuit with reverse polarity, the capacitor will cause a short circuit in the electronic circuit, and the resulting current will cause damage to the capacitor. If it is possible to apply positive voltage to the negative lead in the circuit, please choose a non-polar product.

(2) Function below rated operating voltage

When capacitor is used at higher voltage than the rated voltage, leakage current increases, characteristics drastically deteriorate and damage in a short period may occur as a result. Please take extra caution that the peak voltage should not exceed the rated voltage.

(3) Conventional capacitors are prohibited from being used for fast charging and discharging

When aluminum electrolytic capacitors for general purpose are employed in rapid charge and discharge application, its life may be shorted by capacitance decreasing, heat rising, etc.

(4) The applied ripple current should be less than the rated value

Excessive heat will reduce capacitance and result in shortened life of capacitor if ripple currents exceeding the specified rated value are applied. The peak value of the ripple voltage should be less than the rated voltage.

(5) Operating ambient temperature

Its ambient temperature closely affects the life of an aluminum electrolytic capacitor. It is generally stated, that life doubles for each 10℃ decrease in temperature.

(6) Terminal Strength

When a strong force is applied to the lead wires or terminals, stress is put on the internal connections. This may result in short circuit, open circuit or increased leakage current. It is not advisable to bend or handle a capacitor after it has been soldered to the PCB board.

(7) Heat resistance during welding process

In the dip soldering process of PCB board with aluminum electrolytic capacitors mounted, secondary shrinkage or crack of PVC sleeve may be observed when solder temperature is too high or dipping time is too long.

(8) Installation pitch-row and installation position of circuit boards

PCB board must be designed so its hole coincides with the lead pitch (lead spacing) of the capacitor specified by the catalog or specifications. When a capacitor is forcibly inserted into an unmatched hole, a stress is put on the leads. This could result in a short circuit or increased leakage current.

(9) Aluminum electrolytic capacitors may have residual voltage, please discharge the capacitor before use.

◆推荐安装/焊接方法 Recommended Installation/Welding Methods

*波峰焊接条件

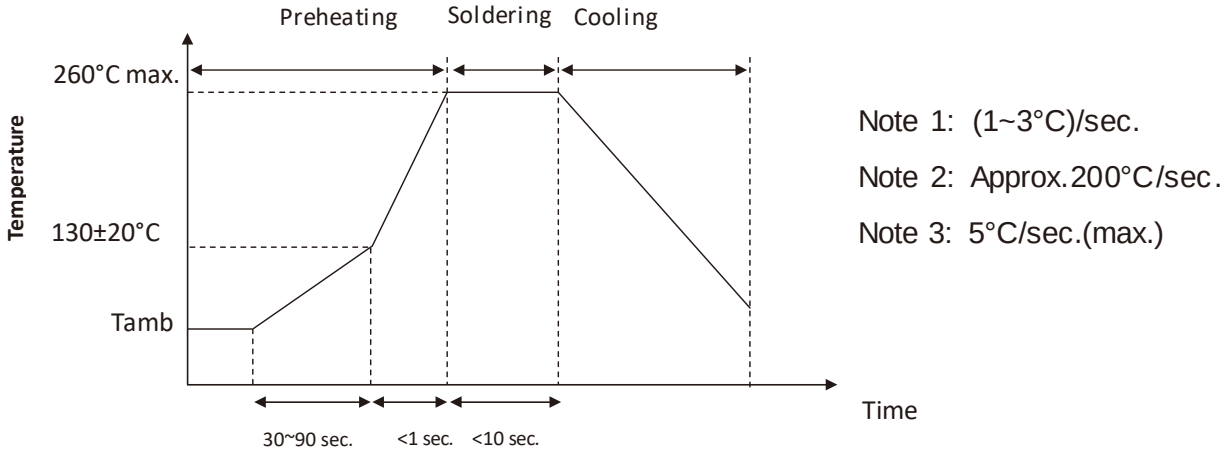
预热：105℃

波峰焊：260±5℃ 10±1 秒以下（或 380±10℃ 3±0.5 秒以下：手焊）

*Wave Soldering Conditions

Preheating: 105°C

Wave Soldering: 260±5°C for ≤10±1 seconds (or 380±10°C for ≤3±0.5 seconds for manual soldering)



Note 1: (1~3°C)/sec.

Note 2: Approx.200°C/sec.

Note 3: 5°C/sec.(max.)

◆ 其它说明 OTHERS

*本产品不含铅、镉等元素

This product does not include Plumbum or Cadmium.

■修订履历

版本	日期	修订内容	修订人
QWH-24.002	2024 年 7 月 30 日	全文格式修改	郭嘉敏
QWH-25.001	2025 年 7 月 10 日	增加推荐安装方法	黄晓纯

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