Leaguer product specification content

华冠电容规格承认书目录

1、Parts lists 物料清单:

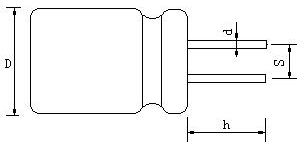
Customer's Part No. 客户代码	Leaguer's Part No. 华冠代码	Leaguer Series	Size(mm) D×L	W.V (V)	Cap. (μF)	Cap. Tol. ±(%)	tan δ 损耗	Iu (uA) 漏电流	Ripple Current 纹波电流 (mA)
	RS21A101M0511F3	RS2	5*11	10	100	20	0.24	10	140
	RS21A331M0812F2	RS2	8*12	10	330	20	0.24	33	368
	RS21A471M0812F2	RS2	8*12	10	470	20	0.24	47	475

2、Explanation of Leaguer Part Number 代码解释

型号 Series	额定电压 R.W.Voltage	静电容量 N.Capacitance	容量允许误差 Cap.Tol	尺寸 Case Size	引线脚型 Radial Lead Type

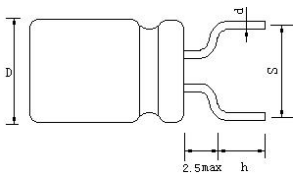
Series	Voltage		Capacitance		Cap Tol		Case Size	
VS1	4	0G	0.1	0R1	±5%	J	3×5	0305
VS2	6.3	0J	0.22	R22			4×5	0405
VT1	10	1A	0.33	R33	±10%	K	5×5	0505
VZ1	16	1C	0.47	R47			6.3×5	0605
VBP	25	1E	1	010	±20%	M	4×7	0407
VTD	35	1V	2.2	2R2			5×7	0507
MS1	50	1H	3.3	3R3	+30%		6.3×7	0607
MS2	63	1J	4.7	4R7	-10%	Q	8×7	0807
MT1	80	1K	10	100			5×11	0511
MZ1	100	2A	22	220	+50%		6.3×11.5	0611
MBP	160	2C	33	330	-10%	T	8×12	0812
MLL	200	2D	47	470			8×14	0814
SS1	250	2E	100	101			8×16	0816
ST1	350	2V	220	221			8×20	0820
RS1	400	2G	330	331			10×12.5	1012
RS2	450	2W	470	471			10×16	1016
RT1			1000	102			10×20	1020
RSE			2200	222			10×25	1025
RTE			3300	332			10×30	1030
RTZ			47000	473			13×20	1320
							13×25	1325
							13×30	1330
							13×36	1336
							13×40	1340
							16×16	1616
							16×20	1620
							16×25	1625
							16×32	1632
							16×36	1636
							18×20	1820
							18×26	1826
							18×34	1834
							18×40	1840
							22×32	2232
							22×36	2236
							片式 SMD	
							4×5.4	0405
							6.3×5.4	0605
							6.3×5.8	0606
							6.3×7.7	0607
							8×6.2	0806
							10×10.2	1010

直线切脚 Straight cut



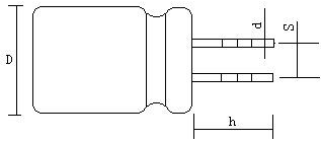
C*

成形切脚 Forming cut

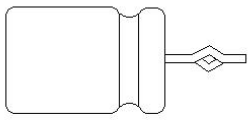


FC

折曲切脚 Kink cut



KC



长脚散装 Bulk — B1

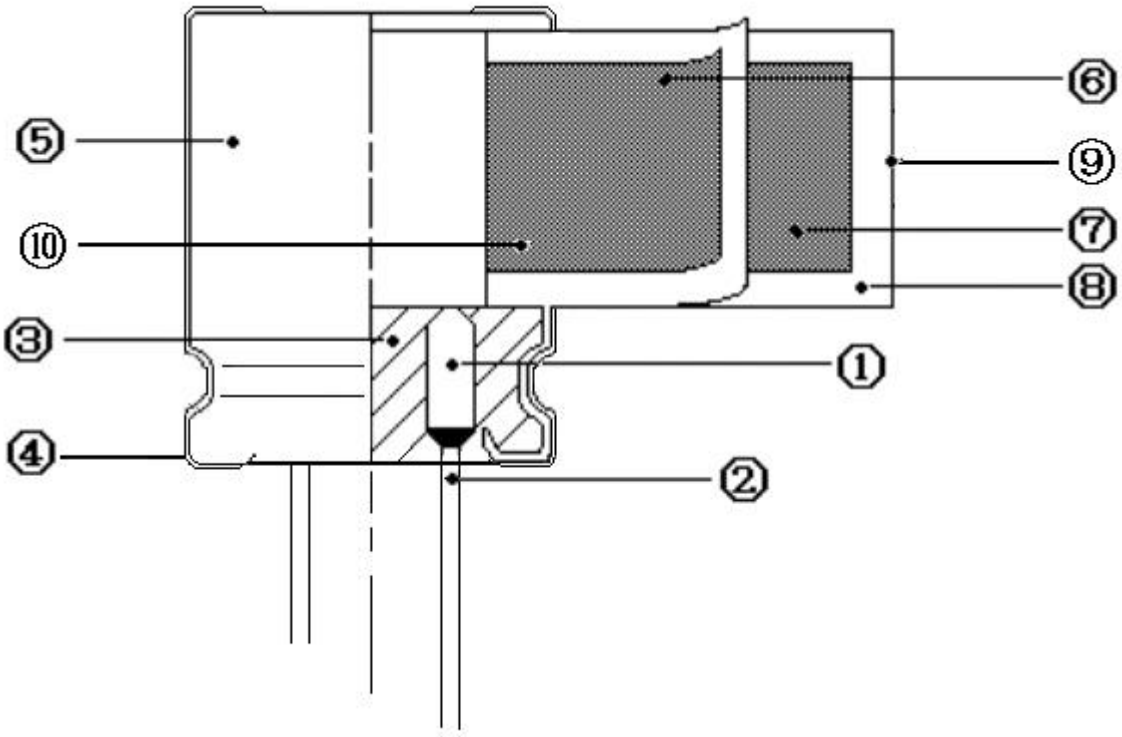
成型散装 Bulk & Forming — BF

直脚编带 Taping — F1 / F2 / F3

片式产品 v-chip — V1

例：RS21C101M0511F1　表示：RS2　16V100UF　5×11　±20%　5mmTaping

3、 Construction 结构图

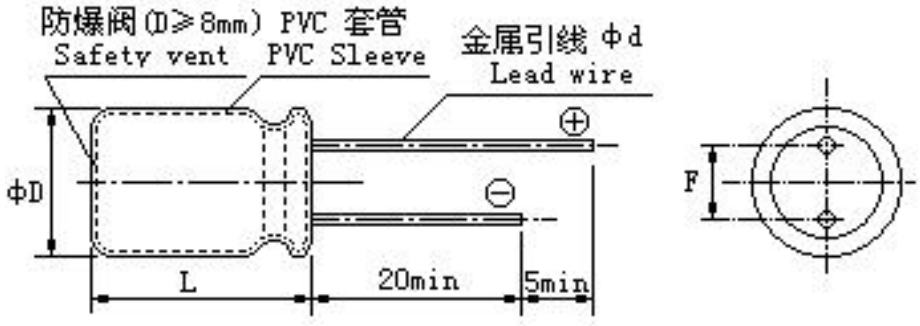


NO	Component	Materials
1	Lead line	Aluminum 99. 93%
2	Terminal	Tinned copper-ply wire(Lead Free)
3	Sealing pad	EPDM
4	Sleeve	PVC
5	Case	Aluminum 99. 5%
6	Anode foil	Formed aluminum 99. 98%
7	Cathode foil	Etched aluminum 99. 8%
8	Separator	Pulp
9	Adhesive glue	PVA
10	Electrolyte	Glycol
*	Ink	White ink

4、 Standard Rating 基本参数

No.	Item	Ratings								
1	Temperature Range 使用温度范围	- 40～+85℃								
2	Rated Voltage Range 额定电压范围	6.3～450V								
3	Capacitance Range 标称容量范围	0.1～10000μF								
4	Capacitance Tol 容量容许偏差	±20% (120Hz, 20℃)								
5	Surge Voltage 浪涌电压(V.DC)	R.V.	6.3	10	16	25	35	50	63	400
		S.V.	7.2	11.5	18.4	28.8	40.3	57.5	72.5	460

5、 Dimension & Appearance 外形尺寸（防爆阀为“十”字型“Y”字型）



mm

ΦD±0.5	5	6.3	8	10	13	16	18
$L^{+1.5}$	11	11.5	12	12.5/16/20	20/25	25	34
F±0.5	2.0	2.5	3.5	5.0	5.0	7.5	7.5
Φd±0.05	0.50			0.60		0.80	

6、 Electrical Requirements 电性能要求

<table>
<tr><td>1</td><td>Capacitance Tolerance
容量允许偏差</td><td>±20% at 120Hz,20℃</td></tr>
<tr><td>2</td><td>Operation Temperature Range 使用温度范围</td><td>6.3V~100V
-40℃~+85℃</td></tr>
<tr><td>3</td><td>Leakage Current
漏电流</td><td>After DC Voltage is applied to capacitor through the series protective resistance(1KΩ),and then terminal voltage may reach the rated working voltage. The leakage current when measured after 2 minutes (6.3~100V)shall be below the value of the following equation.
将电容器串联 1KΩ电阻后，施加额定直流电压 2 分钟，测量漏电流满足以下要求。
<table>
<tr><td>6.3~100V
I≤0.01CV or 3μA,
Whichever is greater</td><td>160~450V
I=0.03CV+15uA(5minutes)</td></tr>
</table>
<table>
<tr><td>Where</td><td>I=Leakage Current(μA)
C=Capacitance(μF)
V=Rated DC Working Voltage(V)</td></tr>
</table>
</td></tr>
<tr><td>4</td><td>Dissipation Factor
损耗角正切值
(Tanδ at 120Hz,20℃)</td><td>
<table>
<tr><td>Rated 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>400</td></tr>
<tr><td>Tanδ (max)</td><td>0.24</td><td>0.20</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.10</td><td>0.25</td></tr>
</table>
</td></tr>
<tr><td>5</td><td>Low Temperature Characteristics
低温特性
(at 120Hz)</td><td>
<table>
<tr><td colspan="2">Rated 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>400</td></tr>
<tr><td>Impedance Ratio</td><td>Z(-40℃)/Z(+20℃)</td><td>8</td><td>6</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>10</td></tr>
</table>
</td></tr>
<tr><td>6</td><td>Rated Ripple Current
纹波电流
(at 120Hz,85℃)</td><td>Page 8</td></tr>
</table>

Case Size and Ripple Current 尺寸和纹波电流

WV / D×L(mm) / mA / μF	6.3V 0J		10V 1A		16 1C		25V 1E		35V 1V		50V 1H		63V 1J		100V 2A	
	ΦD×L	mA	ΦD×L	mA	ΦD×L	mA	ΦD×L	mA	ΦD×L	mA	ΦD×L	mA	ΦD×L	mA	ΦD×L	mA
0.1 (0R1)											5×11	1.1				
0.22 (R22)											5×11	2.5				
0.33 (R33)											5×11	4				
0.47 (R47)											5×11	7			5×11	8
1.0 (010)											5×11	13			5×11	16
2.2 (2R2)											5×11	23			5×11	35
3.3 (3R3)											5×11	35			5×11	45
4.7 (4R7)											5×11	41			5×11	50
10 (100)											5×11	60	5×11	70	5×11	75
22 (220)									5×11	90	5×11	95	5×11	110	6.3×11.5	135
33 (330)							5×11	98	5×11	110	5×11	130	6.3×11.5	140	8×12	185
47 (470)	5×11	80	5×11	95	5×11	115	5×11	120	5×11	135	6.3×11.5	160	6.3×11.5	190	10×12.5	235
100 (101)	5×11	135	5×11	140	5×11	175	5×11	185	6.3×11.5	215	8×12	270	8×12	290	10×20	380
220 (221)	5×11	220	5×11	230	6.3×11.5	280	6.3×11.5 8×12	310 368	8×12	370	10×12.5	435	10×16	490	13×25	629
330 (331)	6.3×11.5	280	6.3×11.5 8×12	299 349	8×12	380	8×12	410	10×12.5	500	10×20	650	10×20	680	13×25	760
470 (471)	6.3×11.5	360	8×12	475	8×12	460	10×12.5	550	10×16	680	10×20	760	12.5×20	880	16×25	950
1000 (102)	8×12 10×12	590 671	10×12.5	660	10×16	800	10×20	970	12.5×20	1180	13×25	1350	16×25	1350		
2200 (222)	10×16	920	10×20	1090	12.5×20	1320	13×25	1570	16×25	1780						
3300 (332)	10×20	1200	12.5×20	1440	13×25	1670	16×25	2000			18×34	2135				
4700 (472)	12.5×20	1550	13×25	1800	16×25	2120										
6800 (682)	13×25	1920	16×25	2250												
10000(103)	16×25	2370														

WV / D×L(mm) / mA / μF	100 (2A)		160 (2C)		200 (2D)		250 (2E)		350 (2V)		400 (2G)		450 (2W)	
	ΦD×L	mA	ΦD×L	mA	ΦD×L	mA	ΦD×L	mA	ΦD×L	mA	ΦD×L	mA	ΦD×L	mA
4.7 (4R7)	5×11	50	6.3×11	45	6.3×11	51	6.3×11	54	8×12	55	10×13 10×20	80 103	10×12	46
10 (100)	5×11	75	8×12	83	8×12	85	10×12	90	10×16	90	10×16	110	10×20	84
22 (220)	6.3×11	135	10×12	130	10×16	150	10×16	150	12.5×20	185	13×20	200	12.5×25	140
47 (470)	8×12	220	10×20	230	10×20	220	12.5×20	260	16×25	300	16×25	250	16×31	220
220 (221)	12.5×20	610	16×31	645	16×31	540	18×36	680						
330 (331)	12.5×25	760	16×36	700	18×36	800								
470 (471)	16×25	1000	18×40	1200										

Remark：（备注）

Customers' specification will be accorded on request.

客户的特殊要求将被遵守。

7、Endurance characteristic 寿命特性

<table>
<tr><th>No.</th><th>Item
项目</th><th>Performance Characteristics
性能要求</th><th colspan="3">Test
测试</th></tr>
<tr><td rowspan="7">1</td><td rowspan="7">Characteristics at High and Low Temperature
高低温特性</td><td rowspan="7">Step2（阶段 2）
Impedance Ratio:（阻抗比）
Less than the item 5 Value of page 7
小于第 7 页第 5 项中的值
Ratio against step 1 相对于阶段 1 比值
Step4（阶段 4）
Leakage Current:（漏电流）
≤500% of the value of item 3 of Page 7
小于或等于第 7 页第 3 项规定值 5 倍
Capacitance Change:（容量变化）
Within ±20% of the value in step 1
与阶段 1 的值比变化率不大于 20%</td><td>Step</td><td>Test Temperature</td><td>Time</td></tr>
<tr><td>1</td><td>20±2℃</td><td>-</td></tr>
<tr><td>2</td><td>-40±3℃</td><td>30min</td></tr>
<tr><td>3</td><td>20±2℃</td><td>10-15min</td></tr>
<tr><td>4</td><td>85±2℃</td><td>30min</td></tr>
<tr><td>5</td><td>20±2℃</td><td>10-15min</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>2</td><td>Surge Voltage Test
浪涌测试</td><td>Leakage Current:（漏电流）
≤the value of item 3 of page 7
≤第 7 页第 3 项规定值
Capacitance Change:（容量变化）
Within ±15% of the initial measured value
与初始测量值比，变化率不大于 15%
Tangent of Loss Angle:（损耗角正切值）
≤100% of the value of item 4 of page 7
≤第 7 页第 4 项规定值</td><td colspan="3">After surge voltage(the value of P10) applied at a cycling rate of 30 seconds charge and 5.5 minutes discharge 1000 successive test cycle. Test temperature:15~35℃.对电容器施加浪涌电压，每充电 30s，放电 5min30sec，连续循环 1000 次后测量。测试温度：15~35℃。</td></tr>
<tr><td rowspan="4">3</td><td rowspan="4">Tensile Test
拔出力测试</td><td rowspan="4">No broken and undamaged
无损坏</td><td colspan="3">The lead tabs shall not be broken or any malformed condition after fixing capacitor vertically and pressing the following weight on the lead tabs of capacitor for 10±1 secs.</td></tr>
<tr><td colspan="2">Lead diameter</td><td>Weight(N)</td></tr>
<tr><td colspan="2">0.5mm</td><td>0.5</td></tr>
<tr><td colspan="2">0.6mm</td><td>0.6</td></tr>
<tr><td colspan="2">0.8mm</td><td>0.8</td></tr>
<tr><td>4</td><td>Solderability
可焊性</td><td>More than 95% of the terminal surface shall be covered with new solder.
引线端子表面 95%以上的面积附着新焊料。</td><td colspan="3">Temperature: 235±5℃（温度）
Immersing Time: 2±0.5sec
（浸入时间）
Immersing Depth: Dip the terminal for Approx. 0.5~1mm thick
浸入深度：浸入引线约 0.5~1mm
Flux: Approx. 25% rosin in Ethanol
助焊剂：约 25%的松香溶于酒精</td></tr>
</table>

No.	Item 项目	Performance Characteristics 性能要求	Test 测试
5	Vibration 振动	Capacitance:（容量） During test, measured value shall be stabilized(measured several times within 30 min. Before completion of test) 在测试的 30 分钟内，观测电容量测试值无明显变化 Appearance:（外观） No significant change can be observe 无可见损伤 Capacitance change:（容量变化） Within ±5% of initial measured value 容量变化率不超过 5%	Frequency: 10~55Hz reciprocation for 1 min 频率：10 到 55 Hz，每分钟互换 Total amplitudes:0.75mm 振幅：0.75mm Direction and during of vibration: 3 orthogonal directions, Mutually each for 2hrs total 6hrs 在互相垂直的 3 个方向上，每个方向振动 2 小时，共 6 小时。
6	Solder Heat-Resistance Test 耐焊接热	Appearance:（外观） No significant change can be observe 无可见损伤 Capacitance change:（容量变化） Within ±5% of initial measured value 容量变化率不超过 5%	The section of lead below 4mm form the body of capacitor must be immersed in 260℃±5℃ liquid tin 10 ± 1 seconds. Then. removing the capacitor terminal is restored to 20℃ within two hours or over an hour. 电容器本体 4mm 以下浸入 260℃±5℃焊锡中，持续 10±1s，然后室温 20℃恢复 1-2 小时。
7	Humidity Test 潮湿试验	Leakage Current:（漏电流） ≤the value of item 3 of page 7 ≤第 7 页第 3 项规定值 Capacitance Change:（容量变化） Within ±10% of the initial measured value 与初始测量值比变化率不大于 10% Tangent of Loss Angle:（损耗角正切值） ≤120% of the value of item 4 of page 7 ≤第 7 页第 4 项规定值的 1.2 倍 Appearance:（外观） No significant change can be observed. 无可见损伤	Capacitors shall be exposed for 500±6hrs in an atmosphere of 90~95% R.H. at 40℃. And then the capacitor shall be subjected to standard atmospheric conditions for 16 hours, after which measurements shall be made. 电容器放置在温度 40℃、湿度 90~95%的环境下 500±6 小时，然后放置在标准环境中恢复 16 小时

No.	Item 项目	Performance Characteristics 性能要求	Test 测试
8	High Temperature Load Life Test 高温负荷寿命	Leakage Current:（漏电流） ≤the value of item 3 of page 7 ≤第 7 页第 3 项规定值 Capacitance Change:（容量变化） ≤10V： Within ± 25% of the initial measured value 与初始测量值比变化率不大于 25% ＞10V Within ± 20% of the initial measured value 与初始测量值比变化率不大于 20% Tangent of Loss Angle:（损耗角正切值） ≤200% of the value of item 4 of page 7 ≤第 7 页第 4 项规定值的 2 倍 Appearance:（外观） No significant change can be observed. 无可见损伤	Test Temperature 温度: 85±2℃ Test Duration 试验持续时间: ΦD＜10：2000hours ΦD≥10：3000hours Applied Voltage: Rated Voltage 施加电压：额定电压 After subjected to the test, the capacitors shall be left at the room temperature for 2 hours prior to the measurement. 试验完成后，电容器在测量前应在室温中恢复 2 小时。
9	High Temperature Unload Life Test 高温储存	Leakage Current:（漏电流） ≤200% of the value of item 3 of Page 7 ≤第 7 页第 3 项规定值的 2 倍 Capacitance Change:（容量变化） Within ± 20% of the initial measured value 与初始测量值比变化率不大于 20% Tangent of Loss Angle:（损耗角正切值） ≤200% of the value of item 4 of page 7 ≤第 7 页第 4 项规定值的 2 倍 Appearance:（外观） No significant change can be observed. 无可见损伤	Test Temperature 温度: 85±2℃ Test Duration: 1000hours 试验持续时间：1000 小时 After subjected to the test, the capacitors shall be left at the room temperature for 2 hours prior to the measurement. 试验完成后，电容器在测量前应在室温中恢复 2 小时。

8、Marking 标示

Following items shall be marked on the sleeve.

电容器的套管上印刷以下内容

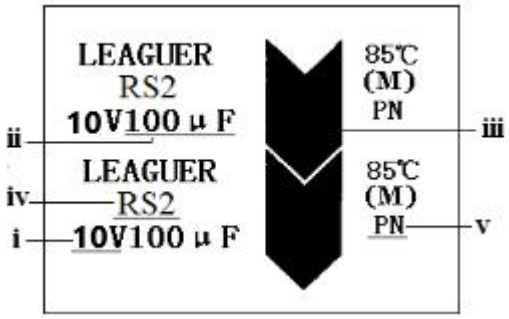
i. Rated Voltage 额定电压

ii. Capacitance 额定容量

iii. Negative Polarity 负极标示

iv. Series 系列代码

v. Date Code 日期代码



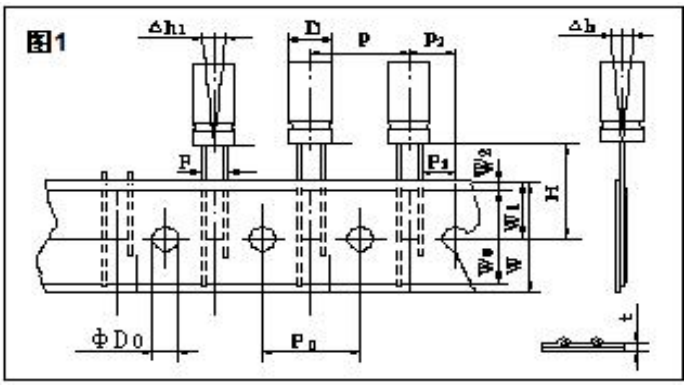
Date Code：

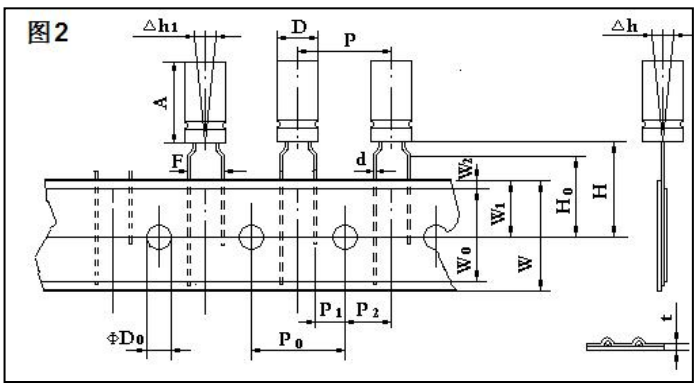
XI(2018.1～2018.6) XT(2018.7～2018.12)

YU(2019.1～2019.6) YC(2019.7～2019.12)

ZV(2020.1～2020.6) ZP(2020.7～2020.12)

9、Taping 编带（单位：mm）





● **Taping and size 编带形状及尺寸要求**

	外壳尺寸 Case Size		公差
	φ5 φ6.3 φ8	φ10 φ13	Tol
Code	F1	F2	--
Pic.	图 2	图 1	--
φd	0.5	0.6	±0.05
p	12.7		±1.0
P_0	12.7		±0.3
P_1	3.85		±0.5
P_2	6.35		+0.6-0.2
F	5.0		±1.0
△h	0		±1.0
W	18.0		±0.5
W_0	11		MIN
W_1	9.0		±0.5
W_2	1.5		MAX
H	18.5		±0.75
H_0	16.0	--	±0.75
D_0	4.0		±0.3
t	0.6		±0.2
△h1	0		±0.2

	外壳尺寸 Case Size		公差
	φ5	φ6.3	Tol
Code	F3	F2	--
Pic.	图 2	图 1	--
φd	0.5		±0.05
p	12.7		±1.0
P_0	12.7		±0.3
P_1	5.1		±0.5
P_2	6.35		±1.0
F	2.5		+0.6-0.2
△h	0		±1.0
W	18.0		±0.5
W_0	11		MIN
W_1	9.0		±0.5
W_2	1.5		MAX
H	18.5		±0.75
H_0	17.0	--	±0.75
D_0	4.0		±0.3
t	0.6		±0.2
△h1	0		±0.2

10、Package 包装

a) Package Quantity 包装数量

● Taped & Boxed 编带品

Size	Quantity/taping box (pcs)	Quantity/one outer box (pcs)
φ5×11	2000	20000
φ6.3×11	2000	20000
φ8×12	1000	10000
φ10×13	500	5000
φ10×16	500	4000
φ10×20	500	4000

- Bulk 散装品

Size	Plastic Bag (pcs)	Inside Packing Box (pcs)	One Outer Box (pcs)
Φ5×11	1000	15000	30000
Φ6.3×11	1000	10000	20000
Φ8×12	500	5000	10000
Φ10×13	500	4000	8000
Φ10×16	250	2000	4000
Φ10×20	200	2000	4000
Φ13×25	100	1000	2000
Φ18×34	50	400	800

b) Label 标签

I)订单号码　　P / O (PURCHASE ORDER)

II)客户产线号　LINE No (LINE NUMBER)

III)供应商料号　MPN

IV)客户料号　　CPN

V)包装数量　　Qty

Application Guideline

1、Circuit Design

(1) Please make sure the environmental and mounting conditions to which the capacitor will be exposed to are within the conditions specified in Leaguer's catalogue.

(2) Operating temperature and applied ripple must be within Leaguer's specification.

(3) Appropriate capacitors which comply with the life requirement of the products should be selected when designing the circuit.

(4) Aluminum electrolytic capacitors are polarized. Do not apply reverse voltage or AC voltage. Please use non-polarized capacitors for a circuit that can possibly see reserved polarity. Note: Even non-polarized capacitors cann't be used for AC voltage application.

(5) Do not use aluminum electrolytic capacitors in a circuit that requires rapid and very frequent charge / discharge. In this type of circuit, it is necessary to use a special design capacitor with extended life characteristics.

(6) Do not apply excess voltage.

① Please pay attention so that the peak voltage, which is DC voltage overlapped by ripple current, will not exceed the rated voltage.

②In the case where more than 2 aluminum electrolytic capacitors are used in series, please make sure that applied voltage will be lower than rated voltage and the voltage will be applied to each capacitor equally using a balancing resistor in parallel with the capacitor.

(7) Outer sleeve of the capacitor is not guaranteed as an electrical insulator. Do not use a standard sleeve on a capacitor in applications that require the electrical insulation. When the application requires special insulation, please contact our engineer office for details.

(8) Capacitors must not be used under the following conditions:

① (a) Capacitors must not be exposed to water (including condensation), brine or oil.

(b) Ambient conditions that include toxic gases such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, ammonium, etc..

(c) Ambient conditions that expose the capacitor to ozone, ultraviolet ray and radiation.

② Severe vibration and physical shock conditions that exceed LEAGUER'S specification.

Vibration test condition:

vibration frequency range	: 10-55-10Hz
sweep rate	: 10-55-10Hz/minute
sweep method	: logarithmic '
amplitude or acceleration	: 1.5mm (max. acceleration is 10G)
direction of vibration	: X, Y, Z direction
testing time	: 2 hours per each direction

Shock is not applicable normally.

If a particular condition is required, please contact us.

(9) When designing a circuit board, please pay attention to the following:

① Make the pad spacing on the PC board match the lead space of the capacitor.

② There should not be any circuit pattern or circuit wire above the capacitor safety vent.

(10) Do not design a circuit board so that heat generating components are placed near an aluminum electrolytic capacitor or reverse side of PC board (under the capacitor).

(11) Please refer to the pad size layout recommendations in our catalogue when designing in surface mount capacitors.

(12) Electrical characteristics may vary depending on changes in temperature and frequency. Please consider this variation when you design circuits.

(13) When you install more than 2 capacitors in parallel, consider the balance of current flowing into the capacitors.

2. Mounting

(1) Once a capacitor has been assembled in the set and power applied, do not attempt to re-use the capacitor in other circuits or application.

(2) Electric potential between positive and negative terminal may exist as a result of returned electromotive force, so please discharge the capacitor using a 1kΩ resistor.

(3) Leakage current of the parts that have been stored fore more than 2 years may increase. When leakage current has increased, please perform a voltage treatment using a 1kΩ resistor.

(4) Please confirm ratings before installing capacitors on the PC board.

(5) Please confirm polarity before installing capacitors on the PC board.

(6) Do not drop capacitors on the floor, nor use a capacitor that was dropped.

(7) Be careful not to deform the capacitor during installation.

(8) Please confirm that the lead spacing of the capacitor matches the pad spacing of the PC board prior to installation.

(9) Please pay attention to that the mechanical shock to the capacitor by suction nozzle of the automatic insertion machine or automatic mounter, or by product checker, or by centering mechanism.

(10) soldering

Soldering condition must be confirmed to be within Leaguer's specification.

(11) Do not tilt lay down or twist the capacitor body after the capacitor are soldered to the PC board.

(12) Do not carry the PC board by grasping the soldered capacitor.

(13) Please do not allow anything to touch the capacitor after soldering. If PC board are stored in stack, please make sure PC board or the other components do not touch the capacitor.

The capacitors shall not be effected by any radiated heat from the soldered PC board or other components after soldering.

(14) Cleaning

① Do not clean capacitors with halogenated cleaning agent. However, if it is necessary to clean with halogenated cleaning agent, please contact us.

② Recommended cleaning method

Applicable: Any type, any ratings

Cleaning agents: Pine Alpha ST-100S, Clean Through 750H/750L/710M, Sanelek B-12, Aqua Cleaner 210SEP, Techno Care FRW14~ 17, Isopropyl Alcohol

Cleaning conditions: Total cleaning time shall be within 5 minutes by immersion, ultrasonic or other method. Temperature of the cleaning agent shall be 60℃ or lower. After cleaning, capacitors should be dried using hot air for minimum of 10 minutes along with the PC board. Hot air temperature should be below the maximum operating temperature of the capacitor. Insufficient dry after water rinse may cause appearance problems, sleeve shrink, bottom-plate bulge and such.

③ Avoid using ozone destructive substances for cleaning agents to concern about global environment.

④ Please consult us regarding other cleaning agents or cleaning methods.

3. In the Equipment

(1) Do not directly touch terminal by hand.

(2) Do not short between terminals by conductor, nor spill conductible liquid such as alkaline or acidic

solution on or near the capacitor.

(3) Please make sure that the ambient conditions where the set is installed will be free from spilling water or oil, direct sunlight, ultraviolet rays, radiation, poisonous gases, vibration or mechanical shock.

4. Maintenance and Inspection

Please periodically inspect the aluminum capacitors that are installed in industrial equipment. The following items should be checked:

Appearance: remarkable abnormality such as vent operation, leaking electrolyte etc.

Electrical characteristic: capacitance, dielectric loss tangent, leakage current etc., which are specified in the LEAGUER'S s catalogue.

5. In an Emergency

(1) If you see smoke due to operation of safety vent, turn off the main switch or pull out the plug from the outlet.

(2) Do not draw your face to the safety vent since gas of over 100℃ will be emitted when the safety vent operates. If the gas has entered your eyes, please flush your eyes immediately in pure water. If you breathed the gas, immediately wash out your month and throat with water. Do not ingest electrolyte. If your skin is exposed to electrolyte, please wash it away using soap and water.

6. Storage

(1) Do not keep capacitor in high temperature and high humidity.

Storage conditions should be:

Temperature :5℃-- 35℃

Humidity :lower than 75%

Place :Indoor

(2) Avoid ambient conditions where capacitors can be covered with water, brine or oil.

(3) Avoid ambient conditions where capacitors are exposed poisonous gases such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, ammonium etc..

(4) Do not keep capacitor in conditions that expose the capacitor to ozone, ultraviolet ray or radiation.

7. Disposal

Please dispose capacitors in either of the following ways:

(1) Incinerate capacitors after crushing parts or making a hole on the capacitor body.

(2) Bury capacitors in the ground. Please have a disposal specialist do it.