No.:

SPECIFICATIONS

Product Type	Multilayer Polymer Aluminum Electrolytic Capacitors
Series	400L
Description	6.3V100μF, V
Part No.	PA400LV107M0J

Fujian Guoguang Xinye Science & Technology Co., Ltd.

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User	





Change History of Specification

Issued Date	Contents	Reason	Page	Mark	Issue No.
2020/8/7	Original	-	1 to 11	-	0





Contents

No.	Item	Page
1	Scope	4
2	Explanation of Part Numbers	4
3	Product Specifications	4
4	Dimensions	5
5	Characteristics	5~7
6	Marking	8
7	Tape & Reel Packaging	8
8	Application Guidelines	9~11
9	HSF Compliance Declaration	11

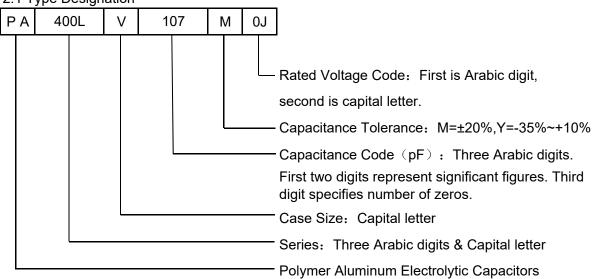


1. Scope

This specification applies to 400L series polymer aluminum electrolytic capacitors for use in electronic equipment.

2. Explanation of Part Numbers





2.2 Rated Voltage Code

Rated Voltage (V.DC)	6.3
Rated Voltage Code	0J

3. Product Specifications

Item	Performance Ch	aracteristics
Operating Temperature Range	-55 ℃~+105 ℃	
Rated Voltage(<i>U</i> _R)	6.3 V	
Nominal Capacitance(C _N)	100 μF	
Capacitance Range	80 μF~120 μF	20 ℃,120 Hz
Leakage Current(I _L)	63 μA (max.)	20 ℃, after 2 minutes
Dissipation Factor(tanδ)	0.06 (max.)	20 ℃,120 Hz
Equivalent Series Resistance(R _{ESR})	15 mΩ (max.)	20 ℃,100 kHz

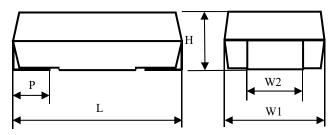
	11	C _N	tanδ	I _L	R _{ESR}	Rated Ripple Current
Part Number	U_{R}	120Hz/20℃	120Hz/20℃	2 min/20 ℃	100kHz/20℃	100kHz/20 ℃~105 ℃
	(V.DC)	(µF)	max.	max. (µA)	max. (mΩ)	max. (A)
PA400LV107M0J	6.3	100	0.06	63	15	3.9





4. Dimensions

4.1 Outline Drawing



4.2 Size Code and Dimensions

Dimensions					
			mm		
Size Code	L±0.3	W1±0.3	H±0.2	P±0.3	W2±0.1
V	7.3	4.3	1.9	1.3	2.4

5. Characteristics

No.	Item	Outline of Test Method	Characteristics	
1	Capacitance	Measuring frequency: 120 Hz±12 Hz	80 μF~120 μF	
	Range	Measuring temperature: 20 ℃		
		Protective resistor: 1 000 Ω		
2	_	Applied voltage: Rated voltage	63 μΑ (max.)	
_	(/ _L)	Measuring: after 2 minutes	ου μΑ (max.)	
		Measuring temperature: 20 ℃		
3	Dissipation	Measuring frequency: 120 Hz±12 Hz	0.06 (max.)	
3	Factor (tanδ)	Measuring temperature: 20 $^{\circ}{\mathbb{C}}$	0.00 (IIIax.)	
4	Equivalent Series	Measuring frequency:100 kHz±10 Hz	15 mΩ (max.)	
	Resistance	Measuring temperature: 20 ℃	,	
		Test method: the reflow method	Visual examination	No visible damage Legible marking
_	Resistance to	Reflow temperature profile:	Capacitance change (∆C/C)	≤±10% of initial measured value
5	Soldering Heat	See Chapter 8.7	tanδ	≤initial limit
		Recovery period: 24 h ±2 h	R _{ESR}	≤initial limit
			/L	≤initial limit
6	Solderability	Test method: the reflow method	Visual examination	Areas to be soldered shall be covered with a new solder coating with no more than a small amount of scattered imperfections such as pinholes or unwetted or de-wetted areas. These imperfections shall not be concentrated in one





No.	Item	Outline of Test Method	Characteristics		
140.	1.0111		Sila	1	
		Solvent to be used: IPA	Visual examination	No visible damage Legible marking	
7	Solvent	Solvent temperature: 23 °C±5 °C		Logible marking	
'	Resistance of the Marking	Method 1 (with rubbing)			
	ano manang	Rubbing material: cotton wool			
		Recovery time: not applicable			
		Solvent to be used: IPA	Visual examination	No visible damage Legible marking	
	Component	Solvent temperature: 23 °C±5 °C		Legible marking	
8	Solvent Resistance	Duration of immersion: 5 min±0.5 min			
	resistance	Method 2 (without rubbing)			
		Recovery time: 48 h			
		Deflection D: 1 mm	Visual examination	No visible damage	
9	Substrate	The number of bends: one	Capacitance change (ΔC/C)	≤±5% of initial measured value	
	Bending Test	The substrate shall be maintained for 20 s±1 s.	tanδ	≤initial limit	
		Capacitance shall be measured with printed board in bent position.			
		Push direction: side	Visual examination	No visible damage	
10	Shear Test	Force: 5 N			
		Holding time: 10 s±1 s			
		<i>T</i> _A =-55 ℃±3 ℃	Visual examination	No visible damage Legible marking	
11	Rapid Change	T _B =+105 ℃±3 ℃	Capacitance change (∆C/C)	≤±10% of initial measured value	
''	of Temperature	Five cycles	tanδ	≤initial limit	
		Duration: t_1 = 30 min	I _L	≤initial limit	
		Recovery time: 1 h \sim 2 h			
		Dry heat:	Visual examination	No visible damage	
		Temperature: +105 ℃±3 ℃	Viodai oxamination	Legible marking	
		Duration: 16 h	Capacitance	≤±10% of initial measured	
		Recovery time: ≥4 h	change (∆C/C)	value	
		Damp heat, cyclic, test Db,	tanδ	≤initial limit	
		first cycle:	I _L	≤initial limit	
		Duration: 24 h			
	12 Climatic Sequence	Temperature: 55 ℃			
12		Cold:			
12		Temperature: -55 ℃±3 ℃			
		Duration: 2 h			
		Recovery time: ≥4 h			
		Damp heat, cyclic, test Db,			
		remaining cycles:			
		Number of cycles: 1			
		Duration: 24 h			
		Temperature: 55 ℃			
		Recovery time: 1 h \sim 2 h			

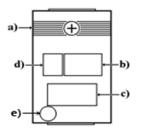




Temperature: 60 °C±2 °C Damp Heat, Steady State	No.	Item	Outline of Test Method	Characteristics		
Damp Heat, Steady State Humidity: (93±3) %RH No voltage shall be applied Land (14 Land (15 Land (Jamino or root motilou	3110		
Steady State No voltage shall be applied Duration: 21 d Recovery time: 1 h → 2 h			Temperature: 60 ℃±2 ℃	Visual examination		
Steady State No voltage shall be applied Lanδ Steady State Duration: 21 d In the capacitors shall be measured at each temperature step: Step 1: 20 °C±2 °C (Initial value measuring) Characteristics at High and Low Temperature Step 3: +105 °C±3 °C Capacitance change (ΔC/C) tanδ Step 1: 20 °C±2 °C (Initial value measuring) Capacitance change (ΔC/C) tanδ Step 3: +105 °C±3 °C Capacitance change (ΔC/C) tanδ Step 1: 20 °C±2 °C (Initial value measured in Step 1 tanδ Step 1 tan		Damp Heat,	Humiditv: (93±3) %RH	1		
Duration: 21 d Recovery time: $1 h \sim 2 h$ The capacitors shall be measured at each temperature step: Step 1: $20 ^{\circ} \text{C} \pm 2 ^{\circ} \text{C}$ (Initial value measuring) Characteristics at High and Low Temperature Step 2: $-55 ^{\circ} \pm 3 ^{\circ} \text{C}$ (Initial value measuring) Characteristics at High and Low Temperature Step 3: $+105 ^{\circ} \pm 3 ^{\circ} \text{C}$ (Step 4: $+105 ^{\circ} \pm 3 ^{\circ} \text{C}$ (S	13	· ·		_		
Recovery time: 1 h ~ 2 h The capacitors shall be measured at each temperature step: Step 1: 20 ℃ ±2 ℃ (Initial value measuring)						
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$ \begin{array}{c} \text{Step 1: } 20 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{(Initial value measuring)} \end{array} \\ \text{Characteristics at High and Low Temperature} \\ \text{Temperature} \\ \text{Step 2: } -55 \text{ $^\circ$} 23 \text{ $^\circ$} \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 3: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 4: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 4: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 5: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 5: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Step 5: } +105 \text{ $^\circ$} 2 \text{ $^\circ$} C \\ \text{Number of cycles: } 10^6 \\ \text{Step 2: } 20 \text{ $^\circ$} \text{ or initial limit} \\ \text{Storial examination} \\ Storial $			·			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$						
Characteristics at High and Low Temperature Step 2: -55 ℃±3 ℃ Step 3: +105 ℃±3 ℃ Step 3: +105 ℃±3 ℃ Capacitance change (ΔC/C) in Step 1 ≤2 times initial limit Capacitance change (ΔC/C) in Step 1 ≤2 times initial limit Lanδ			Step 1: 20 ℃±2 ℃			
14 at High and Low Temperature Step 3: +105 °C±3 °C Step 3: +105 °C±3 °C Capacitance change ($\Delta C/C$) in Step 1 \$\leq 2\$ times initial limit Capacitance change ($\Delta C/C$) in Step 1 \$\leq 2\$ times initial limit I Step 3: +105 °C±3 °C Change ($\Delta C/C$) in Step 1 \$\leq 2\$ times initial limit I \text{ Step 3: +105 °C±3 °C Change ($\Delta C/C$) tan\(\text{ Step 3: +105 °C±3 °C Change ($\Delta C/C$) tan\(\text{ Step 3: +105 °C±3 °C Change ($\Delta C/C$) Change ($\Delta C/C$) Change ($\Delta C/C$) Change and Discharge Duration of charge: 0.5 s Duration of charge: 0.5 s Duration of discharge: 0.5 s Duration of discharge: 0.5 s Duration of discharge: 0.5 s In Step 1 \$\leq 2\$ times initial limit Change ($\Delta C/C$) Change (ΔC		Characteristics	(Initial value measuring)	Canacitanas		
Temperature Step 3: +105 °C±3 °C Capacitance change (ΔC/C) tanδ (a ±20% of value measured in Step 1	14		Step 2: -55 ℃±3 ℃	1		
$ \begin{array}{c} \text{Step 3: } +105 \text{ C} \pm 3 \text{ C} \\ \text{tan} \delta \\ I_L \\ \leq 2 \text{ times initial limit} \\ \leq 5 \text{ times initial limit} \\ \leq 5 \text{ times initial limit} \\ I_L \\ \leq 5 \text{ times initial limit} \\ I_L \\ \leq 5 \text{ times initial limit} \\ No \text{ visible damage Legible marking} \\ Legible \text{ marking} \\ Legible \text{ marking} \\ Legible \text{ marking} \\ Legible \text{ marking} \\ \leq 2 \text{ tomes initial limit} \\ \ell low \ell low \ell low \ell low \ell low \ell low low \ell low low low low \ell low l$		_		_	•	
			Step 3: +105 ℃±3 ℃	•		
Temperature: 15 °C ~ 35 °C				•	•	
Temperature: 15 °C ~ 35 °C						
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Charge and Discharge Duration of charge: 0.5 s tan δ $<$ 2 times initial limit $<$ 2 times initial limit $<$ initial limit $<$ 16 Endurance Endurance Duration: 2000 h Recovery: $1 \text{ h} \sim 2 \text{ h}$ Test temperature: $+105 \text{ °C} \pm 3 \text{ °C}$ Visual examination Recovery: $1 \text{ h} \sim 2 \text{ h}$ Puration: $500^{+24}{_0} \text{ h}$ Recovery: 16 h Recovery: 16 h Recovery: $15 \text{ °C} \sim 35 \text{ °C}$ Visual examination Charge: 0.5 s Visual examination Problem of the problem of tan δ and the problem of tan δ and the problem of the problem of tan δ and tan δ			Temperature. 13 C 33 C		· ·	
Discharge Duration of charge: 0.5 s tan δ $\leqslant 1.5 \text{ times initial limit}$ $\leqslant 2 times $	45	Charge and	Number of cycles: 10 ⁶	•		
Test temperature: $+105 ^{\circ}\text{C} \pm 3 ^{\circ}\text{C}$ Visual examination Capacitance Capacitance -15c Voltage: U_R Duration: $2 000 \text{h}$ Recovery: $1 \text{h} \sim 2 \text{h}$ Storage at High Temperature Test temperature: $+105 ^{\circ}\text{C} \pm 3 ^{\circ}\text{C}$ Visual examination Capacitance -15c $-15 \text{times initial limit}$ Visual examination -15c Visual examination Capacitance -15c Visual examination Capacitance -15c Ca	15	_	Duration of charge: 0.5 s	_	≤1.5 times initial limit	
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Test temperature: $+105 \text{ C} \pm 3 \text{ C}$ Visual examination Legible marking $\leq \pm 20\% \text{of initial measured value} $ $\leq \pm 20\% \text{of initial limit} $ $\leq \pm 20\% \text{of initial measured} $ $\leq \pm 20\% \text{of initial limit} $ $\leq \pm 20\% of i$				I _L		
Test temperature: $15^{\circ}\text{C} \sim 35^{\circ}\text{C}$ Endurance Voltage: U_R Duration: 2 000 h Recovery: 1 h \sim 2 h R_{ESR} Storage at High Temperature Test temperature: $15^{\circ}\text{C} \sim 35^{\circ}\text{C}$ Voltage: U_R Capacitance change (Δ C/C) $A \sim 1.5$ times initial limit $A \sim 1.5$ times initial limit Visual examination Capacitance change (Δ C/C) Visual examination Capacitance change (Δ C/C) Visual examination $A \sim 1.5$ times initial limit Visual examination $A \sim 1.5$ times initial limit			Test temperature: +105 ℃±3 ℃	Visual examination	9	
16EnduranceDuration: 2 000 h Recovery: 1 h \sim 2 htanδ R_{ESR} I_L Visual examination change ($\Delta C/C$)Value \leq 1.5 times initial limit17Storage at High TemperatureTest temperature: +105 °C±3 °CVisual examination Capacitance change ($\Delta C/C$)No visible damage Legible marking \leq ±20%of initial measured value18Duration: 500^{+24} 0 h Recovery: 16 hCapacitance change ($\Delta C/C$) tanδ \leq ±20%of initial measured value19Test temperature: 15 °C \sim 35 °CVisual examination Visual examinationNo visible damage			Voltago: II	Capacitance		
Recovery: $1 \text{ h} \sim 2 \text{ h}$ Recovery: $1 \text{ h} \sim 2 \text{ h}$ Resovery: $1 \text{ h} \sim 2 \text{ h}$ Pouration: $10 \text{ m} \sim 2 \text{ h}$ Recovery: $10 \text{ h} \sim 2 \text{ h}$ Resovery: $10 \text{ h} \sim 2 \text{ h}$ Resov	16	Endurance	voltage. U _R	change (∆C/C)	value	
Storage at High Temperature $P(A)$ Test temperature: $P(A)$ To $P(A)$ Temperature $P(A)$						
Storage at High Temperature $\begin{array}{c} \text{Test temperature: } +105 \ ^{\circ}\text{C} \pm 3 \ ^{\circ}\text{C} \\ \text{Duration: } 500^{+24}_{\ 0} \text{h} \\ \text{Recovery: } 16 \text{h} \\ \text{Test temperature: } 15 \ ^{\circ}\text{C} \sim 35 \ ^{\circ}\text{C} \\ \end{array}$ Visual examination Capacitance change $(\Delta \text{C}/\text{C})$ value $\leq 100 \text{mitial limit}$ $\leq 200 \text{mitial limit}$ ≤ 200			Recovery: 1 h \sim 2 h			
Storage at High Temperature 17 Duration: 500 ⁺²⁴ ₀ h Recovery: 16 h Test temperature: 15 ℃ ~35 ℃ 18 Visual examination Capacitance change (ΔC/C) tanδ Visual examination Legible marking ≤±20% of initial measured value ≤ initial limit Visual examination Visual examination No visible damage				/ _L		
Storage at High Temperature Duration: 500^{+24}_{0} h Recovery: 16 h Capacitance change (Δ C/C) value \leq initial limit \leq 2 times initial limit \leq 2 times initial limit Visual examination No visible damage			Test temperature: +105 $^{\circ}$ C ±3 $^{\circ}$ C	Visual examination	9	
Recovery: 16 h Test temperature: 15 $^{\circ}$ C $^{\circ}$ C $^{\circ}$ C Visual examination Recovery: 16 h Test temperature: 15 $^{\circ}$ C $^{\circ}$ C $^{\circ}$ C Visual examination	17		Duration: 500 ⁺²⁴ , h	•	≤±20%of initial measured	
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Test temperature: 15 °C ~ 35 °C Visual examination No visible damage			inecovery. To II			
Visual examination I. Visual examination			Test temperature: 15 ℃~35 ℃	/ L		
			•	Visual examination		
Duration of charge: 30 s Capacitance ≤±10% of initial measured				Capacitance		
Surge Duration of no load: 5 min 30 s $CApacital RCC$ value $CAPACIC RCC$	18	Surge	-	•		
Number of cycles: 1 000 tanδ ≤initial limit				tanδ	≤initial limit	
Protective resistor: 1 000 Ω I_L \leq initial limit			•	/ _L	≤initial limit	



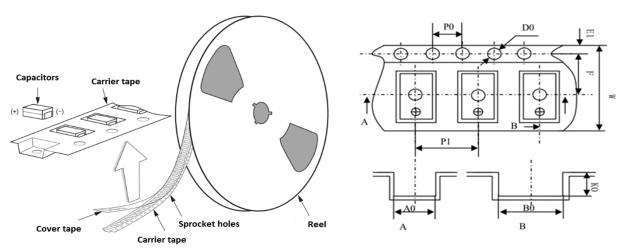
6. Marking



- a) Polarity indicator (Positive)
- b) Nominal capacitance
- c) Rated voltage
- d) Guoguang ID (G)
- e) Polarity indicator (Negative)

7. Tape & Reel Packaging

Packaging Diagram:



Case Size		Tape Dimensions (mm)				
Code	L×W1×H	P0	P1	A0	В0	W
		±0.10	±0.10	±0.20	±0.20	±0.20
	(mm)	4	8	4.6	7.6	12
V	7.3×4.3×1.9	K0	E1	F	D0	
		±0.10	±0.10	±0.10	+0.10/ _{-0.00}	
		2.3	1.75	5.5	1.5	·

Packing Quantity:

Reel size	180mm	330mm		
Reel Size	(7")	(13")		
Quantity (pcs)	1,200	4,200		





8. Application Guidelines

To ensure the stable quality of the capacitor, and make full use of its capability, please read following guidelines before use:

8.1 Polarity

PA-Cap polymer aluminum electrolytic capacitors have polarity. Polarity must be identified before use. If the polarity is reversed, the leakage current of this capacitor will increase rapidly, even more it will make the circuit short.

8.2 Voltage

The application of over-voltage will increase the leakage current, so that the capacitor will be damaged because of the rise of its interior temperature. The sum of DC voltage and ripple voltage should not exceed the rated voltage.

8.3 Temperature

The capacitor must be used in or under the rated temperature. Operation at temperatures exceeding specifications will cause large changes in electrical properties. The potential deterioration will also lead to the failure of the capacitor. When thinking about the operating temperature of the capacitor, be sure to include not only the ambient temperature but also interior heat coming from the components.

8.4 Ripple current

Use the capacitor in permitted ripple current. When excessive ripple current is applied to the capacitor, it will cause the increasement of leakage current, short circuits and decreasing in life.

8.5 Storage of capacitor

Capacitors should be stored in a moisture proof and without direct sunlight environment. The prefer temperature is 5 $^{\circ}$ C ~30 $^{\circ}$ C, relative humidity is lower than 60% RH.

Moisture Sensitivity Level: Level 3.

To maintain good mounting capability, please keep the capacitors in the state as delivered. Products should be all used within the storage term after opening the package. Please put the remaining products back into the packaging bag and seal the unsealed part with adhesive tape.

Storage term of the products: 24 months after manufactured (before opening the package), 7 days after opening. After the storage limit, drying treatment is necessary, condition: 50 $^{\circ}$ C ±2 $^{\circ}$ C, 100 h to 200 h.

8.6 Capacitor measurement

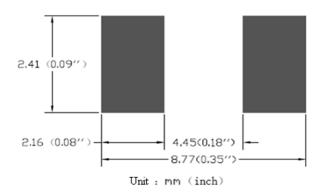
Excessive impact current resulted from charge and discharge hastily will cause the increasement of leakage current, even short circuit. Therefore the capacitor should be serially attached to a 1 k Ω protective resistor, and the applied voltage should be gradually increased to be equal to the rated voltage during the leakage current measurement. Before measuring other parameters, 1 K Ω resistor should be connected in series to make the capacitor discharge fully.



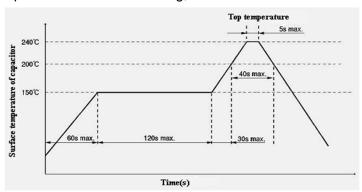


8.7 Capacitor mounting

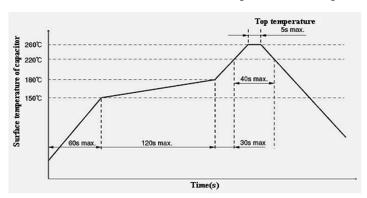
Recommended land-pattern:



PA-Cap is suit to re-flow soldering, recommended curve for soldering is as following.



Recommended curve for lead free soldering is as following.



When using the electric iron, the electric soldering bit should not touch the case. Make sure that the soldering temperature is no more than 350 $^{\circ}$ C and the time is shorter than 3 seconds.

Before mounting, please confirm whether the lead size is suit to the designed dimensions of the circuit board. Do not distort and apply strong force to the capacitor during mounting, otherwise the electrical performance of the capacitor will be affected greatly, even damaged. After it is soldered on PCB board, do not remove it with strong force.

In addition, re-flow soldering should be no more than two times.





- 8.8 Capacitors cannot be used in the following environments:
 - a) Contact directly with water, salt water or oil.
 - b) Full of deleterious chemically active gases.
 - c) Exposed to direct sunlight.

9. HSF Compliance Declaration

This product conforms to the ROHS 2011 / 65 / EU standard and the IEC 61249-2-21:2003 standard .