


## 1. 適用範圍 / SCOPE

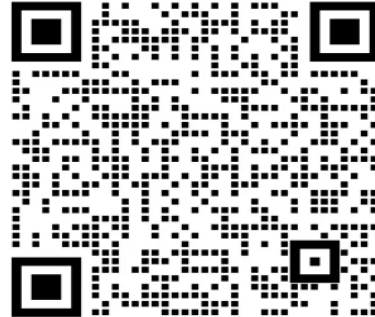
此份規格書僅涵蓋1206T系列產品。

This specification covers 1206T series devices, which is SMD Fuse.

## 2. 產品名稱及編碼 / TYPE NUMBER & PART NUMBER

### 2-1 產品名稱/ TYPE NUMBER

1206T	****A	***V	
(1)	(2)	(3)	(4)



( 1 ) 系列號: 1206T (尺寸: 0.12×0.06; 熔斷特性:慢斷 )

Series Number: 1206T (Size: 0.12×0.06; Melting characteristic: Slow-Blow)

( 2 ) 額定電流: (例如:3.5A=3.5 安培)

Rating Current : (Ex. :3.5A = 3.5 Ampere)

( 3 ) 額定電壓: (例如:63V=63 伏特 )

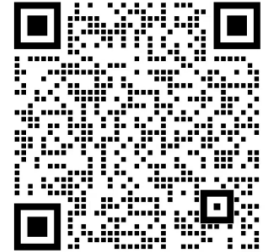
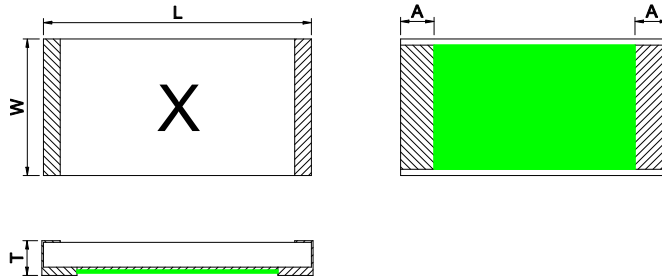
Rating Voltage : (Ex. :63V = 63 Volt)

( 4 ) 安規認證 / Safety Approval

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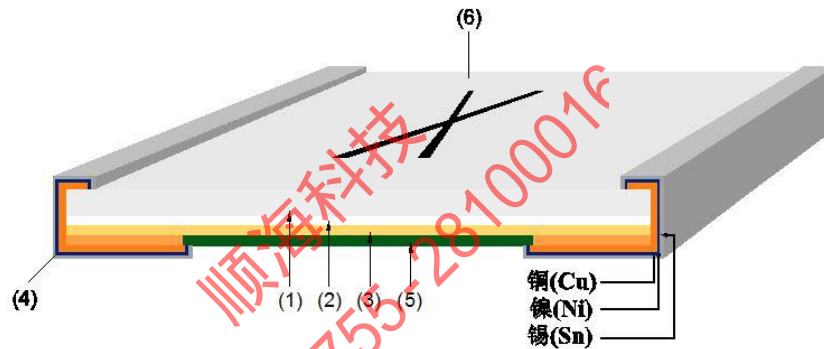
### 3. 產品尺寸和結構 / SIZE AND STRUCTURE

#### 3-1 尺寸 (單位: mm) / SIZE (Unit: mm)



型號 / Type number	W	L	T	A
1206T****A***V	1.60±0.25	3.20±0.25	0.60±0.15	0.58±0.20


#### 3-2 產品結構及使用材料說明 / STRUCTURE & MATERIAL



編號 No.	元件 Component	材質 Material	數量 Quantity
(1)	基板 Substrate	氧化鋁陶瓷 Alumina Ceramic	1
(2)	粘著層 Adhesion layer	環氧樹脂 Epoxy	1
(3)	熔絲本體 Fuse element	銅合金/錫 Cu Alloy / Sn	1
(4)	端電極 Terminal electrode	銅/鎳/錫 Cu / Ni / Sn	2
(5)	保護防焊層 Protective coating	防火級環氧樹脂 Flame-retardant epoxy	1
(6)	文印防焊層 Marking coating	防火級環氧樹脂 Flame-retardant epoxy	1

### 4. 基本資訊/ ORDERING INFORMATION

● approved ○ pending

型號 Type Number	標示 Marking	額定電流 Rated Current	額定電壓 Rated Voltage	阻值 Nominal Resistance	I <sup>2</sup> t Nominal Melting I <sup>2</sup> t	安規認證 Safety Approval
		(ADC)	(VDC)	(Ω)	(A <sup>2</sup> s)	
1206T 1A 63V	P	1.0	63	0.2200	0.259	●
1206T 1.25A 63V	Q	1.25	63	0.1550	0.405	●
1206T 1.5A 63V	Q1	1.5	63	0.1100	0.583	●
1206T 2A 63V	S	2.0	63	0.0620	1.036	●
1206T 2.5A 63V	T	2.5	63	0.0305	1.619	●
1206T 3A 63V	T1	3.0	63	0.0250	2.332	●
1206T 3.5A 63V	U1	3.5	63	0.0180	3.174	●
1206T 4A 63V	V	4.0	63	0.0155	4.145	●
1206T 5A 63V	W	5.0	63	0.0110	6.477	●
1206T 6A 63V	W1	6.0	63	0.0128	9.327	●
1206T 6.3A 63V	X	6.3	63	0.0095	10.283	●
1206T 7A 63V	X1	7.0	63	0.0085	12.696	●
1206T 8A 63V	Y	8.0	63	0.0075	16.582	●
1206T 10A 63V	Z	10.0	63	0.0057	25.909	●

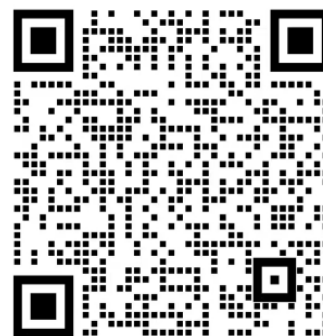
說明/Notes :

a. “一般電阻值” 是在通以小於額定電流的 10%的弱電流條件下量測的阻抗.

Nominal Resistance measured with <10% rated current ;

b. “一般 I<sup>2</sup>t ” 的是指自通電至作動時間為 10ms 的過程所對應的 I<sup>2</sup>t.

Nominal Melting I<sup>2</sup>t measured at 10 m sec opening time ;

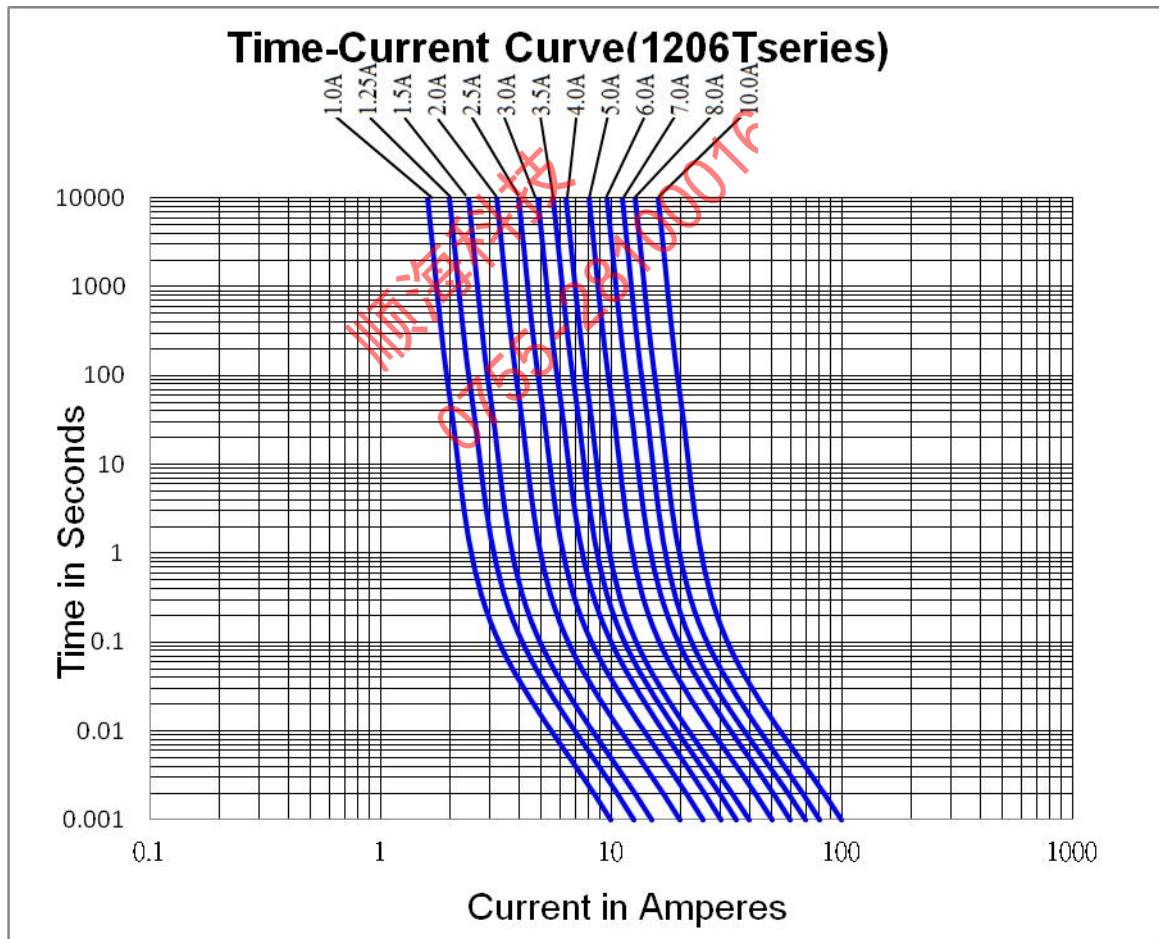


**5. 電氣特性 / ELECTRICAL CHARACTERISTICS**
**5-1 時間-電流特性 / Pre-Arcing Time-Current Characteristics ( limits )**

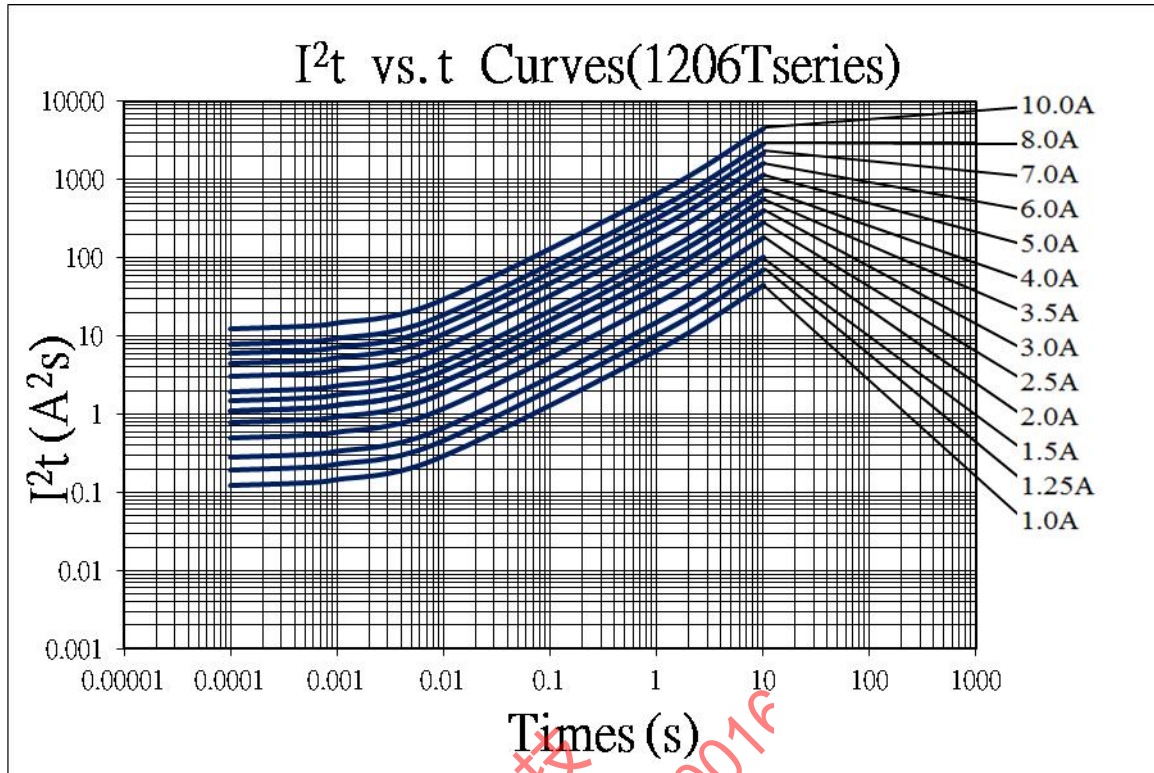
額定電流 RATED CURRENT	1.0In	2.0In	3.0In	8.0In	10.0In
1A to 10A	4hrs min.	1sec min ; 120sec max.	0.1sec min ; 3sec max.	2ms min ; 50ms max.	0.2ms min ; 20ms max.

In : 25°C 下額定電流 / Rating Current at 25°C

時間-電流特性曲線 / Time-Current Curve:

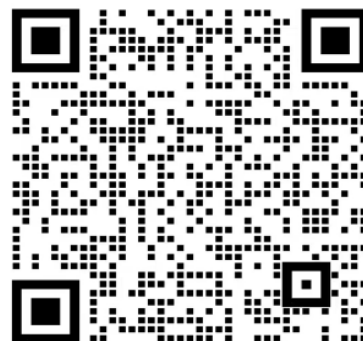


5-2 I<sup>2</sup>t-t 曲線/ I<sup>2</sup>t-t Curve:



5-3 分斷能力 / Breaking Capacity

額定電流 RATED CURRENT	分斷能力 BREAKING CAPACITY
1A ~10A	V =63V DC ; I=50A



**6. 產品特性及信賴性測試規範/PRODUCT CHARACTERISTICS AND RELIABILITY TEST STANDARD**

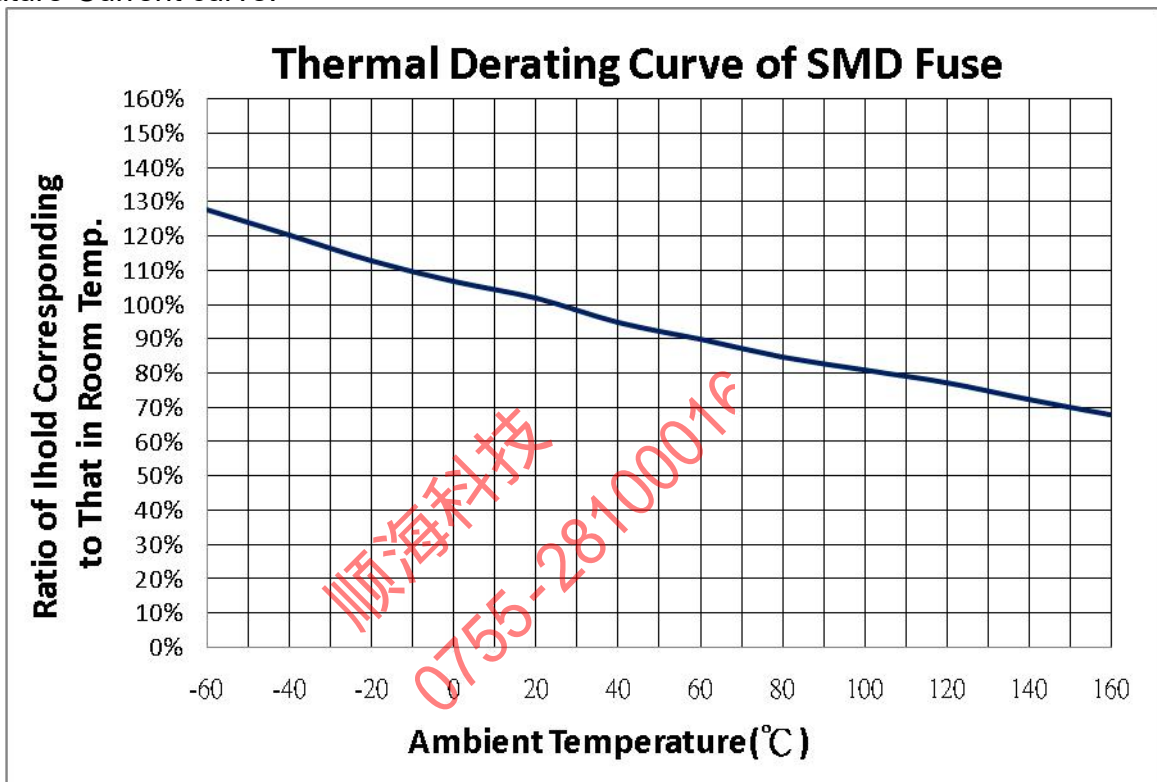
序號 No.	項目 Item	內容 Content	判定標準 Criteria
1	時間/電流特性 Time/current characteristics	分別通以1.0In、2.0In、3.0In、8.0In、10.0In電流，得出相對應的時間 I=1.0In ; 2.0In ; 3.0 In ; 8.0 In ; 10.0 In and measure the value of time individually by meter ,	各電流條件下的時間參數符合規定值 Value of time measured in different currents is within spec. UL248-1/-14
2	分斷能力測試 Breaking capacity	V = 63V/DC ; I=50A	沒有持續電弧、燃燒、爆炸現象 No a permanent arcing, ignition, bursting UL248-1/-14
3	可焊性 Solder ability	熔錫溫度245°C±5°C，浸錫時間5s±0.5s，浸入深度從基座面起2.0mm±0.5mm，放在20X的放大鏡下檢查T=245°C±5°C，t=5s±0.5s，magnifier : 20X	錫覆蓋率≥95% Cover ≥ 95% MIL-STD-202 Method 208
4	抗焊性測試 Soldering heat resistance	熔錫溫度/ T =250°C±5°C, 浸錫時間 / t =30±5s T=250±5°C, t=30±5s	外觀無裂紋和損傷，前後阻值偏差小於或等於±15%；文印清晰可辨 No crack and damage, ΔR<15% Marking is easily legible MIL-STD-202, Method 210F, Condition K
5	冷熱衝擊 Thermal Shock	-65°C, 放置時間為15min, → 25°C, , 放置時間為5min → 125°C 放置時間15min 循環次數為100個 -65°C 15min~25°C 5min~ +125°C 15min ; 100 cycles	外觀無裂紋和損傷，前後阻值偏差<±10% No crack and damage, ΔR<10% MIL-STD-202, Method 107G condition B-3
6	機械衝擊 Mechanical Shock	峰值100 G, 持續時間11ms, 波形: 半正弦, 五次脈衝 a=100G for 11ms, 5pulses	外觀無裂紋和損傷，前後阻值偏差<±10%。 No crack and damage, ΔR<10% MIL-STD-202, Method 213B
7	振動測試 Vibration	承受振幅為0.03 英寸(全程最大0.06英寸), 頻率在大約10Hz到55Hz 的範圍均勻地變化的簡諧運動.)	MIL-STD-202, Method 201A
8	高頻振動測試 Vibration, High Frequency	20g's峰值, 公差值為±10%, 振動頻率10Hz-2000Hz, 總計時間為12h	MIL-STD-202, Method 204D, Condition D

**7. 環境特性 / ENVIRONMENTAL CHARACTERISTIC**
**7-1 操作溫度範圍: -55°C ~ 150°C / Operating Temperature: -55°C ~ 150°C**

若貴司操作環境溫度超出 $25\pm 5^\circ\text{C}$ 範圍，在選用保險絲規格時，需考慮操作環境溫度對保險絲的影響。請參照：溫度-電流曲線圖。

When choosing the fuse's specification, if the operating environmental temperature beyond the scope from  $20\sim 30^\circ\text{C}$ , you should consider the environmental temperature's affection to fuses. please refer:

Temperature-Current curve:

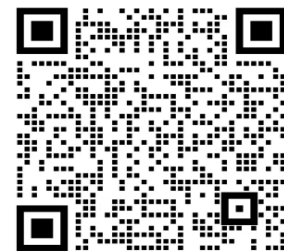

**7-2 存儲條件 / Storage Conditions**

在溫度 $10^\circ\text{C}\sim 40^\circ\text{C}$ 、相對濕度 $\leq 75\%$ 的密閉條件下可存放2年。

Under airtight in temperature  $10^\circ\text{C}\sim 40^\circ\text{C}$ 、relative humidity  $\leq 75\%$  can store 2 years.

在溫度 $10^\circ\text{C}\sim 40^\circ\text{C}$ 、相對濕度為95%的非露天下最多可存放30天。

Without dew in temperature  $10^\circ\text{C}\sim 40^\circ\text{C}$ 、relative humidity be 95% maximum value for 30days.

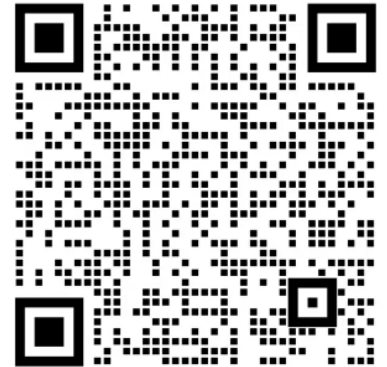
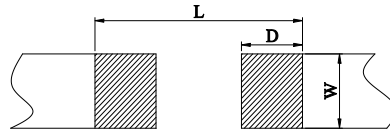


8. 焊墊尺寸及焊接條件 / SOLDER PAD SIZE AND WELDING CONDITIONS

8-1 焊墊尺寸建議 / Recommended Size of the Pad.

L	W	D	t
4.05mm	2.40mm	1.25mm	$\geq 35\mu\text{m}$

t : 元件焊墊金屬層厚度 (min.) / t : Thickness of pad metal (min.)



8-2 焊接參數建議 / Recommended Customer Soldering Parameters

溫度曲線 Temperature Condition

預熱段 :  $145 \pm 15^\circ\text{C}$ , max. 120 sec.

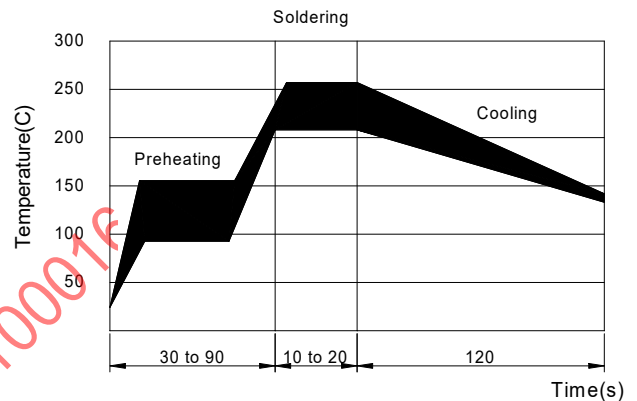
Preheating :  $145 \pm 15^\circ\text{C}$ , max. 120 sec.

焊錫段 : min.  $220^\circ\text{C}$ , max. 60 sec.

Soldering: min.  $220^\circ\text{C}$ , max. 60 sec.

允許最高溫度 :  $260 \pm 5^\circ\text{C}$ , max. 10sec.

Maximum temperature :  $260 \pm 5^\circ\text{C}$ , max. 10sec.



允許烙鐵焊接條件(熱風設備):  $350^\circ\text{C}$ , 3~5seconds

Rework Temperature (hot air equipment):  $350^\circ\text{C}$ , 3~5seconds

8-3 焊接方法建議 / Recommended Reflow Methods

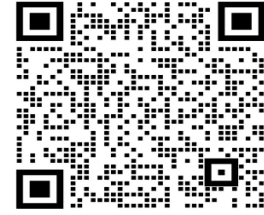
焊接熱源方式可用紅外線, 熱蒸氣, 熱風

IR, vapor phase oven, hot air oven.

如果焊錫溫度超過允許最高溫度, 則產品本身會有功能損壞的疑慮

If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.



**9. 批量生產出貨測試項目 / LOT ACCEPTANCE TEST REQUIREMENTS****9-1 外觀 / Visual**

方法：利用放大鏡進行檢查

Procedure: Visual

標準：不能有髒汙、不潔、文印錯誤、破損等

Acceptance Criteria: No parts are outstandingly stained.

**9-2 尺寸 / Dimensions**

方法：使用合適且經校正的尺規

Procedure: As appropriate, calipers, micrometers, optical comparator, or approved gages.

標準：尺寸均在規定標準範圍內

Acceptance Criteria: No parts outside specific dimensions.

**9-3 時間-電流特性 / Time-Current Characteristics**方法：測試電流 $I=1.0I_n$  ;  $2.0I_n$  ;  $3.0I_n$  ;  $8.0I_n$  ;  $10.0I_n$ ,量測出個別電流下的對應時間Procedure :  $I=1.0I_n$  ;  $2.0I_n$  ;  $3.0I_n$  ;  $8.0I_n$  ;  $10.0I_n$  and measure the value of time individually by meter at  $25^{\circ}\text{C}$ 

標準：對應時間值均在規定標準範圍內

Acceptance Criteria: All parts must within the specific .

**9-4 分斷能力 / Breaking Capacity**方法：測試電壓\電流為 $V = 63\text{V}/\text{DC}$  ;  $I=50\text{A}$ , 利用此條件衝擊元件Procedure:  $V = 63\text{VDC}$  ;  $I=50\text{A}$ 

標準：元件不發生持續電弧燃燒及爆裂

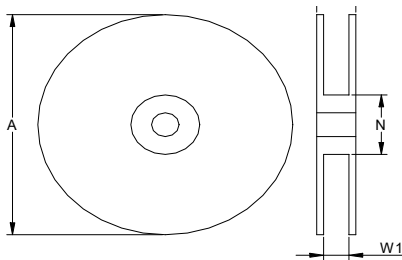
Acceptance Criteria: No permanent arcing, ignition, bursting

**10. 安全認證及編號 / STANDARDS AND APPROVALS**

UL	E56092
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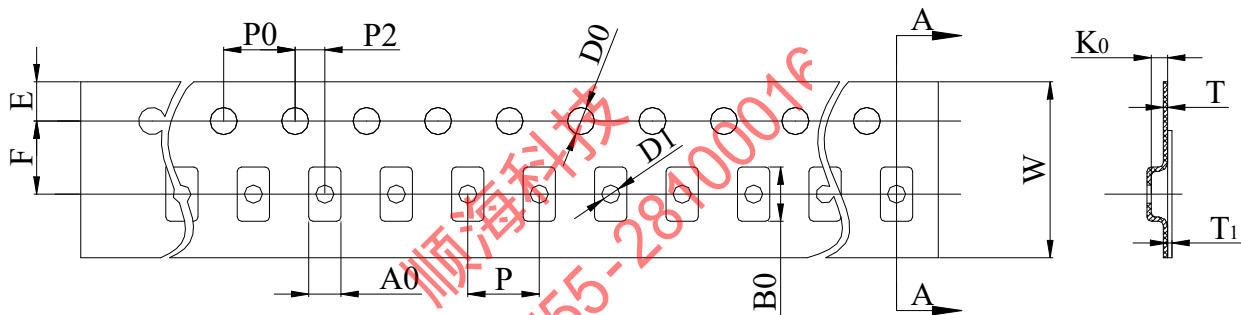
**11. 包裝訊息 / PACKING INFORMATION**
**11-1 包裝數量、重量 / QUANTITY & WEIGHT**

編碼 Part Number	數量 (pcs) Quantity(pcs)	重量(g) Weight(g)
1206T****A***V	5,000	140±20


**11-2 捲輪規格 / Reel & Tape specifications**


Unit(mm)

A ± 5	N ± 2	W1 +1/-0
178	60	8.4



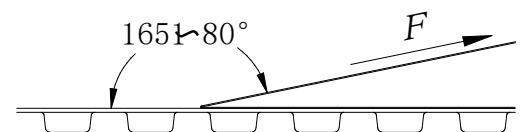
單位(mm)

<b>W</b>	<b>8.00±0.10</b>	<b>E</b>	<b>1.75 ± 0.10</b>
<b>P0</b>	<b>4.00 ± 0.10</b>	<b>T</b>	<b>0.20±0.05</b>
<b>P</b>	<b>4.00 ± 0.10</b>	<b>T1</b>	<b>Max. 0.1</b>
<b>P2</b>	<b>2.00 ± 0.10</b>	<b>A0</b>	<b>2.05±0.10</b>
<b>D0</b>	<b>1.50 ± 0.10</b>	<b>B0</b>	<b>3.65±0.10</b>
<b>D1</b>	<b>1.00 ± 0.10</b>	<b>K0</b>	<b>0.85±0.10</b>
<b>F</b>	<b>3.50±0.10</b>		

**11-3 密封膠膜剝離強度要求 / Peeling Strength of Seal Tape**

F = 剝離強度 : 0.3 – 1.0N ( 30 - 100gf )

F = Peeling Strength: 0.3 – 1.0N (30 - 100gf)



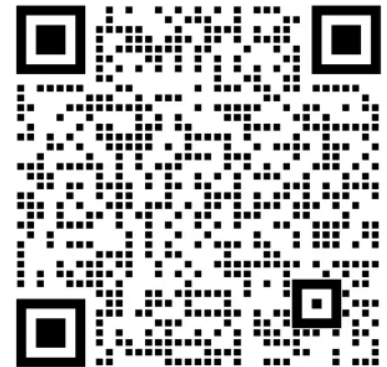
**12. 其他 / OTHERS**

12-1 如果在使用中有超出本規格書的要求，必須經由雙方協商確認。

In the event that an impropriety is found beyond this specification ,it shall be fixed by mutual agreement between the parties.

12-2如果本規格書有不適當的情況，必須通過雙方協商並由本公司修改。

In the event that an impropriety is found in this specification , Walter Electronic Technology Co., Ltd. shall amend it by mutual agreement between the parties.



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版次	製作	確認	審核
第1.7版	蔡小梅 2021/12/21	陈鹏安 2021/12/21	陈荣 2021/12/21



# UL iQ for Fuses



## Fuses

E56092

### Guide Information

## SUZHOU WALTER ELECTRONIC CO LTD

Fenhu Technic Development Zone, Wujiang Jiangsu 215211 CN

### F92, 1206T

Supplemental micro fuses

<u>Size</u> <u>mm(in)</u>	<u>Amps</u> <u>(A)</u>	<u>Volts</u> <u>(V)</u>	<u>Interrupting</u> <u>Rating (A)</u>
3.2 x 1.6 (0.13 x 0.06)	0.8	63Vdc	50
	1	63Vdc	50
	1.25 - 1.75	63Vdc	50
	2 - 6	63Vdc	50
	6.3 - 10	63Vdc	50
	0.8	24Vdc	50
	0.8	32Vdc	50
	1	24Vdc	50
	1	32Vdc	50
	1.25 - 1.75	24Vdc	50
	1.25 - 1.75	32Vdc	50
	2 - 6	24Vdc	50
	2 - 6	32Vdc	50
	6.3 - 10	24Vdc	50
	6.3 - 10	32Vdc	50

Report Date: 2010-07-13

Last Revised: 2018-09-04

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