1. 適用範圍 / SCOPE

此份規格書僅涵蓋0603T系列產品.
This specification covers 0603T 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

0603T	****A	***V	
(1)	(2)	(3)	(4)

（1）系列號: 0603T (尺寸: 0.06×0.03; 熔斷特性:慢斷)
Series Number: 0603T (Size: 0.06×0.03; Melting characteristic: Slow-Blow)

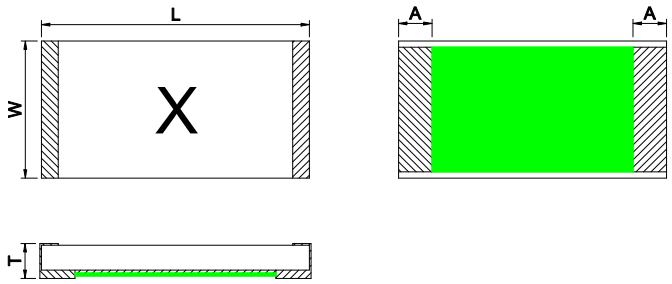
（2）額定電流: (例如:3.5A=3.5 安培)
Rating Current : (Ex. :3.5A = 3.5 Ampere)

（3）額定電壓: (例如:32V=32 伏特)
Rating Voltage : (Ex. :32V = 32 Volt)

（4）安規認證 / Safety Approval

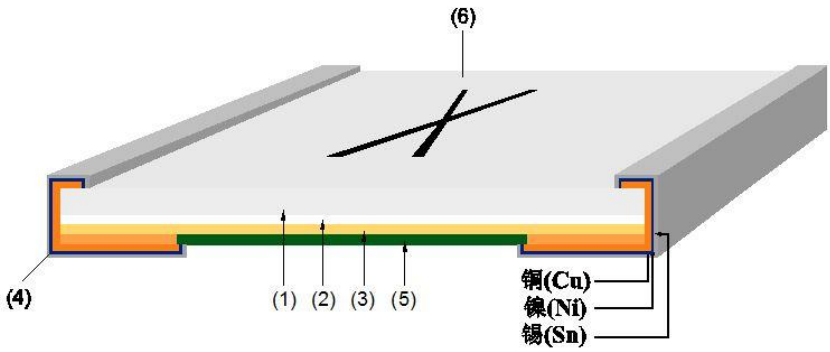
3. 產品尺寸和結構 / SIZE AND STRUCTURE

3-1 尺寸（單位: mm）/ SIZE (Unit: mm)



型號 / Type number	W	L	T	A
0603T****A***V	0.80±0.20	1.60±0.20	0.60±0.15	0.30±0.15

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^2t Nominal Melting I^2t	安規認證 Safety Approval	
		(ADC)	(VDC)	(Ω)	(A^2s)	cULus	
0603T 1A 32V	P	1	32	0.1536	0.200	●	
0603T 1.5A 32V	Q1	1.5	32	0.0848	0.450	●	
0603T 2A 32V	S	2	32	0.0456	0.800	●	
0603T 2.5A 32V	T	2.5	32	0.0312	1.250	●	
0603T 3A 32V	T1	3	32	0.0245	1.800	●	
0603T 3.5A 32V	U1	3.5	32	0.0179	2.450	●	
0603T 4A 32V	V	4	32	0.0150	3.200	●	
0603T 5A 32V	W	5	32	0.0109	5.000	●	●
0603T 6A 32V	W1	6	32	0.0080	7.200	●	

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^2t ” 的是指自通電至作動時間為 10ms 的過程所對應的 I^2t.

Nominal Melting I^2t measured at 10 m sec opening time ;

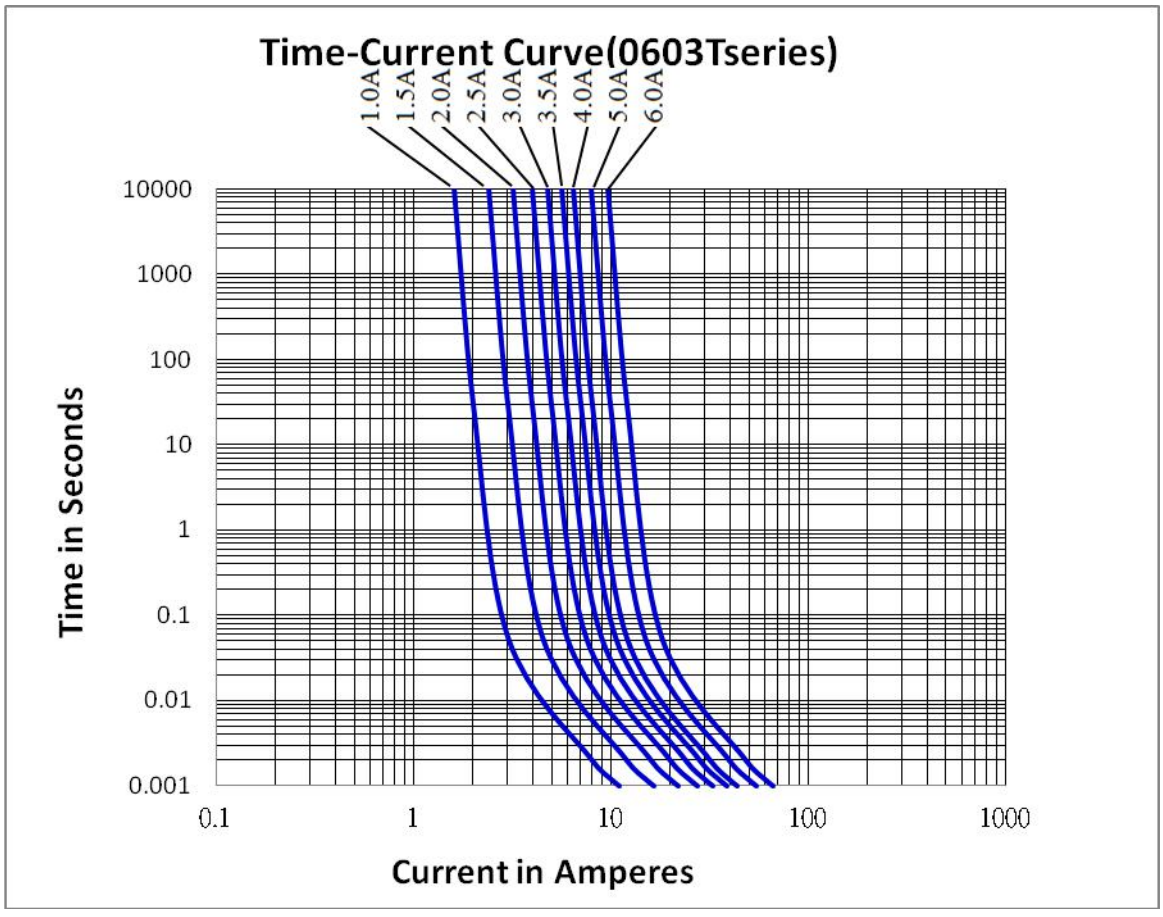
5. 電氣特性 / ELECTRICAL CHARACTERISTICS

5-1 時間-電流特性/ Pre-Arcing Time-Current Characteristics （limits）

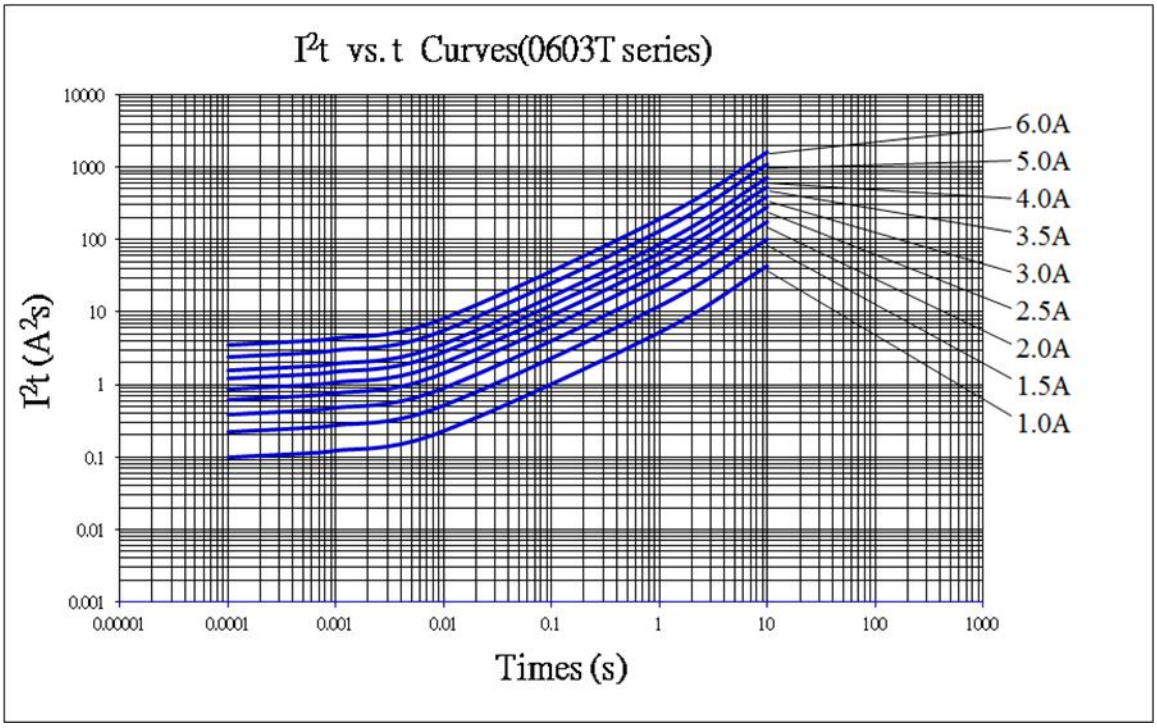
額定電流 RATED CURRENT	1.0In	2.0In	3.0In	8.0In
1A to 1. 5A	4hrs min.	120sec max.	3sec max.	0.5ms min ; 50ms max.
2A to 6A	4hrs min.	120sec max.	3sec max.	1ms min ; 50ms max.

In : 25℃下額定電流 / Rating Current at 25℃

時間-電流特性曲線 / Time-Current Curve:



5-2 I^2t-t 曲線/ I^2t-t Curve:



5-3 分斷能力 / Breaking Capacity

額定電流 RATED CURRENT	分斷能力 BREAKING CAPACITY
1A~6A	V =32V DC ; I=50A

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

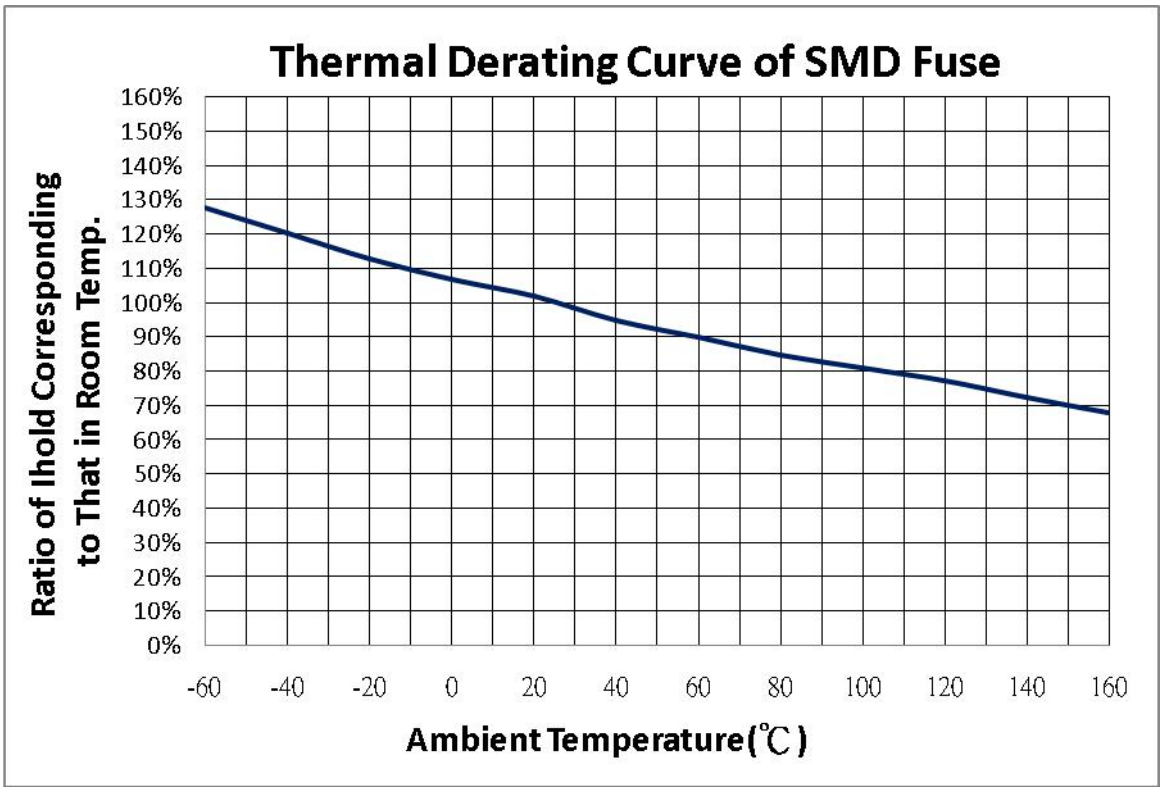
序號 No.	項目 Item	內容 Contain	判定標准 Criteria
1	時間/電流特性 Time/current characteristics	分別通以1.0In、2.0In、3.0In、8.0In電流，得出相對應的時間 I=1.0In ; 2.0In ;3.0 In ;8.0 In and measure the value of time individually by meter ,	各電流條件下的時間參數符合規定值 Value of time measured in different currents is within spec. UL248-1/-14
2	分斷能力測試 Breaking capacity	V = 32V/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℃±5℃，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℃±5℃, 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℃±5℃, 浸錫時間/ t =30±5s T=250±5℃, 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, △R<15% Marking is easily legible MIL-STD-202, Method 210F, Condition K
5	冷熱衝擊 Thermal Shock	-65℃,放置時間為15min,→ 25℃，,放置時間為5min→ 125℃放置時間15min 循環次數為100個 -65℃ 15min~25℃ 5min~ +125℃ 15min ; 100 cycles	外觀無裂紋和損傷，前後阻值偏差<±10% No crack and damage, △R<10% MIL-STD-202, Method 107G conditionB-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, △R<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℃～150℃ / Operating Temperature:-55℃～150℃

若貴司操作環境溫度超出25±5℃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 20~30℃, you should consider the environmental temperature's affection to fuses.
please refer:
Temperature-Current curve:



7-2 存儲條件 / Storage Conditions

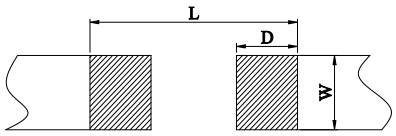
在溫度10℃~40℃、相對濕度≦75%的密閉條件下可存放2 年。
Under airtight in temperature10℃~40℃、relative humidity ≦75% can store 2 years.
在溫度10℃~40℃、相對濕度為95%的非露天下最多可存放30 天。
Without dew in temperature10℃~40℃、relative humidity be 95% maximum value for 30days.

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

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

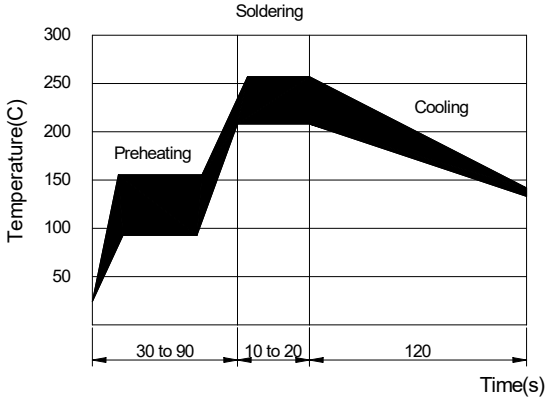
L	W	D	t
2.50mm	1.60mm	0.88mm	≧35μm

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 ± 15℃, max. 120 sec.
Preheating : 145 ± 15℃, max.120 sec.
焊錫段： min. 220℃, max. 60 sec.
Soldering: min. 220℃, max. 60 sec.
允許最高溫度 : 260±5℃, max. 10sec.
Maximum temperature : 260±5℃, max. 10sec.



允許烙鐵焊接條件(熱風設備)：350℃, 3~5seconds
Rework Temperature （hot air equipment）: 350℃,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=1.0In ; 2.0In ; 3.0In ; 8.0In ,量測出個別電流下的對應時間
Procedure : I=1.0In ; 2.0In ; 3.0In ; 8.0In and measure the value of time individually by meter at 25℃
標準：對應時間值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 = 32V/DC ; I=50A, 利用此條件衝擊元件
Procedure: V = 32VDC ; I=50A
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

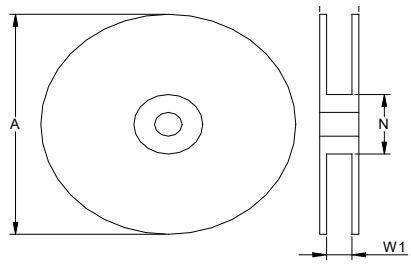
UL	E56092
TUV	R5047651

11. 包裝訊息 / PACKING INFORMATION

11-1 包裝數量、重量 / QUANTITY & WEIGHT

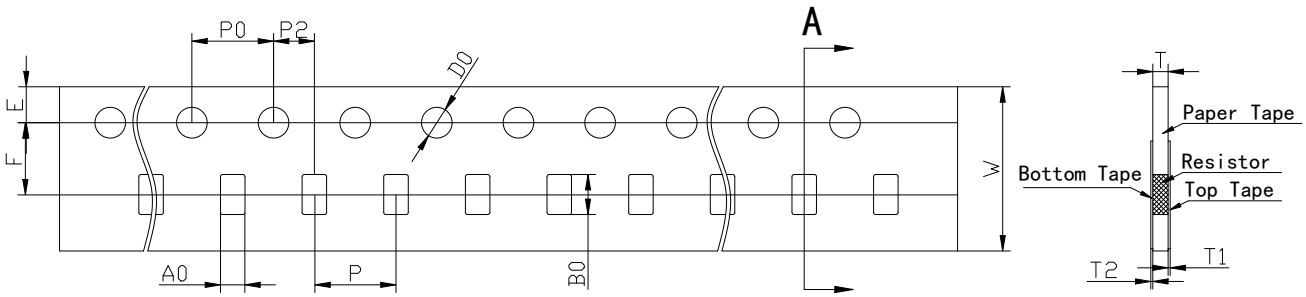
編碼 Part Number	數量 (pcs) Quantity(pcs)	重量（g） Weight（g）
0603T**A***V**	**5,000**	**140±20**

11-2 捲輪規格 / Reel & Tape specifications



Unit(mm)

A ± 5	N ± 2	W1 +1/-0
178	60	8.4

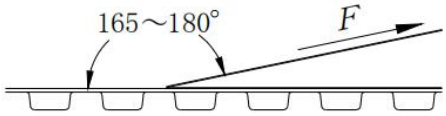


單位(mm)

W	8.00 ± 0.30	D0	1.50 ± 0.10
P0	4.00 ± 0.10	F	3.50 ± 0.10
P	4.00 ± 0.10	E	1.75 ± 0.10
P2	2.00 ± 0.10	T	0.80 ± 0.10
A0	1.20± 0.15	T1	max.01
B0	1.95± 0.15	T2	max.01

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 , Suzhou Walter Electronic Co., Ltd. shall amend it by mutual agreement between the parties.

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

J92, 0603T

Supplemental micro fuses

Size mm(in)	Amps (A)	Volts (V)	Interrupting Rating (A)
1.6 x 0.8 x 0.6 (0.06 x 0.03 x 0.02)	1	32Vdc	50
	1.25 - 1.6	32Vdc	50
	1.75	32Vdc	50
	2 - 2.5	32Vdc	50
	3 - 3.5	32Vdc	50
	4 - 6	32Vdc	50
	1	24Vdc	50
	1.25 - 1.6	24Vdc	50
	1.75	24Vdc	50
	2 - 2.5	24Vdc	50
	3 - 3.5	24Vdc	50
	4 - 6	24Vdc	50

Report Date: 2013-11-08
Last Revised: 2018-09-04

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Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*
R 50474651

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0001

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Ausstellungsdatum** *Date of Issue*
	05-YFC-60394562 001	06.08.2020 *(day/mo/yr)*

Genehmigungsinhaber *License Holder*
Suzhou Walter Electronic Co., Ltd.
Fenhu Technic Development Zone, Luxu
Wujiang City
Jiangsu
P.R. China

Fertigungsstätte *Manufacturing Plant*
Jiangmen Juneway Electronic Technology Co., Ltd.
New Fortune Environment Electroplating Base, Second Phase,
Yamen, Xinhui District,Jiangmen City
Guangdong
P.R. China

Prüfzeichen *Test Mark*

TÜVRheinland CERTIFIED
Type Approved
Safety
Regular Production Surveillance
www.tuv.com
ID 1111226699

Geprüft nach *Tested acc. to*
EN 60127-1:2006+A1+A2
EN 60127-7:2016

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Fuse Link (Miniature fuse-links)

Type Designation	: 0603T J92	5
Trademark	: Walter(Logo)	
Rated Voltage	: DC 32V	
Rated Current	: 5A	
T/I Characteristic	: see appendix 1	
Dimension	: 1.6mmx0.8mm, without pigtail	
Rated Breaking Capacity	: 50A	

Remark : The labelling requirements acc. to EU Directive 2001/95 have to be observed for distribution within the EEA.
The installation has to be carried out according to installation instruction accompanying the products.

5

ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

Zertifizierungsstelle
G. Yin

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
Tel.: +49 221 806-1371 e-mail: cert-validity@de.tuv.com
Fax: +49 221 806-3935 http://www.tuv.com/safety

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Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*
R 50474651

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0002

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Ausstellungsdatum** *Date of Issue*
	05-YFC-60394562 002	21.08.2020 *(day/mo/yr)*

Genehmigungsinhaber *License Holder*
Suzhou Walter Electronic Co., Ltd.
Fenhu Technic Development Zone, Luxu
Wujiang City
Jiangsu
P.R. China

Fertigungsstätte *Manufacturing Plant*
Jiangmen Juneway Electronic
Technology Co., Ltd.
New Fortune Environment
Electroplating Base, Second Phase,
Yamen, Xinhui District,Jiangmen City
Guangdong
P.R. China

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Geprüft nach *Tested acc. to*
EN 60127-1:2006+A1+A2
EN 60127-7:2016
IEC 60127-1:2006+A1+A2
IEC 60127-7:2015

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Fuse Link (Miniature fuse-links)

as page 0001

Addition

Test requirement : see above

Remark : The labelling requirements acc. to EU Directive 2001/95 have to be observed for distribution within the EEA. The installation has to be carried out according to installation instruction accompanying the products.

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TÜV Rheinland LGA Products GmbH Zertifizierungsstelle TÜVRheinland® Zertifizierstelle

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
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Fax: +49 221 806-3935 http://www.tuv.com/safety

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