


### 1. 適用範圍 / SCOPE

2410F 系列快斷型保險絲，適用於一般電子設備。  
2410F series Inrush Fuse, used in electronic equipment.

### 2. 產品編碼 / Part Numbering

例「example」：

2410F	1A	250V	
①	②	③	④

- ① 系列號/Series Number
- ② 額定電流/Rated Current
- ③ 額定電壓/Rated Voltage
- ④ 認證符號/Approved Symbol

### 3. 額定電流和額定電壓/ RATED CURRENT AND RATED VOLTAGE

額定電流 / Rated Current:

0.5A~5.0A

額定電壓 / Rated Voltage:

0.5A~5.0A : 250 V ac / 125 V dc

### 4. 標示 / MARKING

保險絲上需有下列標示/The fuses shall have the following marking

- ① 產品系列標識 / Series type Logo : SM2
- ② 額定電流 / Rated Current (A):\_\_A

注意 / Note :

對標示的大小和位置沒有規定 / Size and position of the markings shall not be provided.

### 5. 外觀及形狀 / APPEARANCES AND CONFIGURATION

5-1 外觀：無顯著的汙點、鐵銹或裂紋；標示應容易辨識。

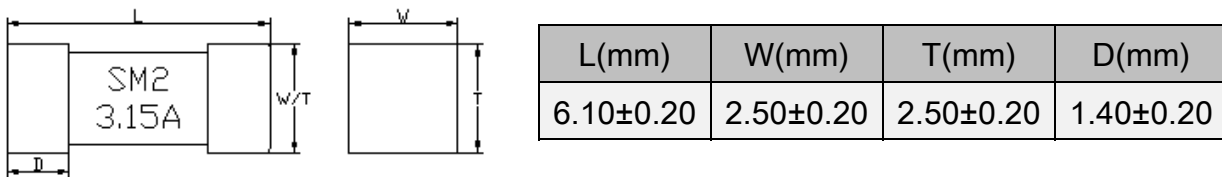
Appearances : There shall not be any remarkable stain, rust or crack on the appearances; marking shall be easily legible.

5-2 形狀：表面貼裝式保險絲

Configuration : Surface Mount Fuse.

### 6. 工程圖和結構 / OUTLINE DRAWING AND STRUCTURE

6-1 工程圖（單位元：mm） / Outline Drawing and Dimensions (Unit: mm)



6-2 結構 / Structure

元件 Component	材質 Material	數量 Quantity
銅帽 Cap	黃銅鍍金 Brass with gold plated	2
本體 Body	陶瓷管 Ceramic tube	1

### 7. 產品特性 / PRODUCT CHARACTERISTICS

編號 No.	項目 Item	內容 Content	參考標準 Reference standard
1	絕緣阻抗 Insulation resistance	10,000 ohms minimum	MIL-STD-202G, Method 302 Test Condition A
2	可焊性 Solderability	T=240°C±5°C, t=3+0/-0.5s, Cover ≥ 95%	MIL-STD-202G, Method 208H
3	耐焊接熱 Soldering heat resistance	10 sec at 260 °C  ΔR : <10%	MIL-STD-202G, Method 210F Test Condition B
4	熱衝擊 Thermal Shock	100 cycles between -65°C/+125°C 60 minutes ; each extreme  ΔR : <10%	IEC 60068-2-14
5	高/低溫儲存 High/Low Temperature Storage	T=125°C±2°C , 96hours , T=-55°C±3°C , 96hours  ΔR : <10%	IEC60068-2-1 / IEC60068-2-2
6	高溫操作 High Temperature Operating Life	T=70°C±2°C , 0.6In , 96hours  ΔR : <10%	MIL-STD-202 Method 108
7	耐濕性 Humidity(steady state)	T=40°C±2°C , 90%~95%RH , 1000hours  ΔR : <10%	MIL-STD-202 Method 103
8	鹽霧實驗 Salt spray	5% salt solution , 48hours  ΔR : <10%	MIL-STD-202G, Method 101E, Test Condition B

### 8. 電氣特性 / ELECTRICAL CHARACTERISTICS

#### 8-1 熔斷 / 電流特性：Pre-Arcing Time / Current Characteristic (limits)

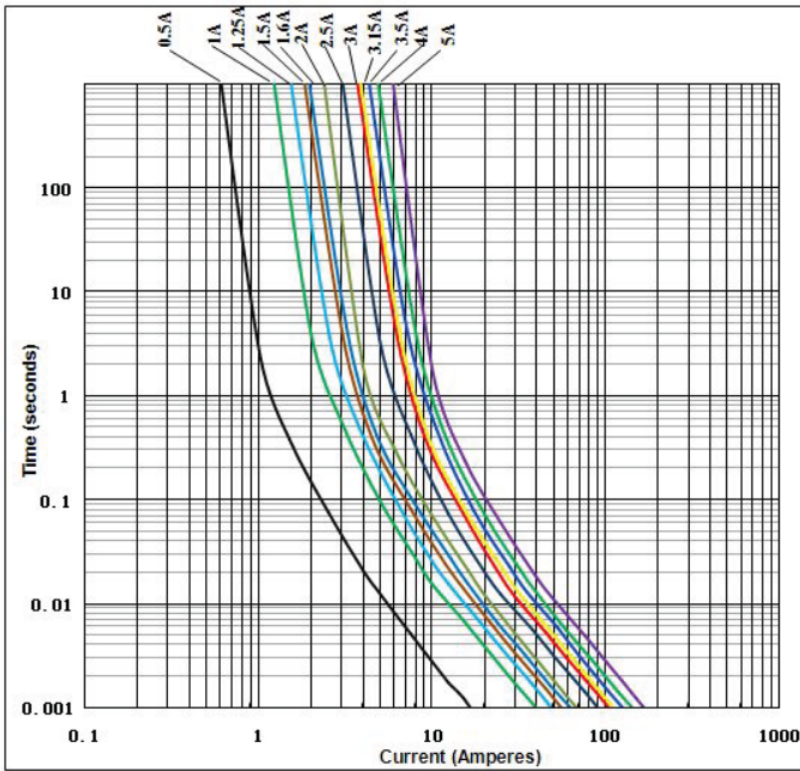
RATED CURRENT	1 In	2 In	10 In
	Min.	Max.	Min.
0.5A~5.0A	4hrs	120 s	10ms

#### 8-2 產品規格/Specification

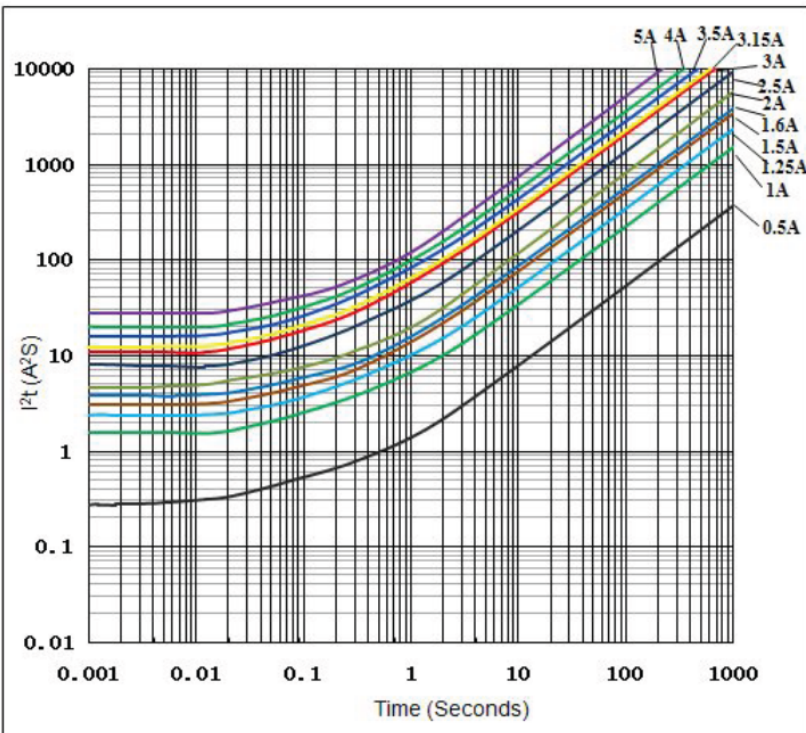
額定電流 Rated Current	額定電壓 Rated Voltage	分斷能力 Breaking Capacity	Typical Cold DCR (mΩ)	Normal I <sup>2</sup> T** (A <sup>2</sup> s)
0.5 A	250Vac	UL / TUV: 35A@250V AC 50A@125V DC  UL / TUV: 50A@250V AC 50A@125V DC PSE: 50A@125V AC	270	0.285
1.0 A	250Vac		127	1.58
1.25 A	250Vac		98	2.48
1.5 A	250Vac		83	3.13
1.6 A	250Vac		72	4.03
2.0 A	250Vac		62	4.89
2.5 A	250Vac		42	7.62
3.0 A	250Vac		30	10.73
3.15 A	250Vac		27	12.52
3.5 A	250Vac		25	16.31
4.0 A	250Vac		21	20.35
5.0 A	250Vac		17	27.88

\*\* Melting I<sup>2</sup>T at 10 times of rated current

8-3 I-t 圖/CHARACTERISTICS DIAGRAM(I-t)



8-4  $I^2t-t$  圖/CHARACTERISTICS DIAGRAM( $I^2t-t$ )



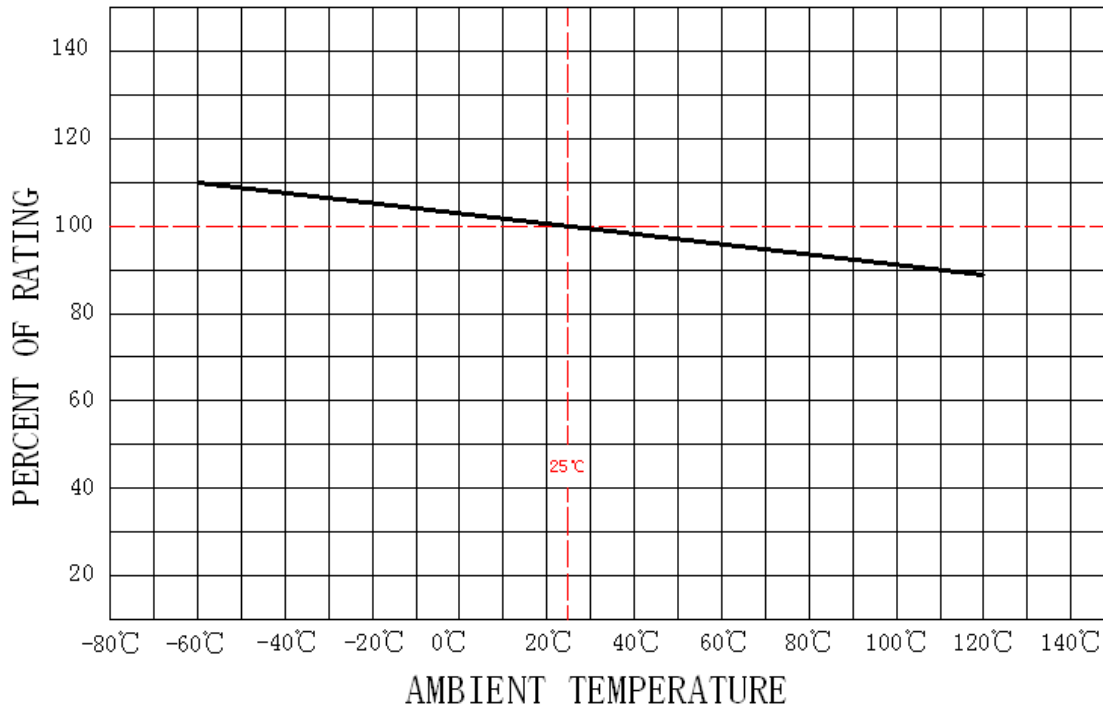
### 9. 環境特性 / ENVIRONMENTAL CHARACTERISTIC

操作溫度範圍:  $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$  / Operating Temperature:  $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$

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:

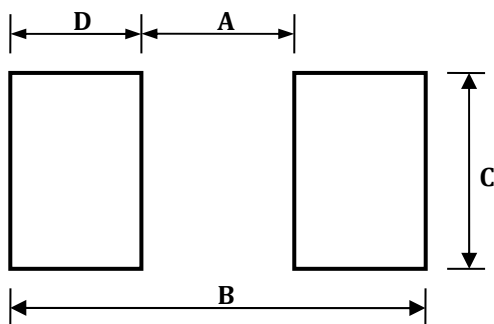
Temperature-Current curve:



### 10. 安裝方式及條件 / INSTALLATION WAY AND PARAMETERS

10-1 建議如下圖安裝方式安裝，並滿足所要求的尺寸。

Propose that the following picture installation way is installed, and satisfied the required size.



Dimensions	A(mm)	B(mm)	C(mm)	D(mm)
2410F	$3.00 \pm 0.30$	$8.00 \pm 0.30$	$3.00 \pm 0.30$	$2.50 \pm 0.30$

### 10-2 建議客戶焊接參數 / Recommended Customer Soldering Parameters

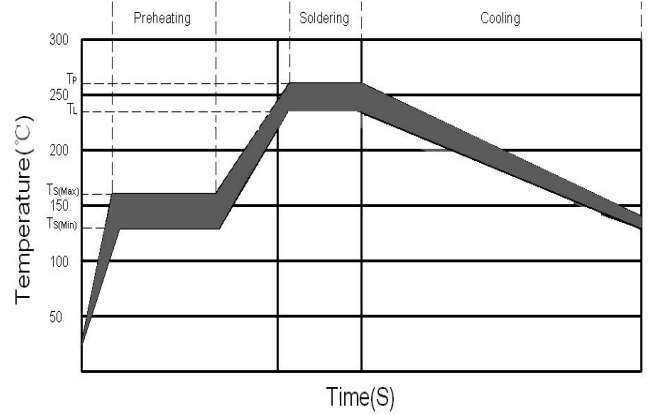
1. Infrared Reflow:

Temperature : 260°C

Time : 5sec Max.

Recommend Reflow profile

Reflow Condition		Pb-Free assembly
Preheating	-Temperature Min (Ts(min))	150 °C
	-Temperature Max (Ts(max))	200 °C
	-Time	60~120 Secs
Soldering	-Temperature (TL)(Liquidus)	235 °C
	-Time Max (TL)	20~40Secs
	-Peak Temperature (Tp)	Max 260 °C
	-Time Max (Tp)	5 Secs



2. Wave soldering

Reservoir Temperature : 260°C

Time in Reservoir : 10sec Max.

3. Hand Soldering :

Temperature : 300°C

Time : 2sec Max.

Soldering iron avoid touch Brass Cap.

### 11. 其他使用注意事項 / OTHER NOTICE IN USED

符合本公司可能的其它檔的要求。

It could be in conformance with another file which made by our company.

### 12. 安全認證及編號 / STANDARDS AND APPROVALS

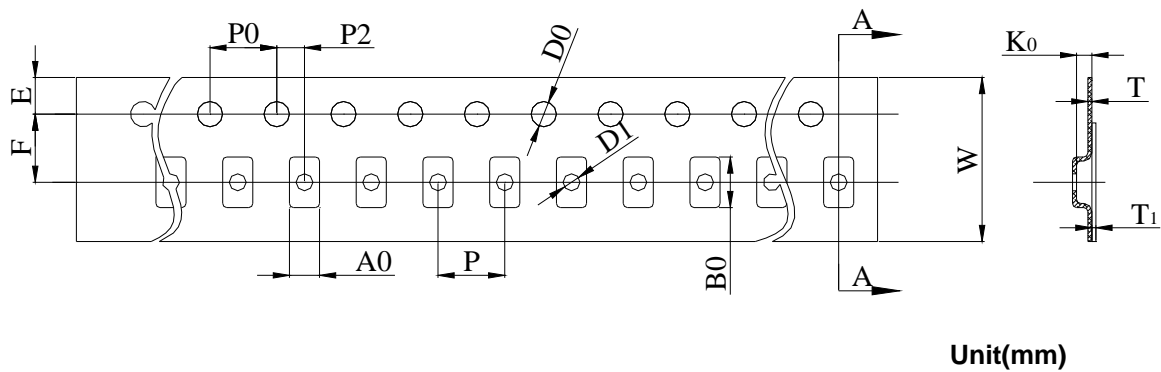
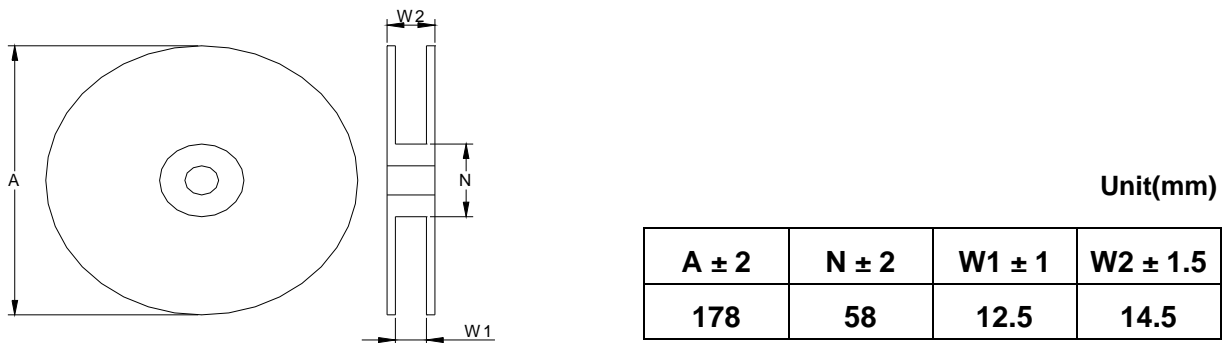
UL	E56092
TUV	J50419412 (1A~5A)
PSE	JET5360-31007-2003 (1A~5A)

### 13. 包裝訊息 / PACKING INFORMATION

#### 13-1 包裝數量、重量 / QUANTITY & WEIGHT

型號 Type Number	數量(pcs) Quantity(pcs)
<b>2410F</b>	<b>1,000</b>

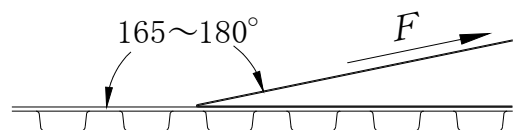
#### 13-2 捲輪規格/ Reel & Tape specifications



<b>W</b>	<b>12.0 ± 0.15</b>	<b>D0</b>	<b>1.50 ± 0.10</b>
<b>P0</b>	<b>4.00 ± 0.10</b>	<b>F</b>	<b>5.50 ± 0.10</b>
<b>P</b>	<b>4.00 ± 0.10</b>	<b>E</b>	<b>1.75 ± 0.10</b>
<b>P2</b>	<b>2.00 ± 0.10</b>	<b>T</b>	<b>0.25 ± 0.05</b>
<b>A0</b>	<b>2.70 ± 0.10</b>	<b>T1</b>	<b>Max. 0.1</b>
<b>B0</b>	<b>6.40 ± 0.10</b>	<b>K0</b>	<b>2.70 ± 0.10</b>

#### 13-3 密封膠膜剝離強度要求 / Peeling Strength of Seal Tape

F = 剝離強度 : 0.1 – 1.0N ( 10 - 100gf )



#### 14. 儲存條件/Storage Conditions

14-1 儲存溫度範圍5°C~30°C。

The ambient temperature shall be kept between 5°C~30°C

14-2 儲存濕度範圍25%~60%。

The relative humidity recommended for storage is between 25%~ 60%.

14-3 長期存放應使用編帶包裝方式放置，產品不得儲存在含硫和含氯的有害氣體環境中。

Long stored should use braid packaging placed, products shall not be stored in the harmful gas of sulfur and chlorine environments.

#### 15. 其他 / OTHERS

15-1 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.

15-2 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 CO., LTD. shall amend it by mutual agreement between the parties.

版次	製作	確認	審核
第9版	程正永 2019/11/18	饒 紅 2019/11/18	<i>Russel</i> 2019/11/18





# UL iQ for Fuses



## Fuses

E56092

### Guide Information

## SUZHOU WALTER ELECTRONIC CO LTD

NO.99 Xinli Road, Fenhu Technic Development Zone, Wujiang Jiangsu 215211 CN

### 2410F (@)

Supplemental micro fuses

<u>Size</u> mm(in)	<u>Amps</u> (A)	<u>Volts</u> (V)	<u>Interrupting</u> <u>Rating (A)</u>
6.1 x 2.5 x 2.5 (0.24 x 0.10 x 0.10)	0.2 - 0.75	250Vac	35
	0.2 - 0.75	125Vdc	50

(@) - followed by A,G,S or blank,and followed by F or blank.

Report Date: 2014-10-20

Last Revised: 2014-10-27

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# UL iQ for Fuses



Fuses

E56092

Guide Information

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	1.0 - 5.0	125Vdc	50

(@) - followed by A,G,S or blank,and followed by F or blank.

Report Date: 2014-10-20

Last Revised: 2014-10-27

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# Zertifikat

mit überwachter Konformität

# Certificate

of surveyed conformity



Zertifikat Nr. *Certificate No.*  
J 50419412

Blatt *Sheet*  
0001

<i>Ihr Zeichen Client Reference</i>	<i>Unser Zeichen Our Reference</i>	<i>Ausstellungsdatum Date of Issue</i>	<i>Date of Issue</i>
W.W.	01-SSC-15062847 007	29.10.2018	(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***  
030-0000421560

## Prüfzeichen *Test Mark*



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Regular  
Production  
Surveillance

www.tuv.com  
ID 1419062625

## Geprüft nach *Tested acc. to*

EN 60127-1:2006+A1+A2  
EN 60127-4:2005+A1+A2

## Zertifiziertes Produkt (Geräteidentifikation) *Certified Product (Product Identification)*

## Lizenzentgelte - Einheit *License Fee - Unit*

### (Miniature Fuses)

Type Designation	: 2410F 2410H	7
Rated Voltage	: AC 250V, 50/60Hz DC 125V	
Rated Current	: 500mA; 630mA; 750mA; 800mA 1,0A; 1,25A; 1,5A; 1,6A; 2,0A 2,5A; 3,0A; 3,15A; 3,5A; 4,0A and 5,0A	
Time/Current Characteristics:	T	
Rated Breaking Capacity	: 35A at 250VAC (In=500mA-800mA) 50A at 250VAC (In=1A-5A) 50A at 125VDC	

7

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.  
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.  
This certificate is based on our Testing and Certification Regulation. The product  
fulfills above mentioned requirements. the production is subject to surveillance.

**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>



平成27年 6月30日

June 30, 2015

DONGGUAN WALTER ELECTRIC CO., LTD.  
PRESIDENT C. C. YEN

東京都渋谷区代々木5-14-12  
一般財団法人 電気安全環境研究所  
製品認証部

5-14-12, Yoyogi, Shibuya-Ku, Tokyo  
Japan Electrical Safety & Environment technology Laboratories (JET)  
Product Certification Division

平成27年 6月19日 付けでお申込みいただきました下記の特定電気用品につきましては、同封の適合同等証明書のとおり 平成27年 6月30日付にて交付され、平成34年 6月29日 まで有効であることをお知らせします。

I hereby inform you that with respect to the application of Jun 19, 2015, for conformity assessment for the specified product hereunder, the certificate, as enclosed herewith, was issued on Jun 30, 2015 and the term of validity of this certificate is from the date of its issue to Jun 29, 2022.

### 記

1. 受付番号 : A15T0026A

Project No.

2. 特定電気用品名 : その他の包装ヒューズ

Name of Product Other enclosed fuses

3. 製品の型 : —

Model

4. 証明書番号 : JET5360-31007-2003

Statement Number

5. 製造工場名 (Manufacturer)

住所 : NO.1, YIHENG ROAD, BULONG, IND. DISTR., PUXIN, YANTIAN,  
FENGGANG, DONGGUAN, CHINA

氏名又は名称 : DONGGUAN WALTER ELECTRIC CO., LTD.

Name

6. 型式 : (Type)

125V, 1A, 銅合金1, 非再用型, 充てん物なし, 磁器筒, 半田付け端子, 排気孔なし, 溶断表示なし, 電子機器用, 遮断電流50A

# 適合同等証明書

Statement of Conformity Assessment

電気用品安全法第8条第1項に規定する技術基準及び同法第9条第2項の経済産業省令で定める基準（法第9条第1項第2号に係る検査に係るものに限る）に適合していることを証明します

I hereby certify that the product mentioned below complies with the technical requirements stipulated in Paragraph 1 of Article 8 of Electrical Appliances and Materials Safety Act (here under referred to as the Act) and the requirements defined by the ordinance of the Ministry of Economy, Trade and Industry based on Paragraph 2 of Article 9 of the Act (limited to Item 2 of Paragraph 1 of Article 9 for Inspection of the Act).

1. 証明書番号: JET5360-31007-2003  
Statement Number
2. 交付年月日: 平成27年6月30日  
Effective Date June 30, 2015
3. 有効年月日: 平成34年6月29日  
Date of Validity June 29, 2022
4. 申込者名 (Applicant)  
住所: NO. 1, YIHENG ROAD, BULONG, IND. DISTR., PUXIN,  
YANTIAN, FENGGANG, DONGGUAN, CHINA  
Address
- 氏名又は名称: DONGGUAN WALTER ELECTRIC CO., LTD.  
Name
5. 特定電気用品名: その他の包装ヒューズ  
Name of Product Other enclosed fuses
6. 型式の区分: 別紙のとおり  
Type Classification See attached "Type Classification"
7. 製造工場名 (Manufacturer)  
住所: NO. 1, YIHENG ROAD, BULONG, IND. DISTR., PUXIN,  
YANTIAN, FENGGANG, DONGGUAN, CHINA  
Address
- 氏名又は名称: DONGGUAN WALTER ELECTRIC CO., LTD.  
Name
8. 適用試験規格: 電気用品の技術上の基準を定める省令の解釈  
Applied Standard for Testing Description of the technical requirements by the METI Ordinance  
別表第十二 J60127-1 (H22) 及び J60127-4 (H22)  
Appendix 12 J60127-1 (H22) and J60127-4 (H22)
9. 適合性検査の方法: (Testing Method for Conformity Assessment)
  - 1) 試験用の特定電気用品については、電気用品の技術上の基準を定める省令の解釈に定める方法  
With respect to testing for Category A products, the testing method is based on the technical requirements of the description of Electrical Appliances and Materials stipulated in the METI Ordinance.
  - 2) 当該特定電気用品に係る届出事業者又は事業場における検査設備については、電気用品安全法施行規則別表第四の検査設備の欄に掲げる検査設備ごとにそれぞれ同表の技術上の基準の欄に掲げる方法  
With respect to inspection facilities required for Category A products at the factory, Testing Method described in the column of the technical requirements for each inspection facilities in the column of inspection facilities is shown in the Appendix 4 of Enforcement Regulations of the Act.

## 10. 注意事項

- 1) この適合同等証明書は、提出された試験用の電気用品に関して評価を行った上で交付したものであり、同一の型式の区分にある電気用品について電気用品安全法第8条1項に規定する技術基準適合確認の義務を履行したことを示すものではありません。

This Statement of Conformity Assessment, which is issued on the evaluation of the submitted test-use Electrical Appliances and Materials, does not signify that the Obligation to Comply with Requirements, which is prescribed at Paragraph 1 of Article 8 of the Act, is fulfilled on Electrical Appliances and Materials in the same Type Classification.

- 2) この適合同等証明書は、別紙に記載されている型式の区分の範囲内及び区分の組み合わせについてのみに有効です。

This Statement of Conformity Assessment is valid only for Electrical Appliances and Materials within the Type Classifications and their combination as stated in the attached "Type Classification".

一般財団法人 電気安全環境研究所  
Japan Electrical Safety & Environment Technology Laboratories (JET)

理事長 薦田 康夫  
President Yasuhisa Komoda

東京都渋谷区代々木5-14-12  
(5-14-12, Yoyogi, Shibuya-ku, Tokyo, Japan)

証明書番号：JET5360-31007-2003

# 適合同等証明書別紙

Statement of Conformity Assessment

## 型式の区分

Type Classification

要素 Factor	区分 Classification
定格電圧 Rated voltage	(1) 125V以下のもの 125V or less
定格電流（定格電流表示のあるものの場合に限る。） Rated current (limited to those with rated current markings)	(1) 5A以下のもの 5A or less
適用電動機の定格容量（定格電流表示のないものの場合に限る。） Rated capacity of applicable motor (limited to those without rated current markings)	—
可溶体の主材料 Fuse element materials	(5) 銅のもの Copper
可溶体の数 Number of fuse elements	(1) 1のもの One
再使用（管形ヒューズを除く。） Reusability (excluding cartridge fuses)	(2) できないもの Not reusable
内部充てん物 Filler materials	(2) ないもの Without filler materials
筒（内筒を除く。）の材料 Outer cartridge materials	(3) 磁器のもの又はガラスのもの Ceramic or glass
端子 Terminals	(5) その他のもの Others
排気孔 Exhausting opening	(2) ないもの Without exhausting opening
溶断の表示 Blowout fuse indicator	(2) ないもの Without blowout fuse indicator
用途 Application	(2) 電子機器用のもの For use in electric appliances
定格遮断電流 Rated breaking capacity	(1) 100A以下のもの 100A or less