

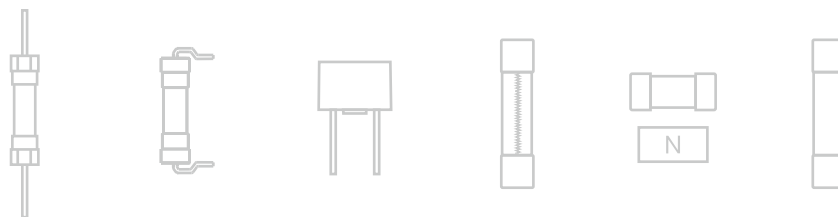
 Walter Electronic

COMPONENTS CATALOG

華 德 電 子 零 件 產 品 型 錄

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In keeping with our policy of constant product refinement, we reserve the right to make product changes at any time without prior notice. For more information please visit us at www.walterfuse.com

本型錄刊載內容及技術數據或資料若有更改或錯誤將不在另行通知，以公司內部資料為準。

About Walter 華德介紹

Walter Electronic was founded in 1968 and hallmarked as the first Taiwanese fuse manufacturer. In 1991 and 2000, Walter established manufacturing sites in Pearl River Delta Region, Dongguan, Guangdong, and Yangtze River Delta Region, Wujiang, Jiangsu, with a primary objective to serve our valuable clients from the south China and East China region. Walter's products are available in mainland domestic market as well as worldwide markets. In 2006, Walter Electronic obtained support on Current Sensing Resistor and obtained accreditation from famous electric company. In 2015 Walter Electronic released Power fuses for applications such as PV system, industrial, telecom, UPS, BMS, automotive, and instruments.

華德電子成立於1968年，系台灣第一家保險絲專業製造商，迄今已擁有超過48年的生產經驗；為更好的服務中國華南及華東廣大客戶，公司分別於1991年、2000年設廠於中國珠三角—廣東東莞及長三角—江蘇吳江，產品可內銷中國及出口世界各地；我司於2006年獲得日本大廠電流感測電阻相關產品技術支持，開始發展電阻元件，並獲得知名大廠認證；於2011年推出電力保險絲，其市場涵蓋太陽能系統、工業電源、通訊電源、UPS、電力電池、電動汽車、儀器儀表等。

Milestones 發展歷程

- **1968** - Walter Electronic was established in Taiwan.
華德電子股份有限公司成立於台灣
- **1991** - Dongguan Walter Electronic was established in Dongguan, Guangdong.
於廣東東莞成立東莞華德
- **2000** - Suzhou Walter Electronic was established in Wujiang, Jiangsu.
於江蘇吳江成立蘇州華德
- **2003** - Released Thermal Cutoff series fuse.
推出溫度保險絲 (Thermal Cutoff Fuse)
- **2006** - Comprehensive RoHS integration.
全面生產RoHS產品
- **2007** - Released SMD series fuse.
Released Current Sensing Resistors (Shunt resistors).
推出貼片型保險絲 (SMD Fuse)
與電流偵測精密電阻 (Current Sensing Resistor)
- **2011** - Released "wire in air" High Performance and Surge withstand Surface Mount Fuse Nano 6125, with rated voltage up to 125Vac.
推出wire in air高性能高亢浪湧貼片型保險絲 Nano6125，承受電壓為125Vac。
- **2012** - Released enhanced type Nano 6125, with rated voltage up to 250Vac.
推出強化型 Nano6125 承受電壓可達250Vac。
- **2014** - Warren Electronics was established in Dongguan, Guangdong.
Juneway Electronic was established in Jiangmen, Guangdong.
於廣東東莞成立華恒電子有限公司。
於廣東江門成立鈞威廠。
- **2015** - Released Power Fuses for applications such as PV system, industrial, telecom, UPS, battery pack, automotive, and instruments.
Released 2020 series, High anti-pulse function and breaking capacity, used in all kinds of lighting equipment and power supply.
Product height size is 5mm.
推出電力保險絲，其市場應用涵蓋太陽能發電、工業電源、通訊電源、UPS、電力電池、電動汽車、儀器儀表等。
發佈新品2020 TYPE，具高強度抗突波功能及分段能力應用於各式照明設備及電源產品，產品高度僅為5mm。
- **2016** - Released High Rated Current and Surge withstand Surface Mount Fuse 1032, with rated current up to 60A and rated voltage up to 250Vac.
推出高電流高亢浪湧貼片型保險絲1032，其本身額定電流可達60A之外，額定電壓同時可達250Vac。

Product Development 產品自開發

Walter possesses advanced R&D capability and holds all intellectual property rights. In an effort to enhance product development capabilities, we recruited senior engineers from the Industrial Technology Research Institute of Taiwan to strengthen Walter's engineering team.

In recent years, Walter increased interactions and partnerships with reputable industry groups such as scholastic organizations from Japan, Taiwan, and Mainland China.

華德所有產品均源於自身研發技術，擁有自主品牌和知識產權。為加快產品開發，公司從台灣工研院引入高級研發人才不斷壯大技術隊伍。

近年來，華德加強與外界技術交流與合作，例如與日本學術機構技術交流，與台灣、大陸多所高等院校在電子化工技術領域保持密切的聯繫和項目合作。

Automated Equipment Production Line 自動化生產線

90% of the automated production equipment is crafted in-house, which greatly enhances production efficiency and the quality of our products.

90%以上先進自主化生產設備，均根據FUSE生產需要而研發製作，大大提高了我們的生產效率、同時提升了我們的品質。

Planet 環保理念

Certifications / 相關認證	Factory / 工廠		
	Dongguan / 東莞	Suzhou / 蘇州	Jiangmen / 江門
ISO 9001	✓	✓	✓
ISO 14001	✓	✓	✓

List of Inspection Items 檢測項目列舉

- Salt spray test / 鹽霧試驗
- Digital microscope test / 電子顯微鏡測試
- Isolation test / 絕緣測試
- Thermal shock / 熱衝擊
- Soldering heat resistance test / 耐焊接測試
- Temperature raising test / 溫升測試
- Environmental test / 環境實驗
- Plated-thickness major material analysis / 鍍層厚度儀及材料分析



Electronic Load Testing Equipment (CHROMA) / 電子負載測試機組 (CHROMA)



3D High Rating Microscope (Keyence) / 3D 高倍率立體顯微鏡 (Keyence)



RoHS Elements X-Ray Detector / 島津光譜儀



For SMD type products, simulating IR RELOW testing / 高溫無鉛回流焊機 (晉力達)

Guide For Fuse Selection 保險絲選用指南

The purpose of this reference guide is to assist engineers to select fuses that will provide effective circuit protection for designated electronic components or equipment.

為使用戶在設計時、選用合理的保險絲； 更好的保護電路、電器元件及設備、特制定保險絲選用指南、供開發工程師參考。

Fuse Selector Guide 選用保險絲需考慮的參數

1. Select the proper fuse size according to the available circuit space.
根據用戶在設計電路所安裝保險絲的空間、選用適當尺寸的保險絲。
2. Select the proper fuse shape according to the mounting method of the circuit.
根據用戶在設計電路所需的安裝形式、選用適當形狀特徵的保險絲。
3. Select the proper fuse according to the product's required safety certification standards: such as C-UL, VDE, SEMKO, PSE, CCC, KC, BSI.
根據用戶產品所需的安規認證、決定選用適當安規認證的保險絲。
4. Determine the proper fuse voltage rating according to the applied voltage of the circuit.
根據用戶產品電路的有效電路電壓、決定選用保險絲的額定電壓。
5. Select the appropriate fuse current rating (In) according to the maximum normal working current of the circuit.
根據用戶產品電路的最大正常工作電流、初步選定保險絲的額定電流(In)。
 - * Considered the fuse decaying factors.
考慮保險絲的安全衰減率。
 - * Considering the derating of fuse based on the ambient temperature.
考慮保險絲使用環境溫度衰減率。
6. Consider the current pulse / 考慮電流脈衝：
 - * Calculate the circuit's maximum current pulse I^2t value.
計算電路中產生的最大脈衝 I^2t 值。
 - * Calculated the required I^2t value of fuse.
計算所需保險絲的 I^2t 值。

Time-lag fuse typically is recommended when distinctive current pulse is specified.
若用戶在設計電路中存在脈衝並且有特別要求、一般選用慢熔斷型保險絲。
7. Select the fuse type.
最後選定保險絲的規格。
8. The selected fuse undergoes test runs in the circuit/product.
選用的保險絲規格樣品安裝在電路中正常運行測試。

Product Development 產品自開發

1. Fuse Size & Shape

第一步：選用保險絲的尺寸形狀

The fuse shape and size is determined by the available space within the circuit design and mounting requirements.

Note: please refer to this catalog for fuse characteristics and physical specifications.

選用何種尺寸形狀特徵的保險絲、主要取決於用戶設計電路的空間和電路所需的安裝要求。

注：保險絲的尺寸形狀特徵、參照後面各規格保險絲具體工程圖。

2. Safety Agency Approvals

第二步：選用所需安規認證

Select fuse according to the product's required relevant safety certification approvals.

Note: please refer to this catalog for fuse characteristics and physical specifications.

選用何種安規認證的保險絲、主要取決於用戶產品所需通過的安規認證。

注：保險絲通過的安規認證、參照後面各規格保險絲具體通過的安規認證。

3. Voltage Rating

第三步：選用保險絲的額定電壓

Selected fuse should have a voltage rating greater than or equal to the applied circuit voltage, that is, the applied voltage must be smaller than or equal to rated voltage. For example, a 125V fuse can only be used in a circuit that is smaller than or equal to 125V, thus cannot be used in a 250V circuit. On the other hand, a 250V fuse can be used in the circuit that is smaller than or equal to 250V, thus includes the 125V range.

選用保險絲的額定電壓、需選用大於或等於電路中所使用有效電壓、即：保險絲只能用在小於或等於使用有效電壓的電路中。具體為：額定電壓為：125V的保險絲只能用在小於或等於125V的電路中、不能用在250V的電路中。額定電壓為：250V的保險絲只能用在小於或等於250V的電路中、也可以用在125V的電路中。

4. Current Rating (In)

第四步：選用保險絲的額定電流(In)

Current rating (In) = The maximum steady running of current / (Fuse decaying ratio* The applied ambient temperature derating)

保險絲的額定電流 I_n = 迴路最大穩定電流 / (保險絲的安全衰減率*使用環境溫度衰減率)。



ABOUT WALTER / 華德介紹

(1). Safety Decaying Factors / 保險絲的安全衰減因素

Test results may differ between laboratory testing and actual circuit application, due to contacting resistance from different types of fuse clip/holder used and circuit layouts. Please refer to safety decaying factor calculation guide listed below, to ensure proper fuse functioning within 25±5°C.

因保險絲在實際電路使用中與實驗室測試條件的差異(如:客戶在安裝保險絲所使用的保險絲座、保險絲夾產生的接觸電阻和電路中導線橫截面積等差異)、要保證保險絲在25±5°C條件下能持續可靠地工作、在選用保險絲需考慮保險絲的安全衰減因素、請參考如下簡易計算公式。

- * **UL standard fuse:**
current rating (In)= the maximum steady current of circuit / 0.75
美規製品(UL標準): 保險絲額定電流(In)=迴路最大穩定電流 / 0.75
- * **IEC standard fuse:**
current rating (In)= the maximum steady current of circuit / 0.90
歐規製品(IE標準): 保險絲額定電流(In)=迴路最大穩定電流 / 0.90
- * **JIS standard fuse:**
current rating (In)= the maximum steady current of circuit / 0.85
日規製品(JIS標準): 保險絲額定電流(In)=迴路最大穩定電流 / 0.85

(2). Ambient Temperature Derating / 使用環境溫度衰減率

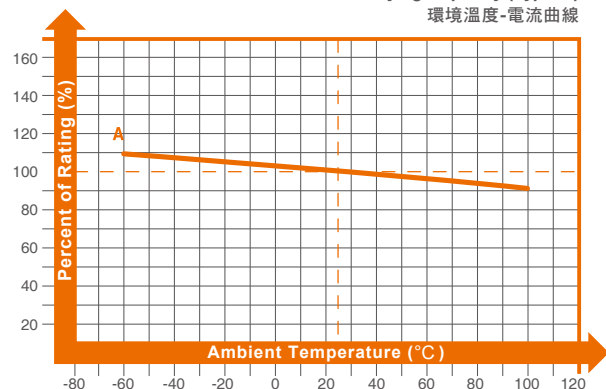
When working under 25±5°C, the temperature will not affect the rated current value of the fuse. However, when temperature exceeds 30°C, environmental condition dramatically influence the rated current value. Thus, thermal impacts are essential to be considered during fuse selection. Please refer to below chart:

當保險絲在25±5°C環境溫度條件下使用時、保險絲的額定電流值不受環境溫度影響;當保險絲在大於30°C環境溫度下使用時、環境溫度對保險絲額定電流承載能力有很大影響。所以在選用保險絲時一定要考慮環境溫度對保險絲的影響。(見圖示1)

Picture 1 / 圖示1

Chart Showing Effect of Ambient Temperature on Current-Carrying Capacity (Typical)

環境溫度-電流曲線



Curve A / 曲線 A :

For FF, Fast-Acting and Time-Lag type fuses.
特快熔斷、快熔斷和慢熔斷保險絲曲線。

After calculating the current rating (In) considering above factors, the proper fuse current rating must be greater than or equal to the current rating (In).

以上計算出保險絲的額定電流In、在選用保險絲時、需選用大於或等於In的最佳額定電流值的保險絲。

5. Pulse

第五步:考慮電流脈衝

The pulse refers to enduring large peaks at short time-interval (less than 10 ms) of instantaneous current (such as surge currents, start-up currents, inrush currents and transients). If the fuse is designated to endure inrush current without operating under normal circumstances, then pulse factors must be considered during the selection process.

電流脈衝是指那些電流峰值大、而持續時間短(小於10ms)的瞬間電流(諸如開機瞬間、電壓變化和其他因素所產生的衝擊電流、起動電流、湧入電流和瞬變電流)。如果要要求保險絲能夠承受正常要求下的電流脈衝而不會熔斷、在選用保險絲時、就一定要考慮脈衝對保險絲的影響。

First, calculate the maximum pulse I^2t based on the actual circuit

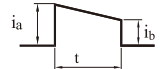
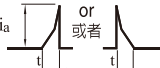
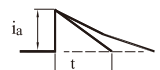
首先:根據在實際使用電路中產生的最大脈衝、計算出此脈衝的 I^2t 值:

$$I^2t = \int_0^t i^2 dt$$

General reference chart provided below (see picture 2) indicates the closest matching pulse waveform and the formula to calculate I^2t .

通常是根據所測出的脈衝波形、對照下表(見圖示2)對應最近似的波形、計算出脈衝的 I^2t 值。

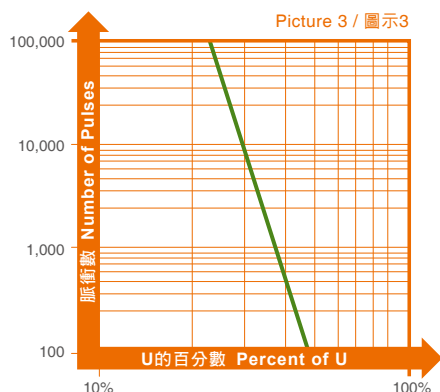
Picture 2 / 圖示2

No. 圖型編號	Waveform 波形	Formulas 計算公式
A		$I^2t = i_a^2 t$
B		$I^2t = (1/3)(i_a^2 + i_a i_b + i_b^2) t$
C		$I^2t = (1/2) i_a^2 t$
D		$I^2t = (1/3) i_a^2 t$
E		$I^2t = (1/5) i_a^2 t$
F		$I^2t = (1/2) i_a^2 t$



Secondly, consider the cycle endurance to select the pulse cycle frequency. (See Picture 3)

首先：利用脈衝循環承受能力、客戶選定能承受該脈衝的次數。(見圖示3)



$U = \text{Ratio (pulse } I^2t \text{ / average melting } I^2t)$

曲線U表示：脈衝 I^2t 值與所需保險絲的 I^2t 值之比：

Pulse cycle withstand capability :

承受循環脈衝能力：

100,000 pulses	$U=22\%$ of Nominal melting I^2t	當 $U=22\%$ 時、能承受100,000次脈衝
10,000 pulses	$U=29\%$ of Nominal melting I^2t	當 $U=29\%$ 時、能承受10,000次脈衝
1,000 pulses	$U=38\%$ of Nominal melting I^2t	當 $U=38\%$ 時、能承受1,000次脈衝
100 pulses	$U=48\%$ of Nominal melting I^2t	當 $U=48\%$ 時、能承受100次脈衝

Note: time-interval (10s) must be given between pulse events to adequately heat sink from the previous event.

注：脈衝與脈衝之間必須留有足夠的時間間隔(10秒)、以使前一過程的熱量能夠散失。

Finally: consider the pulse cycle withstand capability (U) and the pulse I^2t , to calculate I^2t value of the fuse.

最後：利用脈衝循環承受能力和電路中脈衝 I^2t 值、計算所需保險絲的 I^2t 值：
(所需保險絲的 I^2t 值 = 脈衝 I^2t 值 / U)

Average melting I^2t of the fuse needed = Ratio (Pulse I^2t / U)

$U = \text{脈衝 } I^2t \text{ 值} / \text{所需保險絲的 } I^2t \text{ 值}$

After calculating the average melting I^2t value needed in the circuit and determining the thermal energy melting I^2t value, select a fuse with thermal energy melting I^2t value greater than or equal to the required average melting I^2t value.

計算出所需保險絲的 I^2t 值與保險絲本身的額定熔化熱能 I^2t 值對比：

選用保險絲額定熔化熱能 I^2t 值大於或等於所需保險絲的 I^2t 值的相應規格。

6. Testing in Actual Circuit

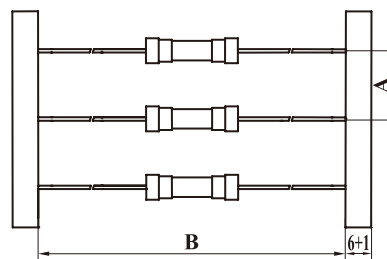
第六步：測試

After determining fuse specifications, samples must be tested in actual circuit to verify functional characteristics. This verification process includes testing under normal and defective working conditions, to ensure fuse can adequately protect the circuit.

選定保險絲的規格後、依據本公司提供之樣品必須安裝在實際電路中進行測試、驗證所選用的保險絲是否合理；此驗證應包括正常工作條件及故障條件下的測試、以確保所選用的保險絲規格能在被保護的電路中正常工作。

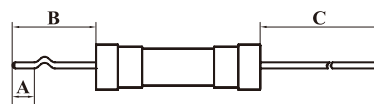
Taping & Forming 帶狀及彎腳加工尺寸對照表

Fuse Diameter	A(mm)	B(mm)
Φ 3.0	5	52
Φ 3.6	5.6	52
Φ 4.6	10	52
Φ 5.2	10	52

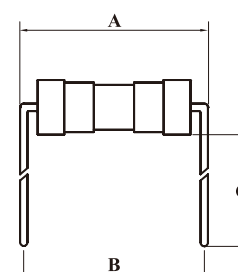


Fuse Size / Type	Φ 3.6(mm)			Φ 4.6(mm)			Φ 5.2(mm)		
	A	B	C	A	B	C	A	B	C
AA	≥ 2.5	≥ 6	≥ 5	≥ 3	≥ 6	≥ 5	≥ 3	≥ 6	≥ 5
AB	≥ 16	≥ 15.4	≥ 3.5	≥ 20.5	≥ 20	≥ 3.5	≥ 26	≥ 25	≥ 4
AC	≥ 16	≥ 11.5	≥ 7	≥ 20.5	≥ 16.5	≥ 7	≥ 26	≥ 21	≥ 6.5
AD	≥ 6	≥ 3.5	≥ 6.5	≥ 6	≥ 5	≥ 6.5	≥ 6	≥ 5	≥ 6.5
AF	≥ 6	≥ 3.5	≥ 5.5	≥ 6	≥ 5	≥ 5.5	≥ 6	≥ 5	≥ 5.5
AG	≥ 4	≥ 3.5	≥ 5.5	≥ 4	≥ 5	≥ 5.5	≥ 4	≥ 5	≥ 5.5

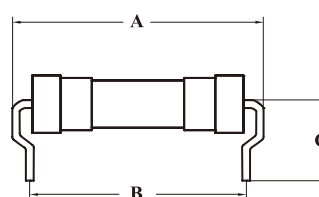
AA:



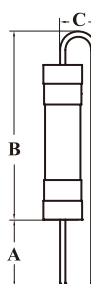
AB:



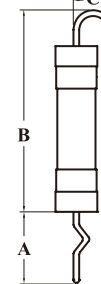
AC:



AD:



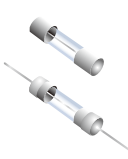
AF:



AG:



	Series No. 型號	Fuse Size 尺寸	Voltage 電壓	Characteristic 特性	Safety Approvals 安規認證	Page No. 頁數
Surface Mount Fuses / 貼片式保險絲						
	0603F	1.6x0.80mm	63V / 125V	Fast Acting Type		01
	0603T	1.6x0.80mm	32V	Time-Lag Type		02
	1206F	3.2x1.6mm	63V / 125V	Fast Acting Type		03
	1206T	3.2x1.6mm	63V	Time-Lag Type		04
	6125SF	6.1x2.5mm	65V / 125V	Inrush Type		05
	6125SH	6.1x2.5mm	125V	High Inrush Type		06
	2410F	6.1x2.5mm	125V / 250V	Fast Acting Type	  	07
	2410H	6.1x2.5mm	125V / 250V	High Inrush Type	  	08
	1032SF	10.25x3.2mm	65V / 250V	Fast Acting Type		09
Micro Fuses / 微型保險絲						
	TNP	8.5x3.3mm	250V	Time-Lag Type	   	10
	FCP	3.0x7.3mm	125V	Fast Acting Type	    	11
	TCP	3.0x7.3mm	125V	Time-Lag Type		12
	FEP	3.7x8.0mm	250V	Fast Acting Type	 	13
	TEP	3.7x8.0mm	250V	Time-Lag Type	  	14
Subminiature Fuses / 超小型保險絲						
	2000	Ø8.5x8.0mm	250V / 300V	Time-Lag Type	    	15
	2010	8.5x8.5x4mm	250V / 300V	Time-Lag Type	    	16
	2020	8.5x5x4mm	250V/300V/400V	Time-Lag Type	    	17
Ceramic Tube Fuses / 陶瓷管保險絲						
	FDP	3.6x10mm	250V	Fast Acting Type	  	18
	TDP	3.6x10mm	250V	Time-Lag Type	  	19
	ICP	3.6x10mm	250V	Time-Lag Type	   	20
	SBC/SBP	5.2x15.2mm	125V/250V/350V	Time-Lag Type	 	21
	SCC/SCP	5.2x20mm	125V / 250V	Time-Lag Type	 	22
	FSC	5.2x20mm	250V	Fast Acting Type	    	23
	FHC/FHP	5.2x20mm	420Vac/Vdc	Fast Acting Type	 	24
	TSC	5.2x20mm	250V	Time-Lag Type	      	25
	TSC+P	5.2x20mm	250V	Time-Lag Type	    	26
	TSS+P	5.6x19.5mm	250V	Time-Lag Type	    	27
	MTC	6.35x31.75mm	250V	Time-Lag Type		28
	MTP	6.35x31.75mm	250V	Time-Lag Type	 	29

	Series No. 型號	Fuse Size 尺寸	Voltage 電壓	Characteristic 特性	Safety Approvals 安規認證	Page No. 頁數
Glass Tube Fuses / 玻璃管保險絲						
	FAP	3.6x10mm	125V / 250V	Fast Acting Type	UL _{US}	30
	TAP	3.6x10mm	125V / 250V	Time-Lag Type	UL _{US}	31
	BGF/BFP	4.6x16mm	125V / 250V	Fast Acting Type	UL _{US} JET	32
	BGT/BTP	4.6x16mm	125V / 250V	Time-Lag Type	UL _{US} JET	33
	FSD	5.2x20mm	125V / 250V	Fast Acting Type	UL _{US} VDE S CEC JET	34
	TSD	5.2x20mm	250V	Time-Lag Type	UL _{US} VDE S CEC JET	35
	TMD	5.2x20mm	125V / 250V	Time-Lag Type	UL _{US} VDE S CEC JET	36
	TME	5.2x20mm	250V	Time-Lag Type	UL _{US}	37
	CIS/CSP	5.2x20mm	125V / 250V	Fast Acting Type	UL _{US} JET	38
	SGP	5.2x20mm	125V / 250V	Fast Acting Type	UL _{US} JET	39
	SIC/SIP	5.2x20mm	125V / 250V	Time-Lag Type	UL _{US} JET	40
	SLA	5.2x20mm	125V / 250V	Time-Lag Type	UL _{US} JET	41
	MGC/MGP	6.35x31.75mm	125V / 250V	Fast Acting Type	UL _{US} JET	42
	MDC/MDP	6.35x31.75mm	125V / 250V	Time-Lag Type	UL _{US} JET	43
	MTG	6.35x31.75mm	250V	Time-Lag Type	UL _{US}	44
	JGC/JGP	5.2x20mm	125V / 250V	Fast Acting Type	JET	45
	JDC/JDP	5.2x20mm	125V / 250V	Time-Lag Type	JET	46
	MFS/MFP	6.35x30mm	125V / 250V	Fast Acting Type	JET	47
	MDS/MDT	6.35x30mm	125V / 250V	Time-Lag Type	JET	48
Thermal Cutoff Fuses / 溫度保險絲						
	TB		250V	Rating 2A	UL _{US} S CEC JET	49-50
	TE/TG		250V	Rating 10A/15A	UL _{US} S CEC JET	51
Fuseholders & Accessories / 保險絲座及配件						
						52-54
Current Sensing Resistors / 電流感測電阻						
	STE/STC/ HTE/HTC			Two Terminal Type		55-60
	HFCL/ SFC/HFC			Four Terminal Type		61-62
	MSH			Metal Plate Type		63
	MSTC			Metal Plate Type		64-65

I-T Characteristics / 時間-電流特性

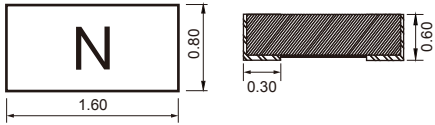
Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
500mA~6A	100%	4 Hrs Min. / 最短4小時
	200%	5s Max. / 最長5秒



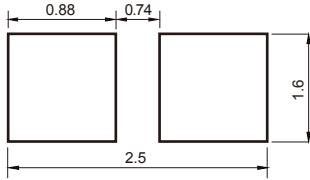
Product Features / 產品特性

Materials 材質	Body / 本體 : Cu / 銅, Sn / 錫 Substrate / 基板 : alumina ceramic / 氧化鋁陶瓷基板 Electrode / 電極 : Cu / 銅, Ni / 鎳, Sn / 錫 (termination with nickel and Pure-tin solder plating / 電極端面為鍍鎳及無鉛錫)
Operating Temperature 操作溫度	-55°C to +150°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	T / 熔錫溫度=235°C±5°C, t / 浸錫時間=2+0/-0.5s, Cover / 覆蓋率 ≥ 95%, ΔS=2.0mm±0.5mm, magnifier: 20X
Resistance to Soldering Heat 耐焊接熱	T / 熔錫溫度=260°C±5°C, t / 浸錫時間=10s ±1s ΔS=2.0mm±0.5mm
Recommended Soldering Parameters 建議焊錫參數	260°C, 10s Max. (compatible with both wave and solder-reflow / 可用于波峰焊和回流焊制程)
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~40°C, relative humidity ≤ 75%. 在溫度+10°C~40°C, 相對濕度 ≤ 75% 的密封條件下可存放 2 年。 At most can be kept 30 days at temperature +10°C~40°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~40°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Recommended Pad Layout



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
			
500mA	125V DC	500mA~800mA	
750mA	125V DC	50A@125V DC	
1.00A	63V DC	1A~6A 50A@63V DC	
1.25A	63V DC		
1.50A	63V DC		
1.75A	63V DC		
2.00A	63V DC		
2.50A	63V DC		
3.00A	63V DC		
3.50A	63V DC		
4.00A	63V DC		
5.00A	63V DC		
6.00A	63V DC		

I-T Characteristics / 時間-電流特性

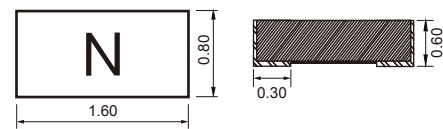
Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
1A~6A	100%	4 Hrs Min. / 最短4小時
	200%	120s Max. / 最長120秒
	300%	3s Max. / 最長3秒
1A~1.5A	800%	0.5ms Min. / 最短0.5毫秒
		50ms Max. / 最長50毫秒
2A~6A	800%	1ms Min. / 最短1毫秒
		50ms Max. / 最長50毫秒



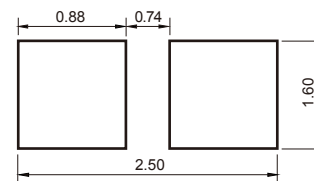
Product Features / 產品特性

Materials 材質	Body / 本體: Cu / 銅, Sn / 錫 Substrate / 基板: alumina ceramic / 氧化鋁陶瓷基板 Electrode / 電極: Cu / 銅, Ni / 鎳, Sn / 錫 (termination with nickel and Pure-tin solder plating / 電極端面為鍍鎳及無鉛錫)
Operating Temperature 操作溫度	-55°C to +150°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	T / 熔錫溫度=235°C±5°C, t / 浸錫時間=2+0/-0.5s, Cover / 覆蓋率 ≥ 95%, ΔS=2.0mm±0.5mm, magnifier: 20X
Resistance to Soldering Heat 耐焊接熱	T / 熔錫溫度=260°C±5°C, t / 浸錫時間=10s ±1s ΔS=2.0mm±0.5mm
Recommended Soldering Parameters 建議焊錫參數	260°C, 10s Max. (compatible with both wave and solder-reflow / 可用于波峰焊和回流焊制程)
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~40°C, relative humidity ≤ 75%. 在溫度+10°C~40°C, 相對濕度 ≤ 75% 的密封條件下可存放 2 年。 At most can be kept 30 days at temperature +10°C~40°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~40°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Recommended Pad Layout

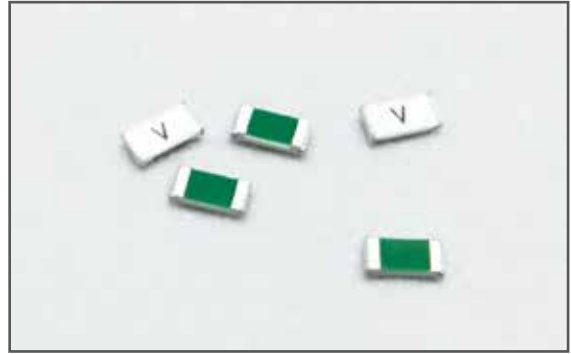


Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
1.00A	32V DC	1A~6A 50A@32V DC	
1.50A	32V DC		●
2.00A	32V DC		●
2.50A	32V DC		●
3.00A	32V DC		●
3.50A	32V DC		●
4.00A	32V DC		●
5.00A	32V DC		●
6.00A	32V DC		●

I-T Characteristics / 時間-電流特性

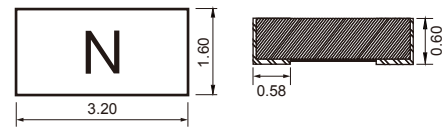
Ampere Rating 額定電流	% of Ampere Rating 額定電流百分比	Opening Time 熔斷時間
500mA~10A	100%	4 Hrs Min. / 最短4小時
	250%	5s Max. / 最長5秒
	350%	1s Max. / 最長1秒



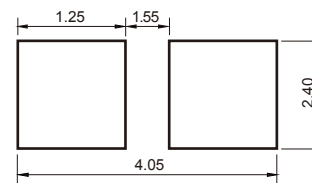
Product Features / 產品特性

Materials 材質	Body / 本體: Cu / 銅, Sn / 錫 Substrate / 基板: alumina ceramic / 氧化鋁陶瓷基板 Electrode / 電極: Cu / 銅, Ni / 鎳, Sn / 錫 (termination with nickel and Pure-tin solder plating / 電極端面為鍍鎳及無鉛錫)
Operating Temperature 操作溫度	-55°C to +150°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	T / 熔錫溫度=235°C±5°C, t / 浸錫時間=2+0/-0.5s, Cover / 覆蓋率 ≥ 95%, ΔS=2.0mm±0.5mm, magnifier: 20X
Resistance to Soldering Heat 耐焊接熱	T / 熔錫溫度=260°C±5°C, t / 浸錫時間=10s ±1s ΔS=2.0mm±0.5mm
Recommended Soldering Parameters 建議焊錫參數	260°C, 10s Max. (compatible with both wave and solder-reflow / 可用于波峰焊和回流焊制程)
Storage Conditions 儲存條件	Can be stored for 2 years under tight seal condition at temperature of +10°C~40°C, relative humidity ≤ 75%. 在溫度+10°C~40°C, 相對濕度 ≤ 75% 的密封條件下可存放 2 年。 At most can be kept 30 days at temperature +10°C~40°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~40°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Recommended Pad Layout

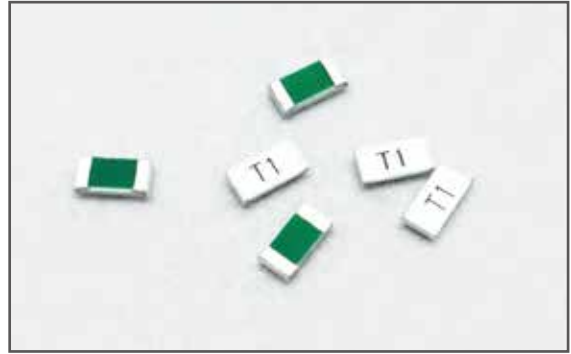


Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
			
500mA	125V DC	500mA~750A	●
750mA	125V DC	50A@125V DC	●
1.00A	63V DC	1A~10A 50A@63V DC	●
1.25A	63V DC		●
1.50A	63V DC		●
1.75A	63V DC		●
2.00A	63V DC		●
2.50A	63V DC		●
3.00A	63V DC		●
3.50A	63V DC		●
4.00A	63V DC		●
5.00A	63V DC		●
6.00A	63V DC		●
7.00A	63V DC		●
8.00A	63V DC		●
10.0A	63V DC		●

I-T Characteristics / 時間-電流特性

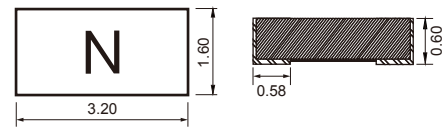
Ampere Rating 額定電流	% of Ampere Rating 額定電流百分比	Opening Time 熔斷時間
500mA~10A	100%	4 Hrs Min. / 最短4小時
	200%	1s Min. 120s Max. / 最短1秒, 最長120秒
	300%	100ms Min. 3s Max. / 最短100毫秒, 最長3秒
	800%	2ms Min. 50ms Max. / 最短2毫秒, 最長50毫秒
	1000%	0.2ms Min. 20ms Max. / 最短0.2毫秒, 最長20毫秒



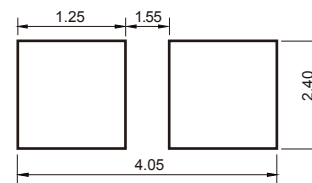
Product Features / 產品特性

Materials 材質	Body / 本體: Cu / 銅, Sn / 錫 Substrate / 基板: alumina ceramic / 氧化鋁陶瓷基板 Electrode / 電極: Cu / 銅, Ni / 鎳, Sn / 錫 (termination with nickel and Pure-tin solder plating / 電極端面為鍍鎳及無鉛錫)
Operating Temperature 操作溫度	-55°C to +150°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	T / 熔錫溫度=235°C±5°C, t / 浸錫時間=2+0/-0.5s, Cover / 覆蓋率 ≥95%, ΔS=2.0mm±0.5mm, magnifier: 20X
Resistance to Soldering Heat 耐焊接熱	T / 熔錫溫度=260°C±5°C, t / 浸錫時間=10s ±1s ΔS=2.0mm±0.5mm
Recommended Soldering Parameters 建議焊錫參數	260°C, 10s Max. (compatible with both wave and solder-reflow / 可用于波峰焊和回流焊制程)
Storage Conditions 儲存條件	Can be stored for 2 years under tight seal condition at temperature of +10°C~40°C, relative humidity ≤ 75%. 在溫度+10°C~40°C, 相對濕度 ≤ 75% 的密封條件下可存放 2 年。 At most can be kept 30 days at temperature +10°C~40°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~40°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Recommended Pad Layout



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
			
1.00A	63V DC	1A~10A 50A@63V DC	●
1.25A	63V DC		●
1.50A	63V DC		●
2.00A	63V DC		●
2.50A	63V DC		●
3.00A	63V DC		●
3.50A	63V DC		●
4.00A	63V DC		●
5.00A	63V DC		●
6.00A	63V DC		●
7.00A	63V DC		●
8.00A	63V DC		●
10.0A	63V DC		●

NANO 6125SF Series / 6.1×2.5 mm / Inrush Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流百分比	Opening Time 熔斷時間
1.0A~20.0A	100%	4 Hrs Min. / 最短4小時
	125%	1 Hrs Min. / 最短1小時
	200% (≤10A)	5s Max. / 最長5秒
	200% (>10A)	20s Max. / 最長20秒
	1000%	1ms Min. 10ms Max. / 最短1毫秒, 最長10秒

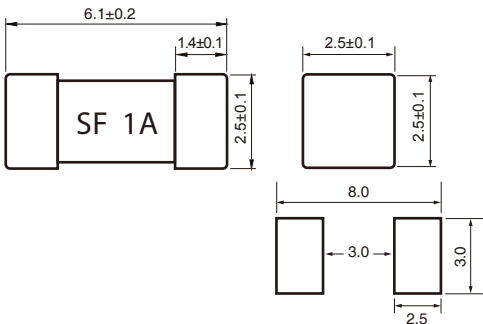
In accordance with UL 248-1/-14 and IEC60127-4 standard / 遵循UL 248-1/-14 和 IEC60127-4



Product Features / 產品特性

Materials 材質	Body / 本體: ceramic tube / 陶瓷管 Cap / 銅帽: brass with gold plated / 黃銅鍍金 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	T / 熔錫溫度=235°C±5°C, t / 浸錫時間=5+0/-0.5s, Cover / 覆蓋率 ≥ 95%
Resistance to Soldering Heat 耐焊接熱	T / 熔錫溫度=260°C±5°C, t / 浸錫時間=10s ±1s
Recommended Soldering Parameters 建議焊錫參數	260°C, 10s Max. (solder-reflow / 回流焊)
Storage Conditions 儲存條件	Can be stored for 2 years under tight seal condition at temperature of +10°C~40°C, relative humidity ≤ 75%. 在溫度+10°C~40°C, 相對濕度 ≤ 75% 的密閉條件下可存放 2 年。 At most can be kept 30 days at temperature +10°C~40°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~40°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

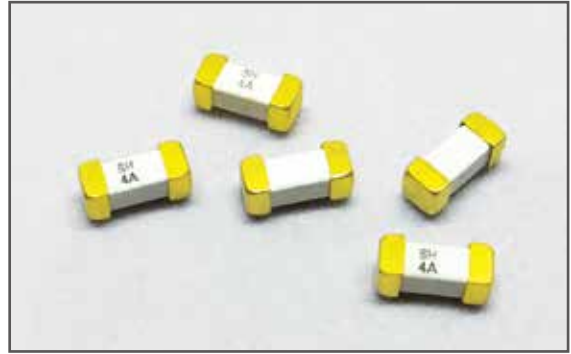
Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
			UL US
1.0A	125V AC/160V DC	50A@125V AC 50A@160V DC	●
1.25A	125V AC/160V DC		●
1.6A	125V AC/160V DC		●
2.0A	125V AC/160V DC		●
2.5A	125V AC/160V DC		●
3.0A	125V AC/160V DC		●
3.15A	125V AC/160V DC		●
4.0A	125V AC/160V DC		●
5.0A	125V AC/160V DC		●
6.3A	125V AC/160V DC		●
7.0A	125V AC/160V DC		●
8.0A	125V AC/160V DC		●
10.0A	125V AC/160V DC		●
12.0A	65V AC/65V DC	50A@65V AC/DC	●
15.0A	65V AC/65V DC		●
20.0A	65V AC/65V DC		●

NANO 6125SH Series / 6.1×2.5 mm / High Inrush Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流百分比	Opening Time 熔斷時間
1.0A~6.3A	100%	4 Hrs Min. / 最短4小時
	200%	120s Max. / 最長120秒
	1000%	10ms Min. / 最短10毫秒

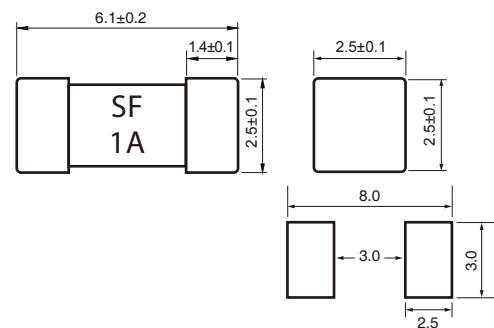
In accordance with UL 248-1/-14 and IEC60127-4 standard / 遵循 UL 248-1/-14 和 IEC60127-4



Product Features / 產品特性

Materials 材質	Body / 本體: ceramic tube / 陶瓷管 Cap / 銅帽: brass with gold plated / 黃銅鍍金 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	T / 熔錫溫度=235°C±5°C, t / 浸錫時間=5+0/-0.5s, Cover / 覆蓋率 ≥95%
Resistance to Soldering Heat 耐焊接熱	T / 熔錫溫度=260°C±5°C, t / 浸錫時間=10s ±1s
Recommended Soldering Parameters 建議焊錫參數	260°C, 10s Max. (solder-reflow / 回流焊)
Storage Conditions 儲存條件	Can be stored for 2 years under tight seal condition at temperature of +10°C~40°C, relative humidity ≤ 75%. 在溫度+10°C~40°C, 相對濕度 ≤ 75% 的密閉條件下可存放 2 年。 At most can be kept 30 days at temperature +10°C~40°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~40°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

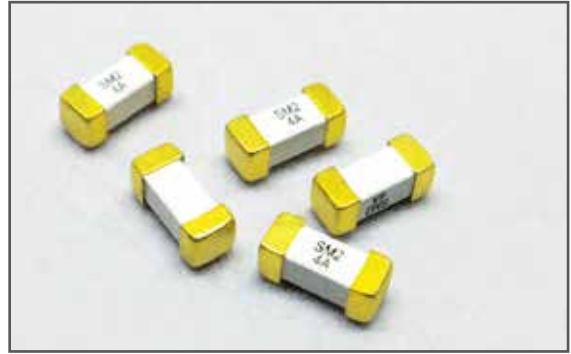
Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
			
1.0A	125VAC/125V DC	50A@125V AC/DC	●
1.25A	125VAC/125V DC		●
1.5A	125VAC/125V DC		●
1.6A	125VAC/125V DC		●
2.0A	125VAC/125V DC		●
2.5A	125VAC/125V DC		●
3.0A	125VAC/125V DC		●
3.15A	125VAC/125V DC		●
3.5A	125VAC/125V DC		●
4.0A	125VAC/125V DC		●
5.0A	125VAC/125V DC		●
6.3A	125VAC/125V DC		●

NANO 2410F Series / 6.1×2.5 mm / Fast Acting type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流百分比	Opening Time 熔斷時間
1.0A~5.0A	100%	4 Hrs Min. / 最短4小時
	200%	120s Max. / 最長120秒
	1000%	10ms Min. / 最短10毫秒

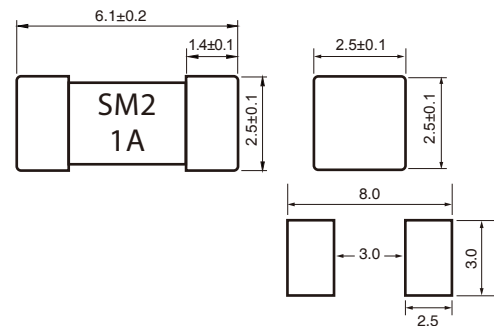
In accordance with UL 248-1/-14 and IEC60127-4 standard / 遵循 UL 248-1/-14 和 IEC60127-4



Product Features / 產品特性

Materials 材質	Body / 本體: ceramic tube / 陶瓷管 Cap / 銅帽: brass with gold plated / 黃銅鍍金 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	T / 熔錫溫度=235°C±5°C, t / 浸錫時間=5+0/-0.5s, Cover / 覆蓋率 ≥95%
Resistance to Soldering Heat 耐焊接熱	T / 熔錫溫度=260°C±5°C, t / 浸錫時間=10s ±1s
Recommended Soldering Parameters 建議焊錫參數	260°C, 10s Max. (solder-reflow / 回流焊)
Storage Conditions 儲存條件	Can be stored for 2 years under tight seal condition at temperature of +10°C~40°C, relative humidity ≤ 75%. 在溫度+10°C~40°C, 相對濕度 ≤ 75% 的密閉條件下可存放 2 年。 At most can be kept 30 days at temperature +10°C~40°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~40°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

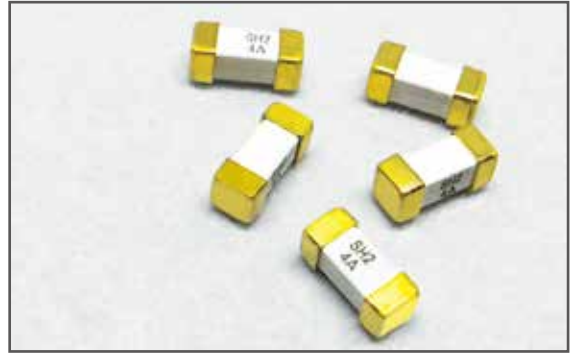
Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證		
					
1.0A	250VAC	UL/TUV 50A@250V AC 50A@125V DC	●	●	●
1.25A	250VAC		●	●	●
1.5A	250VAC		●	●	●
1.6A	250VAC		●	●	●
2.0A	250VAC		●	●	●
2.5A	250VAC		●	●	●
3.0A	250VAC	PSE 50A@125V AC	●	●	●
3.15A	250VAC		●	●	●
3.5A	250VAC		●	●	●
4.0A	250VAC		●	●	●
5.0A	250VAC		●	●	●

NANO 2410H Series / 6.1×2.5 mm / High Inrush Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流百分比	Opening Time 熔斷時間
1.0A~5A	100%	4 Hrs Min. / 最短4小時
	125%	1 Hrs Min. / 最短1小時
	200%	120s Max. / 最長120秒
	1000%	10ms Min. 60ms Max. / 最短10毫秒, 最長60毫秒

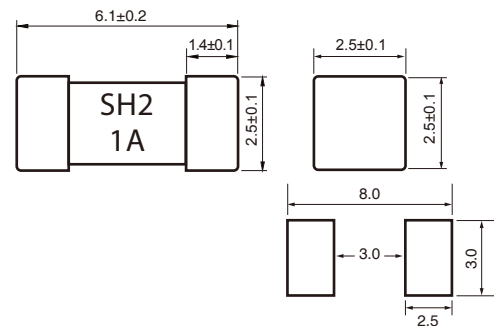
In accordance with UL 248-1/-14 and IEC60127-4 standard / 遵循 UL 248-1/-14 和 IEC60127-4



Product Features / 產品特性

Materials 材質	Body / 本體: ceramic tube / 陶瓷管 Cap / 銅帽: brass with gold plated / 黃銅鍍金 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	T / 熔錫溫度=235°C±5°C, t / 浸錫時間=5+0/-0.5s, Cover / 覆蓋率 ≥95%
Resistance to Soldering Heat 耐焊接熱	T / 熔錫溫度=260°C±5°C, t / 浸錫時間=10s ±1s
Recommended Soldering Parameters 建議焊錫參數	260°C, 10s Max. (solder-reflow / 回流焊)
Storage Conditions 儲存條件	Can be stored for 2 years under tight seal condition at temperature of +10°C~40°C, relative humidity ≤ 75%. 在溫度+10°C~40°C, 相對濕度 ≤ 75% 的密封條件下可存放 2 年。 At most can be kept 30 days at temperature +10°C~40°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~40°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

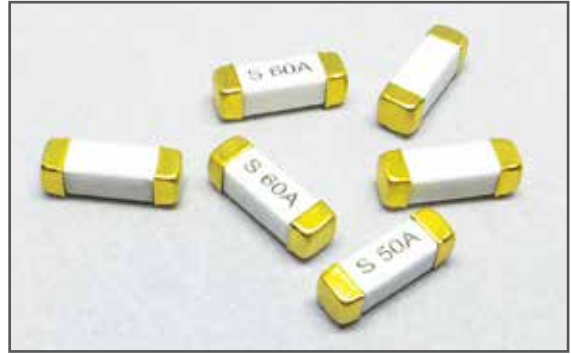
Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證		
					
1.0A	250VAC	UL/TUV 50A@250V AC 50A@125V DC	●	●	●
1.25A	250VAC		●	●	●
1.5A	250VAC		●	●	●
1.6A	250VAC		●	●	●
2.0A	250VAC		●	●	●
2.5A	250VAC		●	●	●
3.0A	250VAC	PSE 50A@125V AC	●	●	●
3.15A	250VAC		●	●	●
3.5A	250VAC		●	●	●
4.0A	250VAC		●	●	●
5.0A	250VAC		●	●	●

NANO 1032SF Series / 10.25×3.2 mm / Fast Acting Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流百分比	Opening Time 熔斷時間
20A~60A	100%	4 Hrs Min. / 最短4小時
	200%	60s Max. / 最長60秒
	1000%	1ms Min. / 最短1毫秒

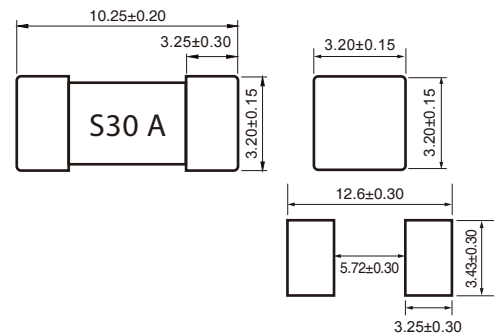
In accordance with UL248-14 and IEC60127-4 / 遵循UL28-14 和 IEC60127-4



Product Features / 產品特性

Materials 材質	Body / 本體: ceramic tube / 陶瓷管 Cap / 銅帽: brass with gold plated / 黃銅鍍金 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	T / 熔錫溫度=235°C±5°C, t / 浸錫時間=5+0/-0.5s, Cover / 覆蓋率 ≥95%
Resistance to Soldering Heat 耐焊接熱	T / 熔錫溫度=260°C±5°C, t / 浸錫時間=10s ±1s
Recommended Soldering Parameters 建議焊錫參數	260°C, 10s Max. (solder-reflow / 回流焊)
Storage Conditions 儲存條件	Can be stored for 2 years under tight seal condition at temperature of +10°C~40°C, relative humidity ≤ 75%. 在溫度+10°C~40°C, 相對濕度 ≤ 75% 的密封條件下可存放 2 年。 At most can be kept 30 days at temperature +10°C~40°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~40°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
			
20A	250VAC / 100VDC	100A@ 250V AC	●
25A	250VAC / 100VDC	300A@ 65V AC	●
30A	250VAC / 100VDC	300A@ 100V DC	●
40A	250VAC / 72VDC	500A@ 72V DC	●
50A	250VAC / 72VDC	1000A@ 32V DC	●
60A	250VAC / 72VDC	100A@ 250V AC	●
		300A@ 65V AC	●
		180A@ 72V DC	●
		600A@ 60V DC	●

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
250mA~6.3A	150%	1 Hrs Min. / 最短1小時
	210%	2Min Max. / 最長2分鐘
	275%	400ms Min. 10s Max. / 最短400毫秒, 最長10秒
	400%	150ms Min. 3s Max. / 最短150毫秒, 最長3秒
	1000%	20ms Min. 150ms Max. / 最短20毫秒, 最長150毫秒

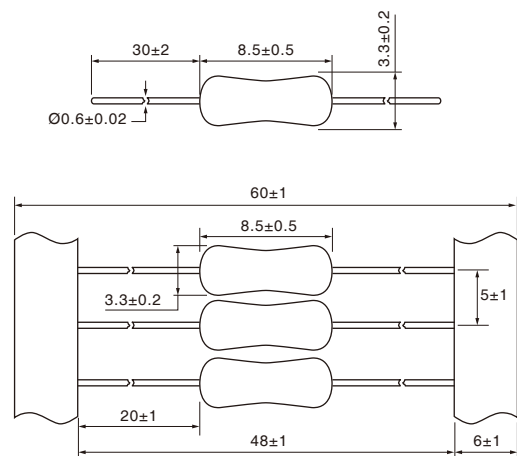
In accordance with IEC60127- 3 standard, sheet3&7 / 遵循 IEC60127-3, 規格單3&7



Product Features / 產品特性

Materials 材質	Body / 本體 : epoxy resin / 環氧樹脂 Lead / 引線 : tinned copper wire / 鍍錫銅線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證			
						
250mA	250V	50A@250V AC	●	◎	◎	◎
315mA	250V		●	◎	◎	◎
400mA	250V		●	◎	◎	◎
500mA	250V		●	◎	◎	◎
630mA	250V		●	◎	◎	◎
800mA	250V		●	●	●	●
1.00A	250V		●	●	●	●
1.25A	250V		●	●	●	●
1.60A	250V		●	●	●	●
2.00A	250V		●	●	●	●
2.50A	250V		●	●	●	●
3.15A	250V		●	●	●	●
4.00A	250V		●	◎	◎	◎
5.00A	250V		●	◎	◎	◎
6.30A	250V	63A@250V	●	◎	◎	◎

◎ Pending / 認證中

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
160mA~6.3A	100%	4 Hrs Min. / 最短4小時
	200%	5s Max. / 最長5秒
	275%	300ms Max. / 最長300毫秒
	400%	30ms Max. / 最長30毫秒
	1000%	4ms Max. / 最長4毫秒

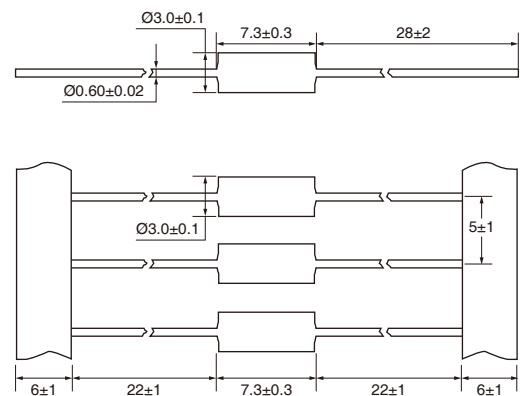
In accordance with IEC60127- 3 standard, sheet2 / 遵循 IEC60127-3, 規格單2



Product Features / 產品特性

Materials 材質	Body / 本體: plastic / 塑料 Lead / 引線: tinned copper wire / 鍍錫銅線 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

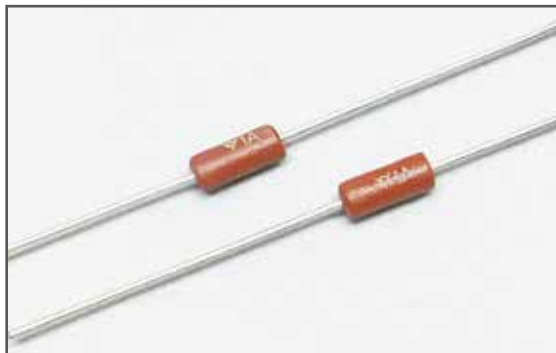
Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證					
								
160mA	125V	160mA~5A 50A@125V AC/DC	●	●		●		
200mA	125V		●	●		●		
250mA	125V		●	●		●		
315mA	125V		●	●		●		
400mA	125V		●	●		●		
500mA	125V		●	●		●		
630mA	125V		●	●		●		
800mA	125V		●	●		●		
1.00A	125V		●	●		●		●
1.25A	125V		●	●		●		●
1.60A	125V		●	●		●		●
2.00A	125V		●	●		●		●
2.50A	125V		●	●		●		●
3.15A	125V		●	●		●		●
4.00A	125V		●	●		●		●
5.00A	125V	●	●		●		●	
6.30A	125V	6.3A 63A@125V AC/DC	●		●		●	●

TCP Series / 3.0×7.3 mm / Time-Lag Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流百分比	Opening Time 熔斷時間
160mA~6.3A	100%	4 Hrs Min. / 最短4小時
	200%	60s Max. / 最長60秒
	1000%	10ms Min. / 最短10毫秒

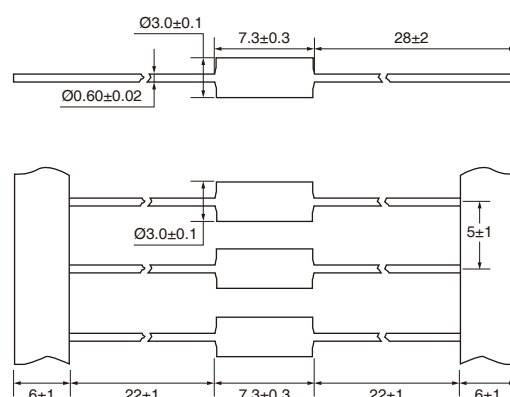
In accordance with UL 248 -1 / -14 standard / 遵循 UL 248-1/-14



Product Features / 產品特性

Materials 材質	Body / 本體 : plastic / 塑料 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
			c(UL)US
160mA	125V	160mA~5A 50A@125V AC/DC	●
200mA	125V		●
250mA	125V		●
315mA	125V		●
400mA	125V		●
500mA	125V		●
630mA	125V		●
800mA	125V		●
1.00A	125V		●
1.25A	125V		●
1.60A	125V		●
2.00A	125V		●
2.50A	125V		●
3.15A	125V		●
4.00A	125V		●
5.00A	125V		●
6.30A	125V		●

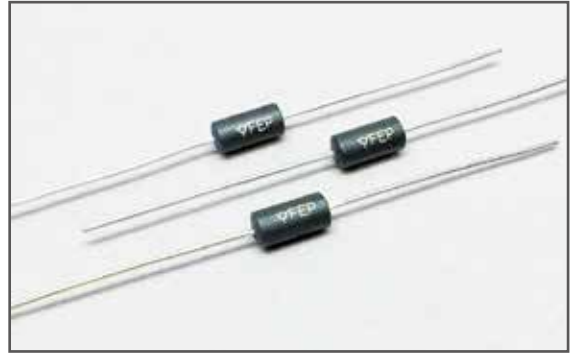
I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
250mA~6.3A	100%	4 Hrs Min. / 最短4小時
	200%	5s Max. / 最長5秒
	275%	300ms Max. / 最長300毫秒
	400%	30ms Max. / 最長30毫秒
	1000%	4ms Max. / 最長4毫秒

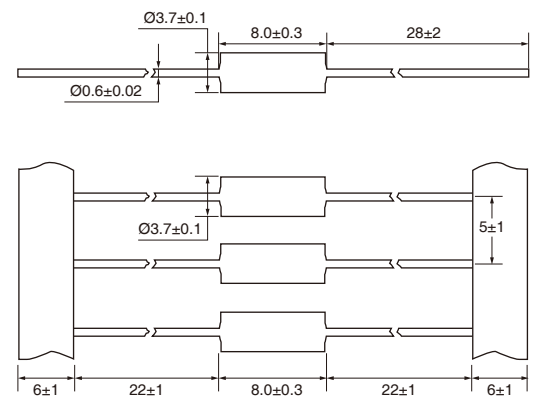
In accordance with IEC60127- 3 standard, sheet2 / 遵循 IEC60127-3, 規格單2

Product Features / 產品特性

Materials 材質	Body / 本體 : plastic / 塑料 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議錫焊參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天下最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



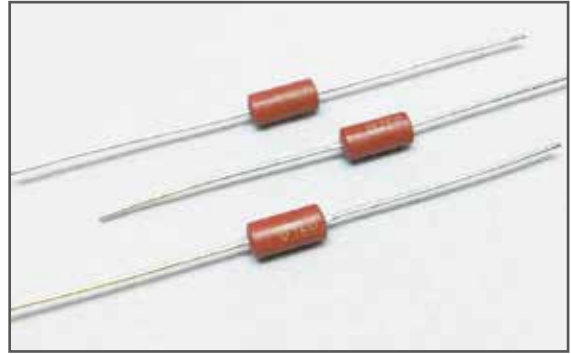
Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證	
			UL	TUV
250mA	250V	250mA~6.3A 50A@250V AC	●	
315mA	250V		●	
400mA	250V		●	
500mA	250V		●	●
630mA	250V		●	●
800mA	250V		●	●
1.00A	250V		●	●
1.25A	250V		●	●
1.60A	250V		●	●
2.00A	250V		●	●
2.50A	250V		●	●
3.15A	250V		●	●
4.00A	250V		●	●
5.00A	250V		●	●
6.30A	250V		●	●

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
500mA~10A	150%	1 Hrs Min. / 最短1小時
	210%	2Min Max. / 最長2分鐘
	275%	400ms Min. 10s Max. / 最短400毫秒, 最長10秒
	400%	150ms Min. 3s Max. / 最短150毫秒, 最長3秒
	1000%	20ms Min. 150ms Max. / 最短20毫秒, 最長150毫秒

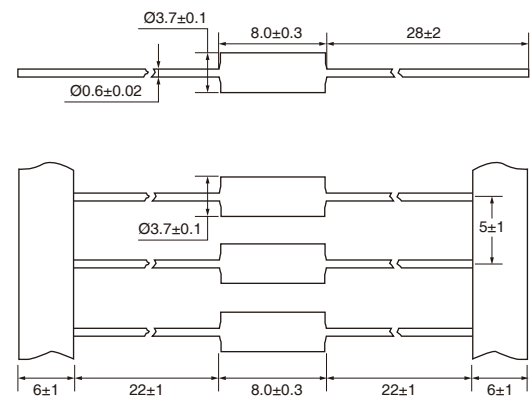
In accordance with IEC60127-3 Standard, sheet 2&4 / 遵循 IEC60127-3, 規格單2&4



Product Features / 產品特性

Materials 材質	Body / 本體 : plastic / 塑料 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議錫焊參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



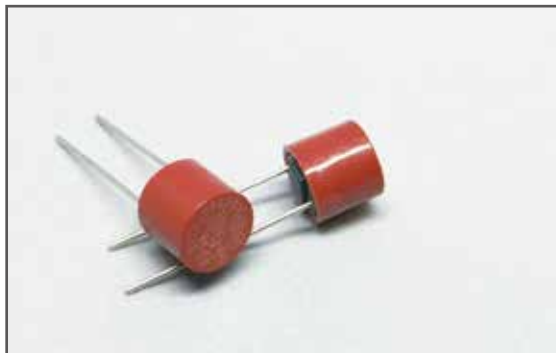
Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證		
					
250mA	250V	250mA~ 3.15A 35A@250V AC	●	●	●
315mA	250V		●	●	●
400mA	250V		●	●	●
500mA	250V		●	●	●
630mA	250V		●	●	●
800mA	250V		●	●	●
1.00A	250V		●	●	●
1.25A	250V		●	●	●
1.60A	250V		●	●	●
2.00A	250V		●	●	●
2.50A	250V		●	●	●
3.15A	250V		●	●	●
4.00A	250V	4.0A~6.3A 10IN@250V AC	●	●	●
5.00A	250V		●	●	●
6.30A	250V		●	●	●

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~6.3A	150%	1 Hrs Min. / 最短1小時
	210%	2 Min Max. / 最長2分鐘
	275%	400ms Min. 10s Max. / 最短400毫秒, 最長10秒
	400%	150ms Min. 3s Max. / 最短150毫秒, 最長3秒
	1000%	20ms Min. 150ms Max. / 最短20毫秒, 最長150毫秒

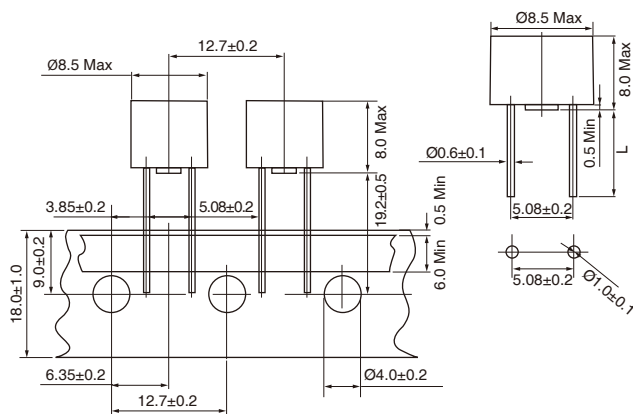
In accordance with IEC60127-3 standard,sheet4 / 遵循 IEC60127-3,規格單4



Product Features / 產品特性

Materials 材質	Body / 本體 : thermoplastic / 耐熱性塑料 UL94 V-0 Lead / 引線 : tinned copper wire / 鍍錫銅線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 1s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 3s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 1~2s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Long Leads / 長引線 : $L=19.2\pm0.5\text{mm}$
Short Leads / 短引線 : $L=4.5\pm0.5\text{mm}$

Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證						
									
100mA	250V/300V	100A@250V AC	●	●		●	●	●	
125mA	250V/300V		●	●		●	●	●	
160mA	250V/300V		●	●		●	●	●	
200mA	250V/300V		●	●		●	●	●	
250mA	250V/300V		●	●		●	●	●	
315mA	250V/300V		●	●		●	●	●	
400mA	250V/300V		●	●		●	●	●	
500mA	250V/300V		●	●		●	●	●	
630mA	250V/300V		●	●		●	●	●	
800mA	250V/300V		●	●		●	●	●	
1.00A	250V/300V	50A/300V AC & 100A/300V AC	●	●		●	●	●	●
1.25A	250V/300V		●	●		●	●	●	●
1.60A	250V/300V		●	●		●	●	●	●
2.00A	250V/300V		●	●		●	●	●	●
2.50A	250V/300V		●	●		●	●	●	●
3.15A	250V/300V		●	●		●	●	●	●
4.00A	250V/300V		●	●		●	●	●	●
5.00A	250V/300V		●		●	●	●	●	●
6.30A	250V/300V		●		●	●	●	●	●

Remark: For CCC , 35A or 10In whichever is greater, tested with AC for the low breaking capacity test.

For CULUS, 100A at 300V AC and 50A at 300V AC.

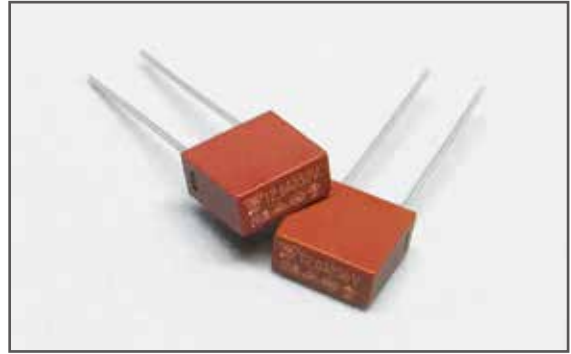
I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~6.3A	150%	1 Hrs Min. / 最短1小時
	210%	2Min Max. / 最長2分鐘
	275%	400ms Min. 10s Max. / 最短400毫秒, 最長10秒
	400%	150ms Min. 3s Max. / 最短150毫秒, 最長3秒
	1000%	20ms Min. 150s Max. / 最短20毫秒, 最長150毫秒

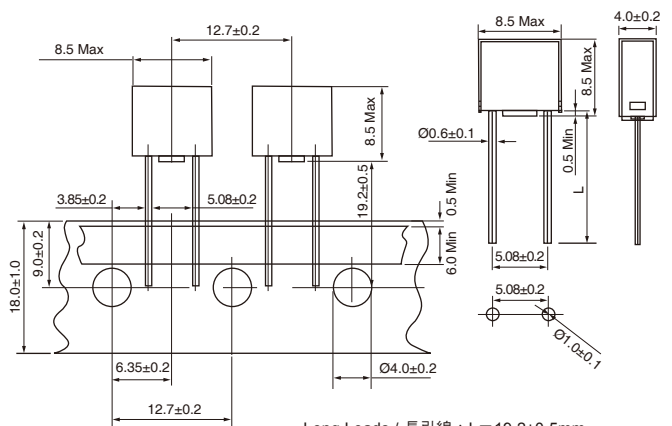
In accordance with IEC60127-3 standard, sheet4 / 遵循 IEC60127-3, 規格單4

Product Features / 產品特性

Materials 材質	Body / 本體: thermoplastic / 耐熱性塑料 UL94 V-0 Lead / 引線: tinned copper wire / 鍍錫銅線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 3s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 1~2s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天下最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)

Long Leads / 長引線: L = 19.2±0.5mm
Short Leads / 短引線: L = 4.5±0.5mm

Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證						
									
100mA	250V/300V	100A@250V AC & 130A@250V AC	●	●	●	●	●	●	●
125mA	250V/300V		●	●	●	●	●	●	●
160mA	250V/300V		●	●	●	●	●	●	●
200mA	250V/300V		●	●	●	●	●	●	●
250mA	250V/300V		●	●	●	●	●	●	●
315mA	250V/300V		●	●	●	●	●	●	●
400mA	250V/300V		●	●	●	●	●	●	●
500mA	250V/300V		●	●	●	●	●	●	●
630mA	250V/300V		●	●	●	●	●	●	●
800mA	250V/300V		●	●	●	●	●	●	●
1.00A	250V/300V	50A@300V AC & 100A@300V AC	●	●	●	●	●	●	●
1.25A	250V/300V		●	●	●	●	●	●	●
1.60A	250V/300V		●	●	●	●	●	●	●
2.00A	250V/300V		●	●	●	●	●	●	●
2.50A	250V/300V		●	●	●	●	●	●	●
3.15A	250V/300V		●	●	●	●	●	●	●
4.00A	250V/300V		●	●	●	●	●	●	●
5.00A	250V/300V		●	●	●	●	●	●	●
6.30A	250V/300V		●	●	●	●	●	●	●
8.00A	250V/300V		●	●	●	●	●	●	●
10.0A	250V/300V		●	●	●	●	●	●	●

Remark: For , , , , , 130A at 250V AC and 100A at 250V AC ;For , , , 50A at 300V ACFor , 100A at 300V AC

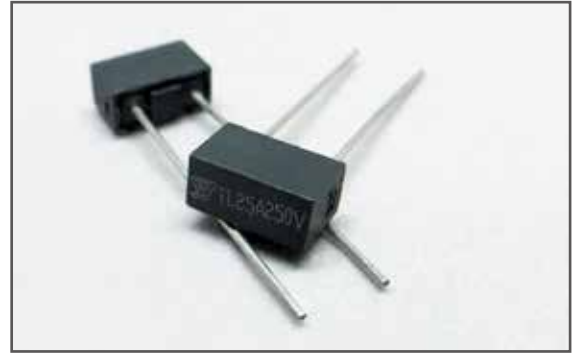
I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~6.3A	150%	1 Hrs Min. / 最短1小時
	210%	2Min Max. / 最長2分鐘
	275%	400ms Min. 10s Max. / 最短400毫秒, 最長10秒
	400%	150ms Min. 3s Max. / 最短150毫秒, 最長3秒
	1000%	20ms Min. 150s Max. / 最短20毫秒, 最長150毫秒

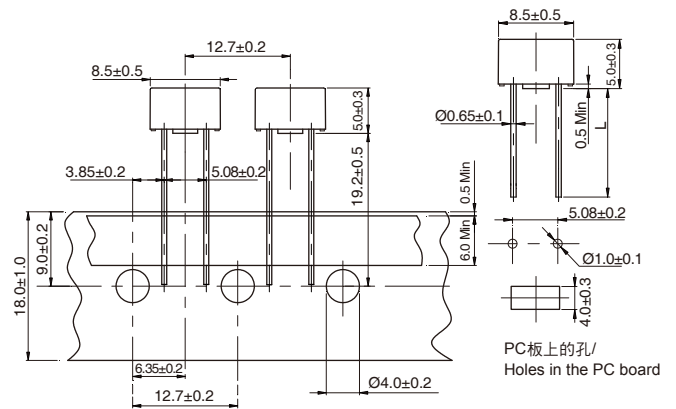
In accordance with IEC60127-3 standard, sheet4 / 遵循 IEC60127-3, 規格單4

Product Features / 產品特性

Materials 材質	Body / 本體: thermoplastic / 耐熱性塑料 UL94 V-0 Lead / 引線: tinned copper wire / 鍍錫銅線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 1s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 3s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 1~2s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密封條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Long Leads / 長引線: L=19.7±1.0mm
Short Leads / 短引線: L=4.5±0.5mm

Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證					
			UL [®] US	VDE	TÜV	CCC	CE	JET
100mA	250V/300V/400V	160A@250V AC 130A@300V AC 50A@400V AC	●	●		●	●	
125mA	250V/300V/400V		●	●		●	●	
160mA	250V/300V/400V		●	●		●	●	
200mA	250V/300V/400V		●	●		●	●	
250mA	250V/300V/400V		●	●		●	●	
315mA	250V/300V/400V		●	●		●	●	
400mA	250V/300V/400V		●	●		●	●	
500mA	250V/300V/400V		●	●		●	●	
630mA	250V/300V/400V		●	●		●	●	
800mA	250V/300V/400V		●	●		●	●	
1.00A	250V/300V/400V		●	●		●	●	●
1.25A	250V/300V/400V		●	●		●	●	●
1.60A	250V/300V/400V		●	●		●	●	●
2.00A	250V/300V/400V		●	●		●	●	●
2.50A	250V/300V/400V		●	●		●	●	●
3.15A	250V/300V/400V		●	●		●	●	●
4.00A	250V/300V/400V		●	●		●	●	●
5.00A	250V/300V/400V		●	●		●	●	●
6.30A	250V/300V		●	●		●	●	●
6.30A	400V		●		◎			

Remark: For UL[®] 160A at 250V AC

◎ Pending / 認證中

For VDE CCC JET 100A at 250V AC

For UL[®] 130A at 300V AC

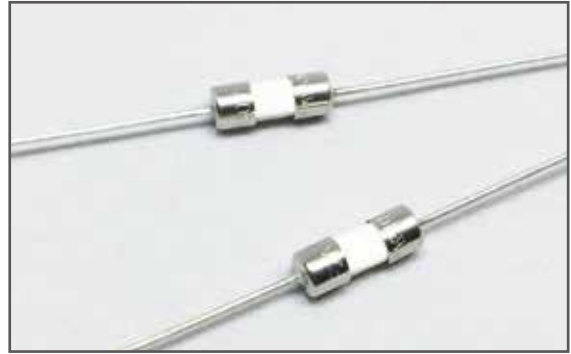
For VDE JET 100A at 300V AC and 50A at 300V AC

For UL[®] VDE 50A at 400V AC

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
500mA~6.3A	210%	30min Max. / 最長30分
	275%	10ms Min. 3s Max. / 最短10毫秒, 最長3秒
	400%	3ms Min. 300ms Max. / 最短3毫秒, 最長300毫秒
	1000%	20ms Max. / 最長20毫秒

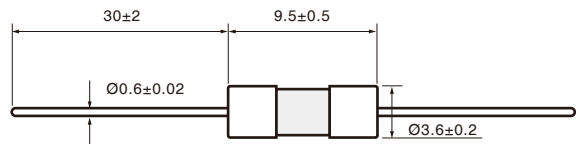
In accordance with IEC60127- 3 standards, sheet3 / 遵循 IEC60127-3, 規格單3



Product Features / 產品特性

Materials 材質	Body / 本體 : ceramic tube / 陶瓷管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 3s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證		
					
500mA	250V	500mA~6.3A 35A or 10In@250V AC	●	●	●
630mA	250V		●	●	●
800mA	250V		●	●	●
1.00A	250V		●	●	●
1.25A	250V		●	●	●
1.60A	250V		●	●	●
2.00A	250V		●	●	●
2.50A	250V		●	●	●
3.15A	250V		●	●	●
4.00A	250V		●	●	●
5.00A	250V		●	●	●
6.30A	250V		●	●	●

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
250mA~6.3A	150%	1 Hrs Min. / 最短1小時
	210%	2Min Max. / 最長2分鐘
	275%	400ms Min. 10s Max. / 最短400毫秒, 最長10秒
	400%	150ms Min. 3s Max. / 最短150毫秒, 最長3秒
	1000%	20ms Min. 150ms Max. / 最短20毫秒, 最長150毫秒

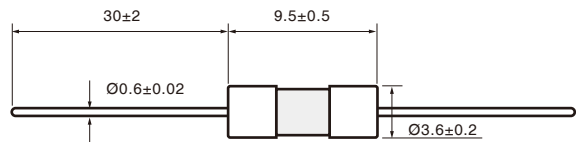
In accordance with IEC60127-3 standard, sheet 4 / 遵循 IEC60127-3, 規格單 4

Product Features / 產品特性

Materials 材質	Body / 本體: ceramic tube / 陶瓷管 Lead / 引線: tinned copper wire / 鍍錫銅線 Cap / 銅帽: brass with nickel plated / 銅鍍鍍 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證		
					
250mA	250V	250mA~3.15A 35A@250V AC	●	●	●
315mA	250V		●	●	●
400mA	250V		●	●	●
500mA	250V		●	●	●
630mA	250V		●	●	●
800mA	250V		●	●	●
1.00A	250V		●	●	●
1.25A	250V		●	●	●
1.60A	250V		●	●	●
2.00A	250V		●	●	●
2.50A	250V		●	●	●
3.15A	250V		●	●	●
4.00A	250V	4A~6.3A 10IN@250V AC	●	●	●
5.00A	250V		●	●	●
6.30A	250V		●	●	●

ICP Series / 3.6×10 mm / Time-Lag Type

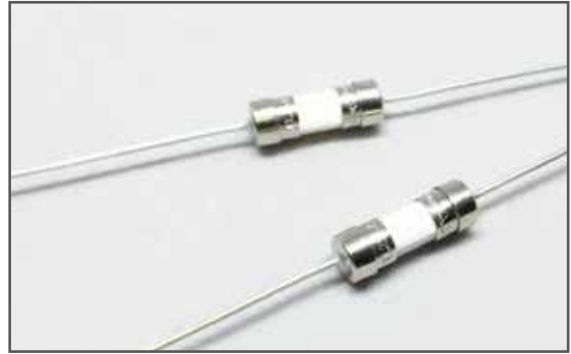
I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
250mA~6.3A	150%	1 Hrs Min. / 最短1小時
	210%	2Min Max. / 最長2分鐘
	275%	400ms Min. 10s Max. / 最短400毫秒, 最長10秒
	400%	150ms Min. 3s Max. / 最短150毫秒, 最長3秒
	1000%	20ms Min. 150ms Max. / 最短20毫秒, 最長150毫秒

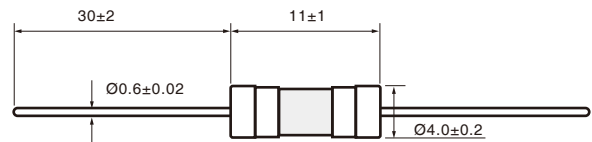
In accordance with IEC60127-3 standard, sheet 2&4 / 遵循 IEC60127-3, 規格單2&4

Product Features / 產品特性

Materials 材質	Body / 本體: ceramic tube / 陶瓷管 Lead / 引線: tinned copper wire / 鍍錫銅線 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證				
			UL US	VDE	S	IC	CQC
250mA	250V	250mA~3.15A 35A@250V AC	●	●	●	●	●
315mA	250V		●	●	●	●	●
400mA	250V		●	●	●	●	●
500mA	250V		●	●	●	●	●
630mA	250V		●	●	●	●	●
800mA	250V		●	●	●	●	●
1.00A	250V		●	●	●	●	●
1.25A	250V		●	●	●	●	●
1.60A	250V		●	●	●	●	●
2.00A	250V		●	●	●	●	●
2.50A	250V		●	●	●	●	●
3.15A	250V		●	●	●	●	●
4.00A	250V	4A~6.3A 10IN@250V AC	●	●	●	●	●
5.00A	250V		●	●	●	●	●
6.30A	250V		●	●	●	●	●

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
125mA~3.5A	100%	4 Hrs Min. / 最短4小時
	135%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒
	1000%	10ms Min. / 最短10毫秒

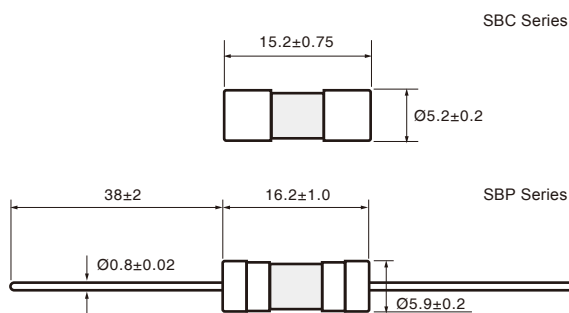
In accordance with UL 248-1 / -14 standard / 遵循 UL 248-1 / -14

Product Features / 產品特性

Materials 材質	Body / 本體: ceramic tube / 陶瓷管 Lead / 引線: tinned copper wire / 鍍錫銅線 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密封條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Type 型號	Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證	
					
SBC/SBP	125mA	125V/250V/350V	125mA~3.5A 10000A@125V AC	●	
SBC/SBP	160mA	125V/250V/350V		●	
SBC/SBP	200mA	125V/250V/350V		●	
SBC/SBP	250mA	125V/250V/350V		●	
SBC/SBP	300mA	125V/250V/350V		●	
SBC/SBP	315mA	125V/250V/350V		●	
SBC/SBP	350mA	125V/250V/350V	125mA~1A 35A@250V AC	●	
SBC/SBP	375mA	125V/250V/350V		●	
SBC/SBP	400mA	125V/250V/350V		●	
SBC/SBP	500mA	125V/250V/350V		●	
SBC/SBP	600mA	125V/250V/350V		●	
SBC/SBP	630mA	125V/250V/350V		●	
SBC/SBP	750mA	125V/250V/350V	1.1A~3.5A 100A@250V AC	●	
SBC/SBP	800mA	125V/250V/350V		●	
SBC/SBP	1.00A	125V/250V/350V		●	●
SBC/SBP	1.25A	125V/250V/350V		●	●
SBC/SBP	1.50A	125V/250V/350V		●	●
SBC/SBP	1.60A	125V/250V/350V		●	●
SBC/SBP	2.00A	125V/250V/350V	125mA~3.5A 100A@350V AC	●	●
SBC/SBP	2.50A	125V/250V/350V		●	●
SBC/SBP	3.00A	125V/250V/350V		●	●
SBC/SBP	3.15A	125V/250V/350V		●	●
SBC/SBP	3.50A	125V/250V/350V		●	●

Remark: *PSE  approved 125V & 250V only.

SCC/SCP Series / 5.2×20 mm / Time-Lag Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~10A	100%	4 Hrs Min. / 最短4小時
	135%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒
	1000%	10ms Min. / 最短10毫秒

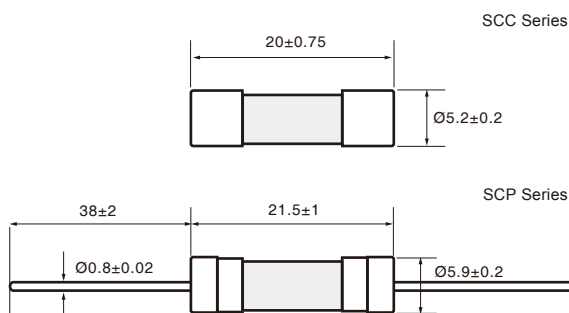
In accordance with UL 248-1 / -14 standard / 遵循 UL 248-1 / -14

Product Features / 產品特性

Materials 材質	Body / 本體: ceramic tube / 陶瓷管 Lead / 引線: tinned copper wire / 鍍錫銅線 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密封條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Type 型號	Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證	
				UL US	PS E JET
SCC/SCP	100mA	125V/250V	100mA~10A 10000A@125V AC	●	
SCC/SCP	125mA	125V/250V		●	
SCC/SCP	160mA	125V/250V		●	
SCC/SCP	200mA	125V/250V		●	
SCC/SCP	250mA	125V/250V		●	
SCC/SCP	300mA	125V/250V		●	
SCC/SCP	315mA	125V/250V		●	
SCC/SCP	350mA	125V/250V		●	
SCC/SCP	375mA	125V/250V		●	
SCC/SCP	400mA	125V/250V		●	
SCC/SCP	500mA	125V/250V	100mA~1A 35A@250V AC	●	
SCC/SCP	600mA	125V/250V		●	
SCC/SCP	630mA	125V/250V		●	
SCC/SCP	750mA	125V/250V		●	
SCC/SCP	800mA	125V/250V		●	
SCC/SCP	1.00A	125V/250V		●	●
SCC/SCP	1.25A	125V/250V		●	●
SCC/SCP	1.50A	125V/250V		●	●
SCC/SCP	1.60A	125V/250V		●	●
SCC/SCP	2.00A	125V/250V		●	●
SCC/SCP	2.50A	125V/250V	1.1A~3.5A 100A@250V AC	●	●
SCC/SCP	3.00A	125V/250V		●	●
SCC/SCP	3.15A	125V/250V		●	●
SCC/SCP	3.50A	125V/250V		●	●
SCC/SCP	4.00A	125V/250V		●	●
SCC/SCP	5.00A	125V/250V		●	●
SCC/SCP	6.00A	125V/250V		●	●
SCC/SCP	6.30A	125V/250V		●	●
SCC/SCP	7.00A	125V/250V		●	●
SCC/SCP	8.00A	125V/250V		●	●
SCC/SCP	10.0A	125V/250V	3.6A~10A 200A@250V AC	●	●
SCC/SCP	10.0A	125V/250V		●	●
SCC/SCP	10.0A	125V/250V		●	●
SCC/SCP	10.0A	125V/250V		●	●
SCC/SCP	10.0A	125V/250V		●	●
SCC/SCP	10.0A	125V/250V		●	●
SCC/SCP	10.0A	125V/250V		●	●
SCC/SCP	10.0A	125V/250V		●	●
SCC/SCP	10.0A	125V/250V		●	●
SCC/SCP	10.0A	125V/250V		●	●

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
250mA~6.3A	150%	1 Hrs Min. / 最短1小時
8A~15A		30min Min. / 最短30分鐘
250mA~15A	210%	30min Max. / 最長30分鐘
250mA~4A	275%	10ms Min. 2s Max. / 最短10毫秒, 最長2秒
5A~6.3A		10ms Min. 3s Max. / 最短10毫秒, 最長3秒
8A~15A		40ms Min. 20s Max. / 最短40毫秒, 最長20秒
250mA~6.3A	400%	3ms Min. 300ms Max. / 最短3毫秒, 最長300毫秒
8.0A~15A		10ms Min. 1s Max. / 最短10毫秒, 最長1秒
250mA~6.3A	1000%	20ms Max. / 最長20毫秒
8.0A~15A		30ms Max. / 最長30毫秒

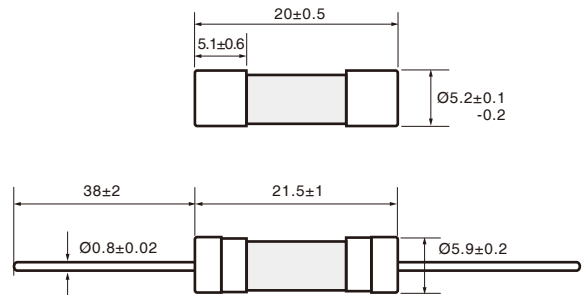
In accordance with IEC60127-2 standard, sheet1 / 遵循 IEC60127-2, 規格單1



Product Features / 產品特性

Materials 材質	Body / 本體: ceramic tube / 陶瓷管 Lead / 引線: tinned copper wire / 鍍錫銅線 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天下最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證					
			UL [®] US	VDE	VDE	CCC	PS	JET
250mA	250V	250mA~15A 1500A@250V AC	●	●		●	●	
315mA	250V		●	●		●	●	
400mA	250V		●	●		●	●	
500mA	250V		●	●		●	●	
630mA	250V		●	●		●	●	
800mA	250V		●	●		●	●	
1.00A	250V		●	●		●	●	●
1.25A	250V		●	●		●	●	●
1.60A	250V		●	●		●	●	●
2.00A	250V		●	●		●	●	●
2.50A	250V		●	●		●	●	●
3.15A	250V		●	●		●	●	●
4.00A	250V		●	●		●	●	●
5.00A	250V		●	●		●	●	●
6.30A	250V		●	●		●	●	●
8.00A	250V		●	●				●
10.0A	250V		●	●				●
12.0A	250V		●		●			●
15.0A	250V		●		●			●

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
8A~16A	210%	30min Max. / 最長30分
	275%	40ms Min. 20s Max. / 最短40毫秒,最長20秒
	400%	10ms Min. 1s Max. / 最短10毫秒,最長1秒
	1000%	30ms Max. / 最長30毫秒

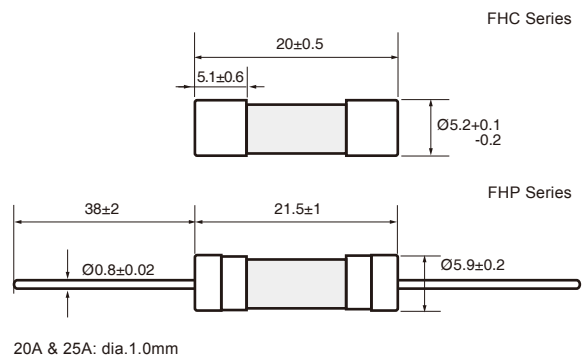
In accordance with IEC60127-7 standard / 遵循 IEC60127-7



Product Features / 產品特性

Materials 材質	Body / 本體: ceramic tube / 陶瓷管 Lead / 引線: tinned copper wire / 鍍錫銅線 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證	
				
8.00A	420VAC/VDC	300A@420V AC/DC	●	●
10.0A	420VAC/VDC		●	●
12.5A	420VAC/VDC		●	●
15.0A	420VAC/VDC		●	●
16.0A	420VAC/VDC		●	●
20.0A	420VAC/VDC		●	◎
25.0A	420VAC/VDC		●	◎

◎ Pending / 認證中

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
200mA~6.3A	150%	1 Hr Min. / 最短1小時
8A~16A		30min Min. / 最短30分鐘
200mA~16A	210%	30min Max. / 最長30分鐘
200mA~800mA	275%	250ms Min. 80s Max. / 最短250毫秒, 最長80秒
1A~16A		750ms Min. 80s Max. / 最短750毫秒, 最長80秒
200mA~800mA	400%	50ms Min. 5s Max. / 最短50毫秒, 最長5秒
1A~3.15A		95ms Min. 5s Max. / 最短95毫秒, 最長5秒
4A~16A		150ms Min. 5s Max. / 最短150毫秒, 最長5秒
200mA~800mA	1000%	5ms Min. 150ms Max. / 最短5毫秒, 最長150毫秒
1A~16A		10ms Min. 150ms Max. / 最短10毫秒, 最長150毫秒

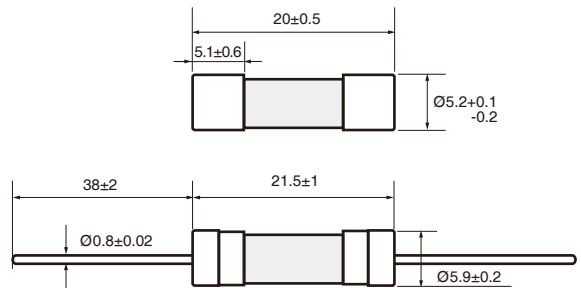
In accordance with IEC60127-2 standard, sheet5 / 遵循 IEC60127-2, 規格單5

Product Features / 產品特性

Materials 材質	Body / 本體 : ceramic tube / 陶瓷管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證									
			UL	DVE	VDE	TUV	CCC	CQC	CEC	CCC	CCC	CCC
200mA	250V	200mA~16A 1500A@250V AC	●	●								
250mA	250V		●	●								
315mA	250V		●	●								
400mA	250V		●	●								
500mA	250V		●	●								
630mA	250V		●	●								
800mA	250V		●	●								
1.00A	250V		●	●			●	●		●	●	
1.25A	250V		●	●			●	●		●	●	
1.60A	250V		●	●			●	●		●	●	
2.00A	250V		●	●			●	●		●	●	
2.50A	250V		●	●			●	●		●	●	
3.15A	250V		●	●			●	●		●	●	
4.00A	250V		●	●			●	●		●	●	
5.00A	250V		●	●			●	●		●	●	
6.30A	250V		●	●			●	●		●	●	
8.00A	250V		●	●							●	
10.0A	250V		●	●							●	
12.0A	250V		●		●						●	
12.5A	250V		●						●		●	
15.0A	250V		●		●						●	
16.0A	250V		◎			◎			◎			

◎ Pending / 認證中

TSC+P Series / 5.2×20 mm / Time-Lag Type

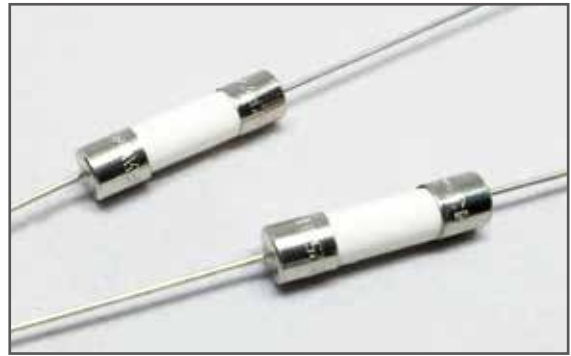
I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
200mA~6.3A	150%	1 Hr Min. / 最短1小時
8A~16A		30min Min. / 最短30分鐘
200mA~16A	210%	30min Max. / 最長30分鐘
200mA~800mA	275%	250ms Min. 80s Max. / 最短250毫秒,最長80秒
1A~16A		750ms Min. 80s Max. / 最短750毫秒,最長80秒
200mA~800mA	400%	50ms Min. 5s Max. / 最短50毫秒,最長5秒
1A~3.15A		95ms Min. 5s Max. / 最短95毫秒,最長5秒
4A~16A		150ms Min. 5s Max. / 最短150毫秒,最長5秒
200mA~800mA	1000%	5ms Min. 150ms Max. / 最短5毫秒,最長150毫秒
1A~16A		10ms Min. 150ms Max. / 最短10毫秒,最長150毫秒

In accordance with IEC60127-2 standard, sheet5 / 遵循 IEC60127-2, 規格單5

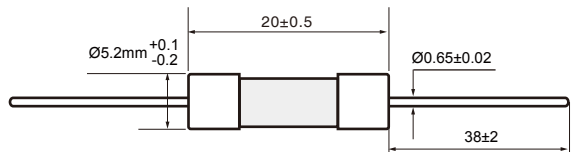
Product Features / 產品特性

Materials 材質	Body / 本體 : ceramic tube / 陶瓷管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C,相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。

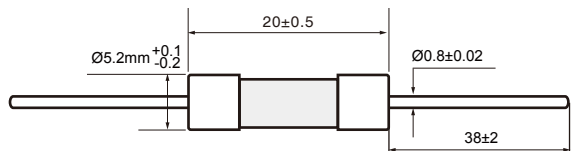


Dimensions / 尺寸圖 (Unit / 單位:mm)

6.3A(含)以下



6.3A 以上



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證					
								
200mA	250V	200mA~16A 1500A@250V AC	●					
250mA	250V		●					
315mA	250V		●					
400mA	250V		●					
500mA	250V		●					
630mA	250V		●					
800mA	250V		●					
1.00A	250V		●	●		●	●	●
1.25A	250V		●	●		●	●	●
1.60A	250V		●	●		●	●	●
2.00A	250V		●	●		●	●	●
2.50A	250V		●	●		●	●	●
3.15A	250V		●	●		●	●	●
4.00A	250V		●	●		●	●	●
5.00A	250V		●	●		●	●	●
6.30A	250V		●	●		●	●	●
8.00A	250V		●		◎	●	●	
10.0A	250V		●		◎	●	●	
12.5A	250V		●		◎	●	●	
15.0A	250V		●				●	
16.0A	250V		◎		◎	◎		

◎ Pending / 認證中

TSS+P Series / 5.6×19.5 mm / Time-Lag Type

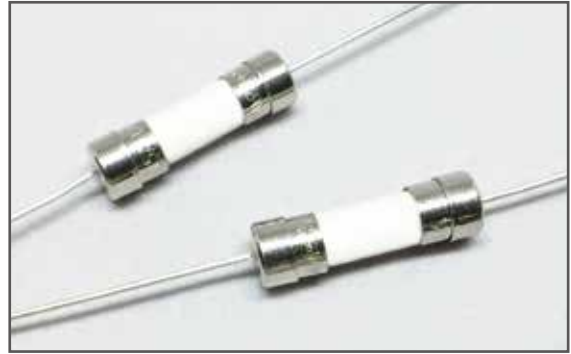
I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
3.15A	150%	1 Hr Min. / 最短1小時
4.0A		1 Hr Min. / 最短1小時
3.15A	210%	30min Max. / 最長30分鐘
4.0A		30min Max. / 最長30分鐘
3.15A	275%	750ms Min. 80s Max. / 最短750毫秒, 最長80秒
4.0A		750ms Min. 80s Max. / 最短750毫秒, 最長80秒
3.15A	400%	95ms Min. 5s Max. / 最短95毫秒, 最長5秒
4.0A		150ms Min. 5s Max. / 最短150毫秒, 最長5秒
3.15A	1000%	10ms Min. 150ms Max. / 最短10毫秒, 最長150毫秒
4.0A		10ms Min. 150ms Max. / 最短10毫秒, 最長150毫秒

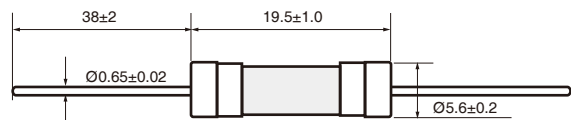
In accordance with IEC60127-2 standard, sheet5 / 遵循 IEC60127-2, 規格單5

Product Features / 產品特性

Materials 材質	Body / 本體: ceramic tube / 陶瓷管 Lead / 引線: tinned copper wire / 鍍錫銅線 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證				
							
3.15A	250V	3.15A~4A	●	●	●	●	●
4.00A	250V	1500A@250V AC	●	●	●	●	●

MTC Series / 6.35×31.75 mm / Time-Lag Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
15A、20A、25A、30A	135%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒

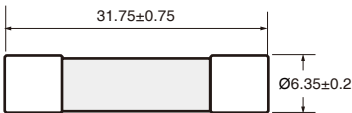
In accordance with UL 248-1 / -14 standard / 遵循 UL 248-1 / -14



Product Features / 產品特性

Materials 材質	Body / 本體: ceramic tube / 陶瓷管 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
15A	250V	15A, 20A~1500A@250V AC 25A, 30A~500A@250V AC	
20A	250V		●
25A	250V		●
30A	250V		●

MTP Series / 6.35×31.75 mm / Time-Lag Type

I-T Characteristics / 時間-電流特性

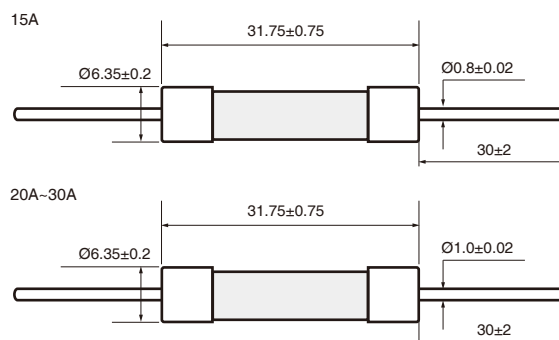
Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
15A、20A、25A、30A	135%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒
	1000%	150s Max. / 最長150秒

Product Features / 產品特性

Materials 材質	Body / 本體 : ceramic tube / 陶瓷管 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天下最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證	
				
15A	250V	15A, 20A~1500A@250V AC 25A, 30A~500A@250V AC	●	●
20A	250V		●	●
25A	250V		●	●
30A	250V		●	●

FAP Series / 3.6×10 mm, Fast Acting Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~6.3A	100%	4 Hrs Min. / 最短4小時
	200%	60s Max. / 最長60秒

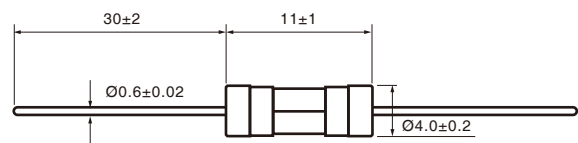
In accordance with UL 248 -1 / -14 standard / 遵循UL 248 -1 / -14

Product Features / 產品特性

Materials 材質	Body / 本體 : glass tube / 玻璃管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
			UL US
100mA	125V/250V	100mA~6.3A 50A@125V/250V AC	●
125mA	125V/250V		●
160mA	125V/250V		●
200mA	125V/250V		●
250mA	125V/250V		●
300mA	125V/250V		●
315mA	125V/250V		●
350mA	125V/250V		●
375mA	125V/250V		●
400mA	125V/250V		●
500mA	125V/250V		●
600mA	125V/250V		●
630mA	125V/250V		●
750mA	125V/250V		●
800mA	125V/250V		●
1.00A	125V/250V		●
1.25A	125V/250V		●
1.50A	125V/250V		●
1.60A	125V/250V		●
2.00A	125V/250V		●
2.50A	125V/250V		●
3.00A	125V/250V		●
3.15A	125V/250V		●
3.50A	125V/250V		●
4.00A	125V/250V		●
5.00A	125V/250V		●
6.30A	125V/250V		●

TAP Series / 3.6×10 mm, Time-Lag Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~6.3A	100%	4 Hrs Min. / 最短4小時
	200%	60s Max. / 最長60秒
	500%	90ms Min. / 最短90毫秒
	1000%	10ms Min. / 最短10毫秒

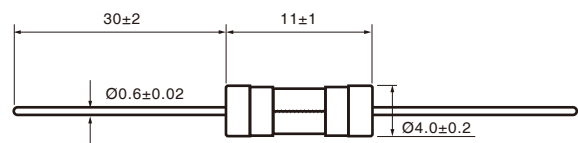
In accordance with UL 248-1 / -14 standards / 遵循UL 248-1 / -14

Product Features / 產品特性

Materials 材質	Body / 本體 : glass tube / 玻璃管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
			UL US
100mA	125V/250V	100mA~6.3A 50A@125V/250V AC	●
125mA	125V/250V		●
160mA	125V/250V		●
200mA	125V/250V		●
250mA	125V/250V		●
300mA	125V/250V		●
315mA	125V/250V		●
350mA	125V/250V		●
375mA	125V/250V		●
400mA	125V/250V		●
500mA	125V/250V		●
600mA	125V/250V		●
630mA	125V/250V		●
750mA	125V/250V		●
800mA	125V/250V		●
1.00A	125V/250V		●
1.25A	125V/250V		●
1.50A	125V/250V		●
1.60A	125V/250V		●
2.00A	125V/250V		●
2.50A	125V/250V		●
3.00A	125V/250V		●
3.15A	125V/250V		●
3.50A	125V/250V		●
4.00A	125V/250V		●
5.00A	125V/250V		●
6.00A	125V/250V		●
6.30A	125V/250V		●

BGF/BFP Series / 4.6×16 mm, Fast Acting Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~7A	100%	4 Hrs Min. / 最短4小時
	135%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒

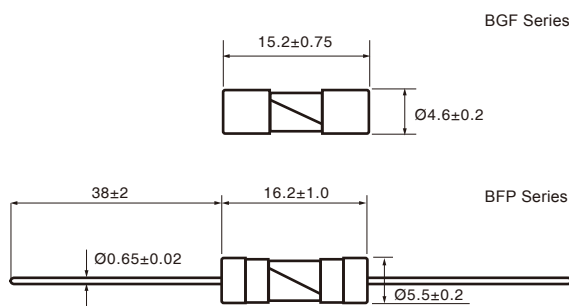
In accordance with UL 248-1 / -14 standard / 遵循UL 248-1 / -14

Product Features / 產品特性

Materials 材質	Body / 本體 : glass tube / 玻璃管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議錫焊參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Type 型號	Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證	
				UL US	PS ET
BGF/BFP	100mA	125V/250V	100mA~7A 10000A@125V AC	●	
BGF/BFP	125mA	125V/250V		●	
BGF/BFP	150mA	125V/250V		●	
BGF/BFP	160mA	125V/250V		●	
BGF/BFP	200mA	125V/250V		●	
BGF/BFP	250mA	125V/250V		●	
BGF/BFP	300mA	125V/250V		●	
BGF/BFP	315mA	125V/250V		●	
BGF/BFP	350mA	125V/250V		●	
BGF/BFP	375mA	125V/250V		●	
BGF/BFP	400mA	125V/250V	100mA~1A 35A@250V AC	●	
BGF/BFP	500mA	125V/250V		●	
BGF/BFP	600mA	125V/250V		●	
BGF/BFP	630mA	125V/250V		●	
BGF/BFP	750mA	125V/250V		●	
BGF/BFP	800mA	125V/250V		●	
BGF/BFP	1.00A	125V/250V		●	●
BGF/BFP	1.25A	125V/250V		●	●
BGF/BFP	1.50A	125V/250V		●	●
BGF/BFP	1.60A	125V/250V		●	●
BGF/BFP	2.00A	125V/250V	1.1A~3.5A 100A@250V AC	●	●
BGF/BFP	2.50A	125V/250V		●	●
BGF/BFP	3.00A	125V/250V		●	●
BGF/BFP	3.15A	125V/250V		●	●
BGF/BFP	3.50A	125V/250V		●	●
BGF/BFP	4.00A	125V		●	●
BGF/BFP	5.00A	125V		●	●
BGF/BFP	6.00A	125V		●	●
BGF/BFP	6.30A	125V		●	●
BGF/BFP	7.00A	125V		●	●
BFP	3.00A	300V	50A@300V AC	●	

BGT/BTP Series / 4.6×16 mm, Time-Lag Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~7A	100%	4 Hrs Min. / 最短4小時
	135%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒
	1000%	10ms Min. / 最短10毫秒

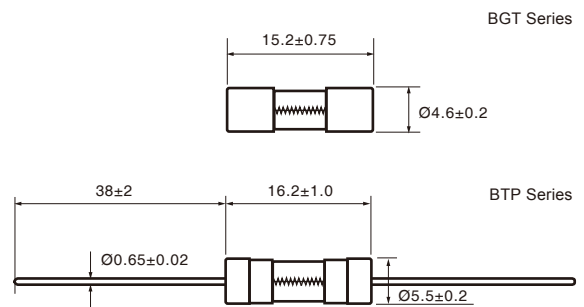
In accordance with UL 248-1 / -14 standard / 遵循UL 248-1 / -14

Product Features / 產品特性

Materials 材質	Body / 本體: glass tube / 玻璃管 Lead / 引線: tinned copper wire / 鍍錫銅線 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密封條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Type 型號	Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證	
					
BGT/BTP	100mA	125V/250V	100mA~7A 10000A@125V AC	●	
BGT/BTP	125mA	125V/250V		●	
BGT/BTP	150mA	125V/250V		●	
BGT/BTP	160mA	125V/250V		●	
BGT/BTP	200mA	125V/250V		●	
BGT/BTP	250mA	125V/250V		●	
BGT/BTP	300mA	125V/250V		●	
BGT/BTP	315mA	125V/250V		●	
BGT/BTP	350mA	125V/250V		●	
BGT/BTP	375mA	125V/250V		●	
BGT/BTP	400mA	125V/250V	100mA~1A 35A@250V AC	●	
BGT/BTP	500mA	125V/250V		●	
BGT/BTP	600mA	125V/250V		●	
BGT/BTP	630mA	125V/250V		●	
BGT/BTP	750mA	125V/250V		●	
BGT/BTP	800mA	125V/250V		●	
BGT/BTP	1.00A	125V/250V	1.1A~3.5A 100A@250V AC	●	●
BGT/BTP	1.25A	125V/250V		●	●
BGT/BTP	1.50A	125V/250V		●	●
BGT/BTP	1.60A	125V/250V		●	●
BGT/BTP	2.00A	125V/250V		●	●
BGT/BTP	2.50A	125V/250V		●	●
BGT/BTP	3.00A	125V/250V	3.6A~7A 200A@250V AC	●	●
BGT/BTP	3.15A	125V/250V		●	●
BGT/BTP	3.50A	125V/250V		●	●
BGT/BTP	4.00A	125V/250V		●	●
BGT/BTP	5.00A	125V/250V		●	●
BGT/BTP	6.00A	125V/250V		●	●
BGT/BTP	6.30A	125V/250V		●	●
BGT/BTP	7.00A	125V/250V		●	●
BGT/BTP				●	●
BGT/BTP				●	●

FSD Series / 5.2×20 mm, Fast Acting Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
200mA~6.3A	150%	1 Hr Min. / 最短1小時
8A~15A		30min Min. / 最短30分鐘
200mA~15A	210%	30min Max. / 最長30分鐘
200mA~15A	275%	50ms Min. 2s Max. / 最短50毫秒, 最長2秒
200mA~6.3A	400%	10ms Min. 300ms Max. / 最短10毫秒, 最長300毫秒
8.0A~15A		10ms Min. 400ms Max. / 最短10毫秒, 最長400毫秒
200mA~6.3A	1000%	20ms Max. / 最長20毫秒
8.0A~15A		40ms Max. / 最長40毫秒

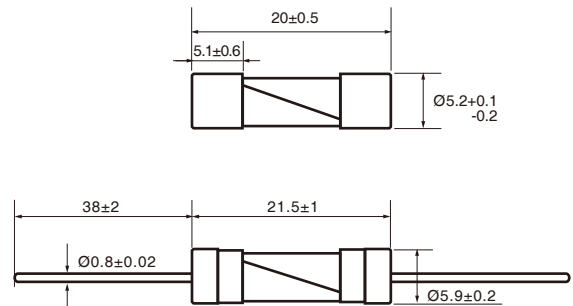
In accordance with IEC60127-2 standard, sheet2 / 遵循IEC60127-2, 規格單2



Product Features / 產品特性

Materials 材質	Body / 本體: glass tube / 玻璃管 Lead / 引線: tinned copper wire / 鍍錫銅線 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密封條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證						
			UL	VDE	VDE	CCC	KC	PS	JET
200mA	250V	200mA~3.15A 35A@250V AC	●	●		●	●	●	
250mA	250V		●	●		●	●	●	
315mA	250V		●	●		●	●	●	
400mA	250V		●	●		●	●	●	
500mA	250V		●	●		●	●	●	
630mA	250V		●	●		●	●	●	
800mA	250V		●	●		●	●	●	
1.00A	250V		●	●		●	●	●	●
1.25A	250V		●	●		●	●	●	●
1.60A	250V		●	●		●	●	●	●
2.00A	250V		●	●		●	●	●	●
2.50A	250V		●	●		●	●	●	●
3.15A	250V		●	●		●	●	●	●
4.00A	250V	4A~15A 10IN@250V AC	●	●		●	●	●	●
5.00A	250V		●	●		●	●	●	●
6.30A	250V		●	●		●	●	●	●
8.00A	125V/250V		●	●			●		
10.0A	125V/250V		●	●			●		
12.0A	125V/250V		●		●		●		
15.0A	125V/250V		●		●		●		
					●		●		

Remark: *FSD 8A~15A approved KC 250V only. *125V Voltage only for UL, VDE and VDE.

TSD Series / 5.2×20 mm, Time-Lag Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~6.3A	150%	1 Hr Min. / 最短1小時
100mA~6.3A	210%	2min Max. / 最長2分鐘
100mA	275%	200ms Min. 10s Max. / 最短200毫秒, 最長10秒
125mA~6.3A		600ms Min. 10s Max. / 最短600毫秒, 最長10秒
100mA	400%	40ms Min. 3s Max. / 最短40毫秒, 最長3秒
125mA~6.3A		150ms Min. 3s Max. / 最短150毫秒, 最長3秒
100mA	1000%	10ms Min. 300ms Max. / 最短10毫秒, 最長300毫秒
125mA~6.3A		20ms Min. 300ms Max. / 最短20毫秒, 最長300毫秒

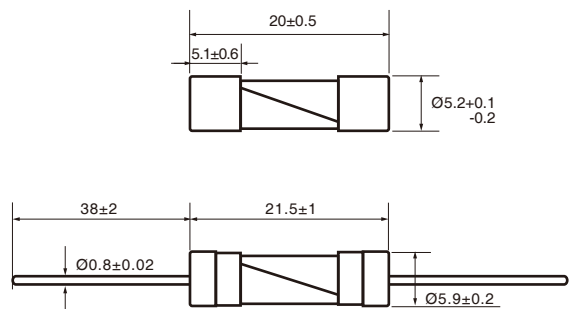
In accordance with IEC60127-2 standard, sheet3 / 遵循IEC60127-2, 規格單3



Product Features / 產品特性

Materials 材質	Body / 本體: glass tube / 玻璃管 Lead / 引線: tinned copper wire / 鍍錫銅線 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證					
			UL	DE	CS	CCC	CE	JET
100mA	Obsolete & Replaced by TMD 100mA		●	●	●	●	●	
125mA	Obsolete & Replaced by TMD 125mA		●	●	●	●	●	
200mA	Obsolete & Replaced by TMD 200mA		●	●	●	●	●	
250mA	Obsolete & Replaced by TMD 250mA		●	●	●	●	●	
315mA	Obsolete & Replaced by TMD 315mA		●	●	●	●	●	
400mA	Obsolete & Replaced by TMD 400mA		●	●	●	●	●	
500mA	Obsolete & Replaced by TMD 500mA		●	●	●	●	●	
630mA	250V	630mA~3.15A 35A@250V AC	●	●	●	●	●	
800mA	250V		●	●	●	●	●	
1.00A	250V		●	●	●	●	●	●
1.25A	250V		●	●	●	●	●	●
1.60A	250V		●	●	●	●	●	●
2.00A	250V		●	●	●	●	●	●
2.50A	250V		●	●	●	●	●	●
3.15A	250V	4A~6.3A 10IN@250V AC	●	●	●	●	●	●
4.00A	250V		●	●	●	●	●	●
5.00A	250V		●	●	●	●	●	●
6.30A	250V		●	●	●	●	●	●

TMD Series / 5.2×20 mm, Time-Lag Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~6.3A	150%	1 Hr Min. / 最短1小時
8A~15A		30min Min. / 最短30分鐘
100mA~15A	210%	2min Max. / 最長2分鐘
100mA	275%	200ms Min. 10s Max. / 最短200毫秒,最長10秒
125mA~15A		600ms Min. 10s Max. / 最短600毫秒,最長10秒
100mA	400%	40ms Min. 3s Max. / 最短40毫秒,最長3秒
125mA~15A		150ms Min. 3s Max. / 最短150毫秒,最長3秒
100mA	1000%	10ms Min. 300ms Max. / 最短10毫秒,最長300毫秒
125mA~15A		20ms Min. 300ms Max. / 最短20毫秒,最長300毫秒

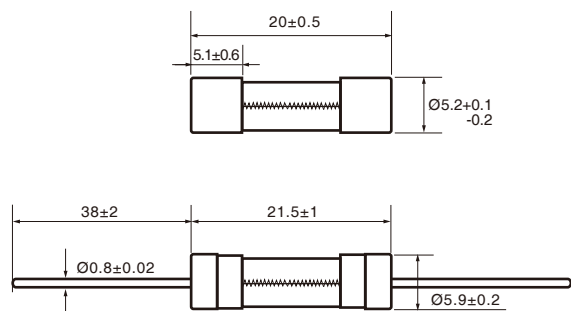
In accordance with IEC60127-2 standard, sheet3 / 遵循IEC60127-2, 規格單3



Product Features / 產品特性

Materials 材質	Body / 本體: glass tube / 玻璃管 Lead / 引線: tinned copper wire / 鍍錫銅線 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Type 型號	Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證							
				UL	D'E	VDE	CCC	CQC	CCC	PS	JET
TMD	100mA	250V	100mA~3.15A 35A@250V AC	●	●		●	●		●	
TMD	125mA	250V		●	●		●	●		●	
TMD	160mA	250V		●	●		●	●		●	
TMD	200mA	250V		●	●		●	●		●	
TMD	250mA	250V		●	●		●	●		●	
TMD	315mA	250V		●	●		●	●		●	
TMD	400mA	250V		●	●		●	●		●	
TMD	500mA	250V		●	●		●	●		●	
TMD	630mA	250V		●	●		●	●		●	
TMD	800mA	250V		●	●		●	●		●	
TMD	1.00A	250V		●	●		●	●		●	●
TMD	1.25A	250V		●	●		●	●		●	●
TMD	1.60A	250V		●	●		●	●		●	●
TMD	2.00A	250V		●	●		●	●		●	●
TMD	2.50A	250V		●	●		●	●		●	●
TMD	3.15A	250V		●	●		●	●		●	●
TMD	4.00A	250V	4A~15A 10IN@250V AC	●	●		●	●		●	●
TMD	5.00A	250V		●	●		●	●		●	●
TMD	6.30A	250V		●	●		●	●		●	●
TMD	8.00A	125V/250V		●	●			●		●	●
TMD	10.0A	125V/250V		●	●			●		●	●
TMD	12.0A	125V/250V		●		●				●	●
TMD	12.5A	250V		●				●		●	●
TMD	15.0A	125V/250V		●		●				●	●

Remark: 125V Voltage only for UL, D'E, VDE and CCC. (1A~10A)

TME Series / 5.2×20 mm, Time-Lag Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~6.3A	150%	1 Hr Min. / 最短1小時
8A~16A		30min Min. / 最短30分鐘
100mA~16A	210%	2min Max. / 最長2分鐘
100mA	275%	200ms Min. 10s Max. / 最短200毫秒,最長10秒
125mA~16A		600ms Min. 10s Max. / 最短600毫秒,最長10秒
100mA	400%	40ms Min. 3s Max. / 最短40毫秒,最長3秒
125mA~16A		150ms Min. 3s Max. / 最短150毫秒,最長3秒
100mA	1000%	10ms Min. 300ms Max. / 最短10毫秒,最長300毫秒
125mA~16A		20ms Min. 300ms Max. / 最短20毫秒,最長300毫秒

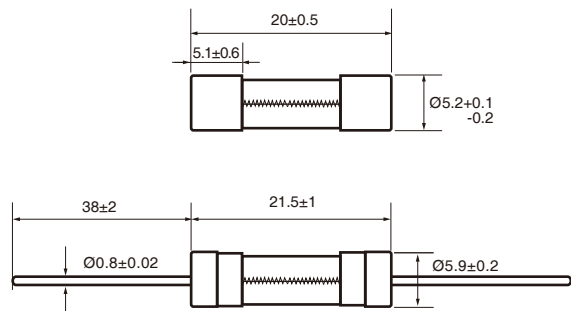
In accordance with IEC60127-2 standard, sheet6 / 遵循IEC60127-2, 規格單6



Product Features / 產品特性

Materials 材質	Body / 本體: glass tube / 玻璃管 Lead / 引線: tinned copper wire / 鍍錫銅線 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天下最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Type 型號	Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
				
TME	100mA	250V	100mA~16A 150A@250V AC	●
TME	125mA	250V		●
TME	160mA	250V		●
TME	200mA	250V		●
TME	250mA	250V		●
TME	315mA	250V		●
TME	400mA	250V		●
TME	500mA	250V		●
TME	630mA	250V		●
TME	800mA	250V		●
TME	1.00A	250V		●
TME	1.25A	250V		●
TME	1.60A	250V		●
TME	2.00A	250V		●
TME	2.50A	250V		●
TME	3.15A	250V		●
TME	4.00A	250V		●
TME	5.00A	250V		●
TME	6.30A	250V		●
TME	8.00A	250V		●
TME	10.0A	250V		●
TME	12.5A	250V		●
TME	16.0A	250V		●

CIS/CSP Series / 5.2×20 mm, Fast Acting Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~10A	100%	4 Hrs Min. / 最短4小時
	135%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒

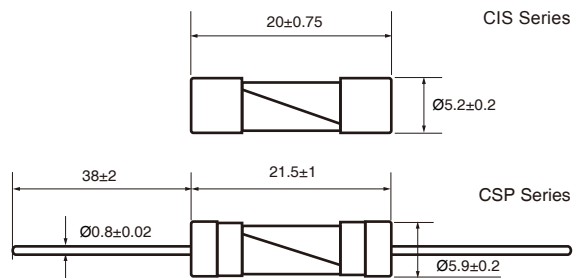
In accordance with UL 248-1 / -14 standards / 遵循UL 248-1 / -14

Product Features / 產品特性

Materials 材質	Body / 本體 : glass tube / 玻璃管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Type 型號	Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證	
					
CIS/CSP	100mA	125V/250V	100mA~10A 10000A@125V AC	●	
CIS/CSP	125mA	125V/250V		●	
CIS/CSP	150mA	125V/250V		●	
CIS/CSP	160mA	125V/250V		●	
CIS/CSP	200mA	125V/250V		●	
CIS/CSP	250mA	125V/250V		●	
CIS/CSP	300mA	125V/250V		●	
CIS/CSP	315mA	125V/250V		●	
CIS/CSP	350mA	125V/250V		●	
CIS/CSP	375mA	125V/250V		●	
CIS/CSP	400mA	125V/250V	100mA~1A 35A@250V AC	●	
CIS/CSP	500mA	125V/250V		●	
CIS/CSP	600mA	125V/250V		●	
CIS/CSP	630mA	125V/250V		●	
CIS/CSP	750mA	125V/250V		●	
CIS/CSP	800mA	125V/250V	1.1A~3.5A 100A@250V AC	●	●
CIS/CSP	1.00A	125V/250V		●	●
CIS/CSP	1.25A	125V/250V		●	●
CIS/CSP	1.50A	125V/250V		●	●
CIS/CSP	1.60A	125V/250V		●	●
CIS/CSP	2.00A	125V/250V	3.6A~5A 200A@250V AC	●	●
CIS/CSP	2.50A	125V/250V		●	●
CIS/CSP	3.00A	125V/250V		●	●
CIS/CSP	3.15A	125V/250V		●	●
CIS/CSP	3.50A	125V/250V		●	●
CIS/CSP	4.00A	125V/250V		●	●
CIS/CSP	5.00A	125V/250V		●	●
CIS/CSP	6.00A	125V		●	●
CIS/CSP	6.30A	125V		●	●
CIS/CSP	7.00A	125V		●	●
CIS	8.00A	125V		●	●
CIS	10.0A	125V		●	●

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~10A	100%	4 Hrs Min. / 最短4小時
	135%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒

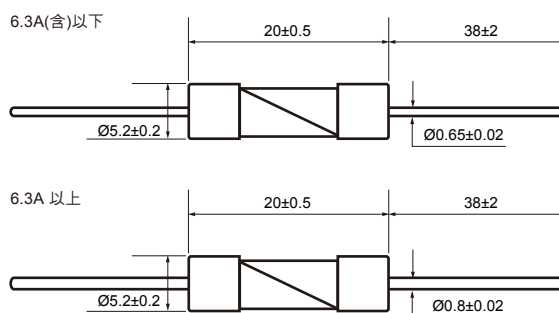
In accordance with UL 248-1 / -14 standards / 遵循UL 248-1 / -14

Product Features / 產品特性

Materials 材質	Body / 本體: glass tube / 玻璃管 Lead / 引線: tinned copper wire / 鍍錫銅線 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密封條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證	
			UL US	PS E JET
100mA	125V/250V	100mA~10A 10000A@125V AC	●	
125mA	125V/250V		●	
160mA	125V/250V		●	
200mA	125V/250V		●	
250mA	125V/250V		●	
300mA	125V/250V		●	
315mA	125V/250V		●	
350mA	125V/250V		●	
375mA	125V/250V		●	
400mA	125V/250V		●	
500mA	125V/250V	100mA~1A 35A@250V AC	●	
600mA	125V/250V		●	
630mA	125V/250V		●	
750mA	125V/250V		●	
800mA	125V/250V		●	
1.00A	125V/250V		●	
1.25A	125V/250V		●	●
1.50A	125V/250V		●	●
1.60A	125V/250V		●	●
2.00A	125V/250V		●	●
2.50A	125V/250V	3.6A~10A 200A@250V AC	●	●
3.00A	125V/250V		●	●
3.15A	125V/250V		●	●
3.50A	125V/250V		●	●
4.00A	125V/250V		●	●
5.00A	125V/250V		●	●
6.00A	125V/250V		●	●
6.30A	125V/250V		●	●
7.00A	125V/250V		●	●
8.00A	125V/250V		●	●
10.0A	125V/250V		●	●

SIC/SIP Series / 5.2×20 mm, Time-Lag Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~7A	100%	4 Hrs Min. / 最短4小時
	135%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒
	1000%	10ms Min. / 最短10毫秒

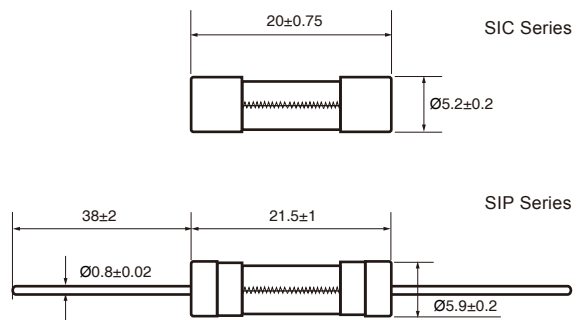
In accordance with UL 248-1 / -14 standards / 遵循UL 248-1 / -14

Product Features / 產品特性

Materials 材質	Body / 本體 : glass tube / 玻璃管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密封條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Type 型號	Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證	
					
SIC/SIP	100mA	125V/250V	(SIC Series) 100mA~7A 10000A@125V AC	●	
SIC/SIP	125mA	125V/250V		●	
SIC/SIP	150mA	125V/250V		●	
SIC/SIP	160mA	125V/250V		●	
SIC/SIP	200mA	125V/250V		●	
SIC/SIP	250mA	125V/250V		●	
SIC/SIP	300mA	125V/250V		●	
SIC/SIP	315mA	125V/250V		●	
SIC/SIP	350mA	125V/250V		●	
SIC/SIP	375mA	125V/250V		●	
SIC/SIP	400mA	125V/250V		●	
SIC/SIP	500mA	125V/250V		●	
SIC/SIP	600mA	125V/250V		●	
SIC/SIP	630mA	125V/250V		●	
SIC/SIP	750mA	125V/250V	(SIP Series) 100mA~5A 10000A@125V AC	●	●
SIC/SIP	800mA	125V/250V		●	●
SIC/SIP	1.00A	125V/250V		●	●
SIC/SIP	1.25A	125V/250V		●	●
SIC/SIP	1.50A	125V/250V		●	●
SIC/SIP	1.60A	125V/250V		●	●
SIC/SIP	2.00A	125V/250V		●	●
SIC/SIP	2.50A	125V/250V		●	●
SIC/SIP	3.00A	125V/250V		●	●
SIC/SIP	3.15A	125V/250V		●	●
SIC/SIP	3.50A	125V/250V		●	●
SIC/SIP	4.00A	125V/250V		●	●
SIC/SIP	5.00A	125V/250V		●	●
SIC/SIP	6.00A	125V/250V		●	●
SIC/SIP	6.30A	125V/250V		●	●
SIC/SIP	7.00A	125V/250V		●	●

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~7A	100%	4 Hrs Min. / 最短4小時
	135%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒
	1000%	10ms Min. / 最短10毫秒

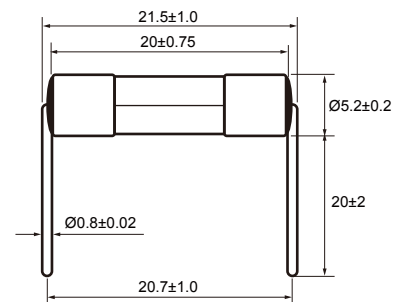
In accordance with UL 248-1 / -14 standard / 遵循UL 248-1 / -14

Product Features / 產品特性

Materials 材質	Body / 本體 : glass tube / 玻璃管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密封條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證	
			UL US	PS E JET
100mA	125V/250V	100mA~7A 10000A@125V AC	●	
125mA	125V/250V		●	
160mA	125V/250V		●	
200mA	125V/250V		●	
250mA	125V/250V		●	
300mA	125V/250V		●	
315mA	125V/250V		●	
350mA	125V/250V		●	
375mA	125V/250V		●	
400mA	125V/250V		●	
500mA	125V/250V	100mA~1A 35A@250V AC	●	
600mA	125V/250V		●	
630mA	125V/250V		●	
750mA	125V/250V		●	
800mA	125V/250V		●	
1.00A	125V/250V		●	●
1.25A	125V/250V		●	●
1.50A	125V/250V		●	●
1.60A	125V/250V		●	●
2.00A	125V/250V	1.1A~3A 100A@250V AC	●	●
2.50A	125V/250V		●	●
3.00A	125V/250V		●	●
3.15A	125V		●	●
3.50A	125V		●	●
4.00A	125V		●	●
5.00A	125V		●	●
6.00A	125V		●	●
6.30A	125V		●	●
7.00A	125V		●	●

MGC/MGP Series / 6.35×31.75 mm, Fast Acting Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~15A	100%	4 Hrs Min. / 最短4小時
	135%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒

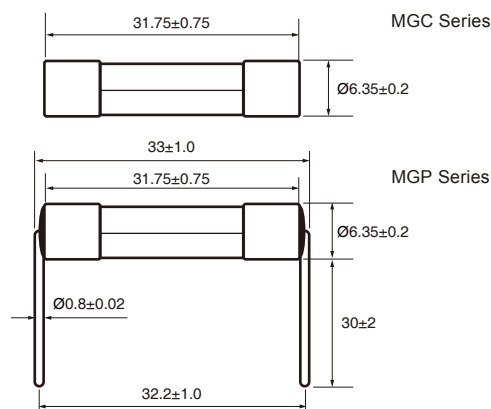
In accordance with UL 248-1 / -14 standards / 遵循UL 248-1 / -14

Product Features / 產品特性

Materials 材質	Body / 本體 : glass tube / 玻璃管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Type 型號	Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證	
				UL US	PS E JET
MGC/MGP	100mA	125V/250V	100mA~15A 10000A@125V AC	●	
MGC/MGP	125mA	125V/250V		●	
MGC/MGP	150mA	125V/250V		●	
MGC/MGP	160mA	125V/250V		●	
MGC/MGP	200mA	125V/250V		●	
MGC/MGP	250mA	125V/250V		●	
MGC/MGP	300mA	125V/250V		●	
MGC/MGP	315mA	125V/250V		●	
MGC/MGP	350mA	125V/250V		●	
MGC/MGP	375mA	125V/250V		●	
MGC/MGP	400mA	125V/250V	100mA~1A 35A@250V AC	●	
MGC/MGP	500mA	125V/250V		●	
MGC/MGP	600mA	125V/250V		●	
MGC/MGP	630mA	125V/250V		●	
MGC/MGP	750mA	125V/250V		●	
MGC/MGP	800mA	125V/250V		●	
MGC/MGP	1.00A	125V/250V		●	●
MGC/MGP	1.25A	125V/250V		●	●
MGC/MGP	1.50A	125V/250V		●	●
MGC/MGP	1.60A	125V/250V		●	●
MGC/MGP	2.00A	125V/250V	1.1A~3.5A 100A@250V AC	●	●
MGC/MGP	2.50A	125V/250V		●	●
MGC/MGP	3.00A	125V/250V		●	●
MGC/MGP	3.15A	125V/250V		●	●
MGC/MGP	3.50A	125V/250V		●	●
MGC/MGP	4.00A	125V/250V		●	●
MGC/MGP	5.00A	125V/250V		●	●
MGC/MGP	6.00A	125V/250V		●	●
MGC/MGP	6.30A	125V/250V		●	●
MGC/MGP	7.00A	125V/250V		●	●
MGC/MGP	8.00A	125V/250V	3.6A~10A 200A@250V AC	●	●
MGC/MGP	10.0A	125V/250V		●	●
MGC/MGP	12.0A	125V		●	●
MGC/MGP	15.0A	125V		●	●

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
100mA~15A	100%	4 Hrs Min. / 最短4小時
	135%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒
	1000%	10ms Min. / 最短10毫秒

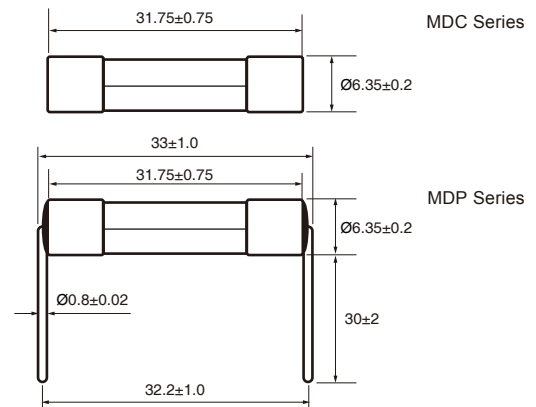
In accordance with UL 248-1 / -14 standard / 遵循UL 248-1 / -14

Product Features / 產品特性

Materials 材質	Body / 本體 : glass tube / 玻璃管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密封條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Type 型號	Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證	
				UL US	PS E JET
MDC/MDP	100mA	125V/250V	100mA~15A 10000A@125V AC	●	
MDC/MDP	125mA	125V/250V		●	
MDC/MDP	150mA	125V/250V		●	
MDC/MDP	160mA	125V/250V		●	
MDC/MDP	200mA	125V/250V		●	
MDC/MDP	250mA	125V/250V		●	
MDC/MDP	300mA	125V/250V		●	
MDC/MDP	315mA	125V/250V		●	
MDC/MDP	350mA	125V/250V		●	
MDC/MDP	375mA	125V/250V		●	
MDC/MDP	400mA	125V/250V	100mA~15A 500A@125V DC	●	
MDC/MDP	500mA	125V/250V		●	
MDC/MDP	600mA	125V/250V		●	
MDC/MDP	630mA	125V/250V		●	
MDC/MDP	750mA	125V/250V		●	
MDC/MDP	800mA	125V/250V		●	
MDC/MDP	1.00A	125V/250V		●	
MDC/MDP	1.25A	125V/250V		●	●
MDC/MDP	1.50A	125V/250V		●	●
MDC/MDP	1.60A	125V/250V		●	●
MDC/MDP	2.00A	125V/250V	100mA~1A 35A@250V AC	●	●
MDC/MDP	2.50A	125V/250V		●	●
MDC/MDP	3.00A	125V/250V		●	●
MDC/MDP	3.15A	125V/250V		●	●
MDC/MDP	3.50A	125V/250V		●	●
MDC/MDP	4.00A	125V/250V		●	●
MDC/MDP	5.00A	125V/250V		●	●
MDC/MDP	6.00A	125V/250V		●	●
MDC/MDP	6.30A	125V/250V		●	●
MDC/MDP	7.00A	125V/250V		●	●
MDC/MDP	8.00A	125V/250V	1.1A~3.5A 100A@250V AC	●	●
MDC/MDP	10.0A	125V		●	●
MDC/MDP	12.0A	125V		●	●
MDC/MDP	15.0A	125V		●	●
MDC/MDP			3.6A~8A 200A@250V AC	●	●
MDC/MDP				●	●
MDC/MDP				●	●
MDC/MDP				●	●
MDC/MDP				●	●
MDC/MDP				●	●
MDC/MDP				●	●
MDC/MDP				●	●
MDC/MDP				●	●
MDC/MDP				●	●

MTG Series / 6.35×31.75 mm, Time-Lag Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
10A~20A	100%	4 Hrs Min. / 最短4小時
	135%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒
	1000%	10ms Min. / 最短10毫秒

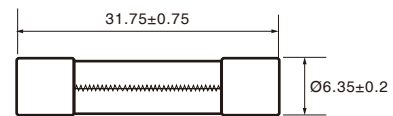
In accordance with UL 248-1 / -14 standard / 遵循UL 248-1 / -14

Product Features / 產品特性

Materials 材質	Body / 本體: glass tube / 玻璃管 Cap / 銅帽: brass with nickel plated / 銅鍍鎳 Element / 熔絲: alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度: 260°C Max Solder dwell time / 焊接時間: 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度: 350±5°C Solder dwell time / 焊接時間: 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
			
10A	250V	10A~20A 300A@250V AC	●
12A	250V		●
15A	250V		●
16A	250V		●
18A	250V		●
20A	250V		●

JGC/JGP Series / 5.2×20 mm, Fast Acting Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
1A~15A	130%	4 Hrs Min. / 最短4小時
	160%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒

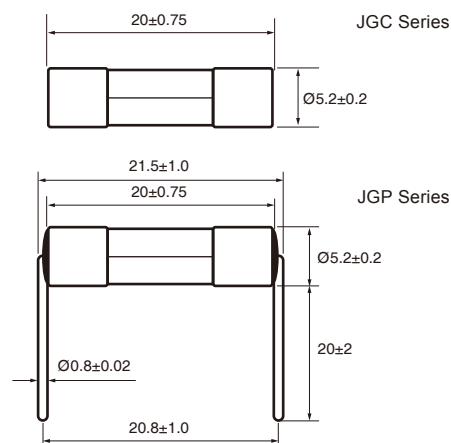
In accordance with METI Ordinance / 遵循METI

Product Features / 產品特性

Materials 材質	Body / 本體 : glass tube / 玻璃管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Type 型號	Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
JGC/JGP	1.00A	125V/250V	(JGC Series) 1A~15A 100A@125V/250V AC	
JGC/JGP	1.25A	125V/250V		●
JGC/JGP	1.50A	125V/250V		●
JGC/JGP	1.60A	125V/250V		●
JGC/JGP	2.00A	125V/250V		●
JGC/JGP	2.50A	125V/250V		●
JGC/JGP	3.00A	125V/250V		●
JGC/JGP	3.15A	125V/250V	(JGP Series) 1A~15A 100A@250V AC 1A~5A 500A@125V AC 6A~15A 100A@125V AC	●
JGC/JGP	3.50A	125V/250V		●
JGC/JGP	4.00A	125V/250V		●
JGC/JGP	5.00A	125V/250V		●
JGC/JGP	6.00A	125V/250V		●
JGC/JGP	6.30A	125V/250V		●
JGC/JGP	7.00A	125V/250V		●
JGC/JGP	8.00A	125V/250V		●
JGC/JGP	10.0A	125V/250V		●
JGC/JGP	12.0A	125V/250V		●
JGC/JGP	13.0A	125V/250V		●
JGC/JGP	15.0A	125V/250V		●

JDC/JDP Series / 5.2×20 mm, Time-Lag Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
1A~15A	130%	4 Hrs Min. / 最短4小時
	160%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒
	1000%	10ms Min. / 最短10毫秒

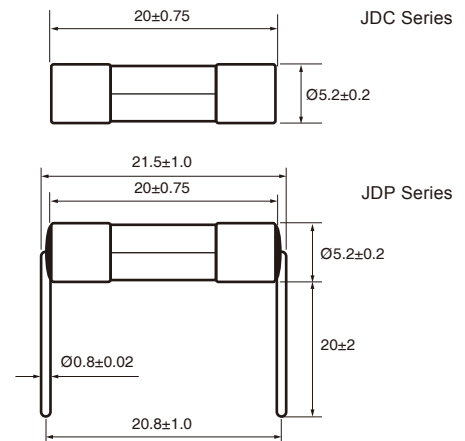
In accordance with METI Ordinance / 遵循METI

Product Features / 產品特性

Materials 材質	Body / 本體 : glass tube / 玻璃管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s
	Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Type 型號	Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
JDC/JDP	1.00A	125V/250V	(JDC Series) 1A~15A 100A@125V/250V AC	
JDC/JDP	1.25A	125V/250V		●
JDC/JDP	1.50A	125V/250V		●
JDC/JDP	1.60A	125V/250V		●
JDC/JDP	2.00A	125V/250V		●
JDC/JDP	2.50A	125V/250V		●
JDC/JDP	3.00A	125V/250V		●
JDC/JDP	3.15A	125V/250V	(JDP Series) 1A~15A 100A@250V AC 1A~5A 500A@125V AC 6A~15A 100A@125V AC	●
JDC/JDP	3.50A	125V/250V		●
JDC/JDP	4.00A	125V/250V		●
JDC/JDP	5.00A	125V/250V		●
JDC/JDP	6.00A	125V/250V		●
JDC/JDP	6.30A	125V/250V		●
JDC/JDP	7.00A	125V/250V		●
JDC/JDP	8.00A	125V/250V		●
JDC/JDP	10.0A	125V/250V		●
JDC/JDP	12.0A	125V/250V		●
JDC/JDP	13.0A	125V/250V		●
JDC/JDP	15.0A	125V/250V		●

MFS/MFP Series / 6.35×30 mm, Fast Acting Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
1A~15A	130%	4 Hrs Min. / 最短4小時
	160%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒

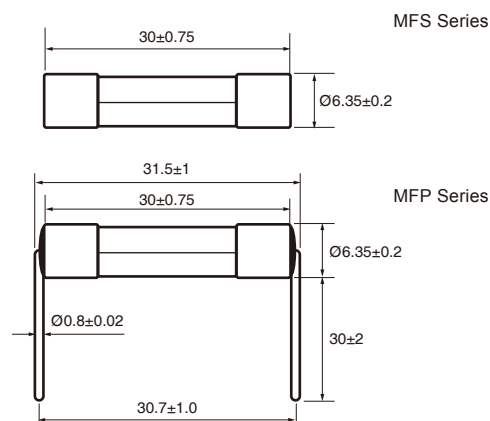
In accordance with METI Ordinance / 遵循METI



Product Features / 產品特性

Materials 材質	Body / 本體 : glass tube / 玻璃管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。

Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Type 型號	Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
				
MFS/MFP	1.00A	125V/250V	(MFS Series) 1A~15A 100A@125V/250V AC	●
MFS/MFP	1.25A	125V/250V		●
MFS/MFP	1.50A	125V/250V		●
MFS/MFP	1.60A	125V/250V		●
MFS/MFP	2.00A	125V/250V		●
MFS/MFP	2.50A	125V/250V		●
MFS/MFP	3.00A	125V/250V		●
MFS/MFP	3.15A	125V/250V		●
MFS/MFP	3.50A	125V/250V	(MFP Series) 1A~15A 100A@250V AC 1A~5A 500A@125V AC 6A~15A 100A@125V AC	●
MFS/MFP	4.00A	125V/250V		●
MFS/MFP	5.00A	125V/250V		●
MFS/MFP	6.00A	125V/250V		●
MFS/MFP	6.30A	125V/250V		●
MFS/MFP	7.00A	125V/250V		●
MFS/MFP	8.00A	125V/250V		●
MFS/MFP	10.0A	125V/250V		●
MFS/MFP	12.0A	125V/250V		●
MFS/MFP	13.0A	125V/250V		●
MFS/MFP	15.0A	125V/250V		●

MDS/MDT Series / 6.35×30 mm, Time-Lag Type

I-T Characteristics / 時間-電流特性

Ampere Rating 額定電流	% of Ampere Rating 額定電流%	Opening Time 熔斷時間
1A~15A	130%	4 Hrs Min. / 最短4小時
	160%	1 Hrs Max. / 最長1小時
	200%	120s Max. / 最長120秒
	1000%	10ms Min. / 最短10毫秒

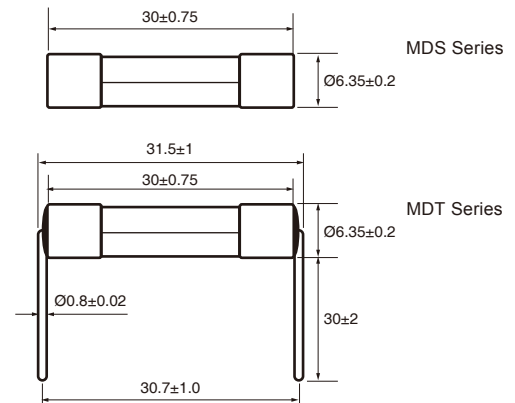
In accordance with METI Ordinance / 遵循METI

Product Features / 產品特性

Materials 材質	Body / 本體 : glass tube / 玻璃管 Lead / 引線 : tinned copper wire / 鍍錫銅線 Cap / 銅帽 : brass with nickel plated / 銅鍍鎳 Element / 熔絲 : alloy / 合金線
Operating Temperature 操作溫度	-55°C to +125°C (consider de-rating / 需考慮溫度折減)
Solderability 可焊性	260°C, ≤ 3s. (wave / 波峰焊) 350±10°C, ≤ 3s. (soldering iron / 烙鐵焊)
Resistance to Soldering Heat 耐焊接熱	260°C, 10s. (wave / 波峰焊) 350°C, 5s. (soldering iron / 烙鐵焊)
Recommended Soldering Parameters 建議焊錫參數	Wave soldering parameter / 波峰焊 Soldering pot temperature / 錫爐溫度 : 260°C Max Solder dwell time / 焊接時間 : 2~5s Hand welding parameter / 手工焊 Soldering iron temperature / 烙鐵溫度 : 350±5°C Solder dwell time / 焊接時間 : 5s Max.
Storage Conditions 儲存條件	Can be stored for 3 years under tight seal condition at temperature of +10°C~60°C, relative humidity ≤ 75%. 在溫度+10°C~60°C, 相對濕度 ≤ 75% 的密閉條件下可存放 3 年。 At most can be kept 30 days at temperature +10°C~60°C, relative humidity ≤ 95% under covered conditions. 在溫度+10°C~60°C, 相對濕度為 95% 的非露天最多可存放 30 天。



Dimensions / 尺寸圖 (Unit / 單位:mm)



Electrical Characteristics / 電氣特性

Type 型號	Rated Current 額定電流	Rated Voltage 額定電壓	Breaking Capacity 分斷能力	Safety Approvals 安全認證
MDS/MDT	1.00A	125V/250V	(MDS Series) 1A~15A 100A@125V/250V AC	
MDS/MDT	1.25A	125V/250V		●
MDS/MDT	1.50A	125V/250V		●
MDS/MDT	1.60A	125V/250V		●
MDS/MDT	2.00A	125V/250V		●
MDS/MDT	2.50A	125V/250V		●
MDS/MDT	3.00A	125V/250V		●
MDS/MDT	3.15A	125V/250V	(MDT Series) 1A~15A 100A@250V AC 1A~5A 500A@125V AC 6A~15A 100A@125V AC	●
MDS/MDT	3.50A	125V/250V		●
MDS/MDT	4.00A	125V/250V		●
MDS/MDT	5.00A	125V/250V		●
MDS/MDT	6.00A	125V/250V		●
MDS/MDT	6.30A	125V/250V		●
MDS/MDT	7.00A	125V/250V		●
MDS/MDT	8.00A	125V/250V		●
MDS/MDT	10.0A	125V/250V		●
MDS/MDT	12.0A	125V/250V		●
MDS/MDT	13.0A	125V/250V		●
MDS/MDT	15.0A	125V/250V		●

Selection Guide 選用指南

(A) Rated Functioning Temperature (T_F, T_r) 額定動作溫度 (T_F, T_r)

The temperature at which a thermal cutoff changes its state of conductivity to open a circuit with detection current of 10mA or less as it loads. The temperature tolerance is +0, -10°C.

當僅有不大于10 mA的偵測電流作為負載的情況下，使溫度保險絲改變其導電狀態之溫度。此溫度公差在+0, -10°C範圍以內。

(B) Cut-Off Temperature 實際動作溫度

Cut-off temperature is the actual operating temperature range when the thermal cutoff is made to operate inside a constant temperature oven, whose temperature is raised at the rate of 0.5 to 1°C/min, while detection current of 10mA or lower is applied.

溫度保險絲在以升溫速率為0.5~1°C/min，且以不高於10mA的偵察電流作偵測的烤爐中發生動作時的溫度。

(C) Holding Temperature (T_H, T_h, T_c) 保持溫度 (T_H, T_h, T_c)

The maximum temperature at which a thermal cutoff can be maintained while conducting rated current for 168 hours without functioning.

在溫度保險絲中，通以額定電流能夠連續維持168小時導通狀態。在此情況下，溫度保險絲所能夠承受的最高不致改變電氣流通狀態的溫度。

(D) Maximum Temperature (T_M, T_m) 最高極限溫度 (T_M, T_m)

The maximum temperature at which mechanical and electrical properties of a thermal cutoff can be maintained for 10 minutes without resuming conductivity after functioning.

溫度保險絲所能處在的最高溫度，在這個高溫狀態下，溫度保險絲已改變其電氣導通性，溫度保險絲在這個高溫持續達10分鐘而不致破壞其機械性能和電氣特性。

Storage Conditions 儲存條件

-10°C to +40°C and relative humidity of 30% to 75%.

Store where no rapid change of temperature or humidity exist, and no direct sunlight is applied. The location must be free from vibration and shock.

溫度-10°C~40°C，相對濕度30%~75%。存儲在溫度和濕度相對穩定的環境，無陽光直接照射，存儲位無震動。

Packing 包裝

Poly bag of 100 fuses / 散裝每膠袋100個保險絲

10 poly bags/box: total of 1000 fuses / 每盒10袋共1000個保險絲

Standard 標準

UL 60691 / IEC 60691

Instruction Manual 使用說明

Lead wire process 引線處理

A. The lead wire should be bent at a distance of 3 mm or more from the fuse body.

引線進行曲折加工時，請先在離本體3mm以上處固定後再進行曲折加工。

B. Avoid applying excessive force that may pull, push or twist the lead wires. 作業時，不要向引線施加過大的拉力，推力或扭力。

Mounting 安裝

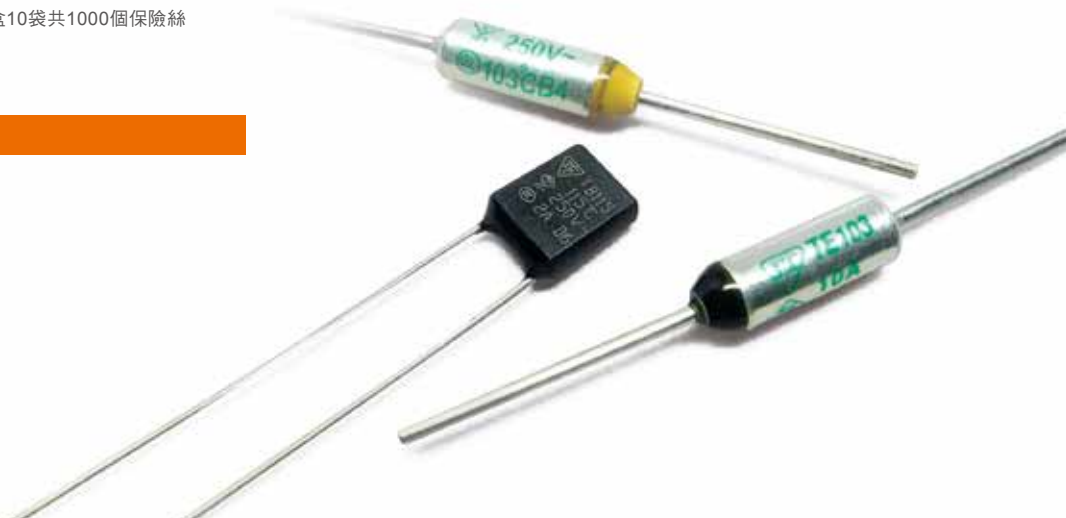
A. The thermal cutoff can be mounted by soldering, caulking, or welding. 溫度保險絲可以用焊接、鉚合等方式進行安裝。

B. It is recommended that the connecting position at the lead of resin-sealing side should be 5 mm or more from the body of thermal cutoff. 建議使引線（樹脂封口側）的安裝位置離開本體5mm以上。

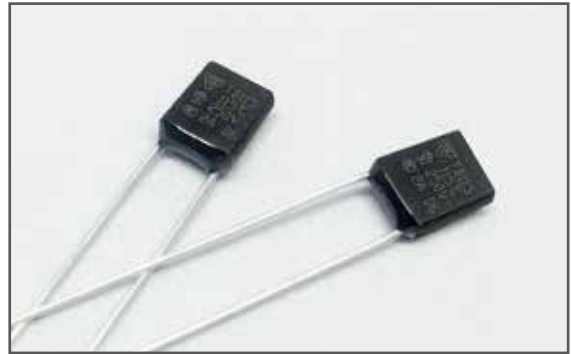
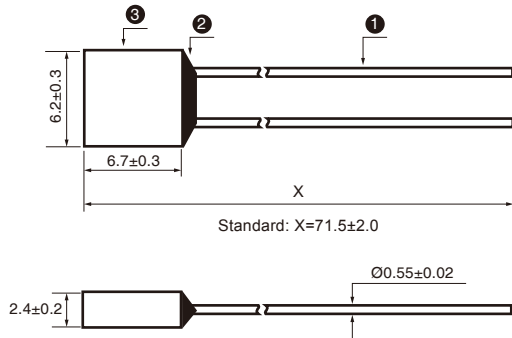
C. Mounting by soldering may cause excessive heat, which results in thermal cutoff malfunctioning. Thus, use heat-radiating clip near the fuse body to allow heat dissipation. Also, soldering time should not exceed below chart specifications. 如果是用焊接方式安裝：為防止焊接時的熱量引發保險絲動作，在焊接時，建議用散熱夾，夾在保險絲外殼附近，以便熱量散發，並在規定的焊錫時間內完成。具體焊錫時間如下表：

Tf Temp Tf 溫度	Soldering Time 焊錫時間	Lead Distance 引線距離			Soldering Conditions 焊錫條件
		10mm	15mm	20mm	
94°C Down / 94°C以下	1S	2S	3S		Soldering Temperature: 300°C 焊錫溫度: 300°C
94°C~100°C	2S	3S	4S		
101°C~130°C	3S	4S	5S		
Over 130°C / 130°C以上	4S	5S	5S		

D. Thermal cutoff fuse is a heat sensitive device. Mounting by manual soldering iron is recommended. Wave soldering is not recommended. 溫度保險絲為熱敏感元件，安裝時建議用手工過錫或烙鐵焊錫，不建議使用波峰焊。



Dimensions / 尺寸圖 (Unit / 單位:mm)

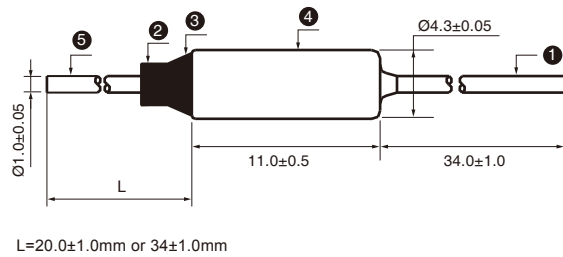


No.	Component / 元件	Material / 材質
①	Lead / 引線	Tinned Copper Wire / 鍍錫銅線
②	Sealing Resin / 封口樹脂	Epoxy Resin / 環氧樹脂
③	Casing / 外殼	Plastic / 塑膠

Electrical Characteristics / 電氣特性

Type 型號	(A) Rated Functioning Temperature 額定動作溫度 (T _F , T _F) (°C)	(B) Cut-Off Temperature 額定動作溫度 (°C)	(C) Holding Temperature 最高維持溫度 (T _H , T _H , T _C) (°C)	(D) Maximum Temperature Limit 最高極限溫度 (T _M , T _M) (°C)	Electrical Rating 電氣額定值	Safety Approvals 安全認證				
					Voltage(V)/額定電壓 (V _{AC})	UL	DE	S	CCC	PS JET
TB102	102	97±2	76	180	250V		●	●	●	●
TB115	115	112±3	85	180	250V	●	●	●	●	●
TB125	125	121±3	97	180	250V	●	●	●	●	●
TB130	130	126.5±3	102	180	250V	●	●	●	●	●
TB150	150	146±2	120	180	250V		●	●	●	●

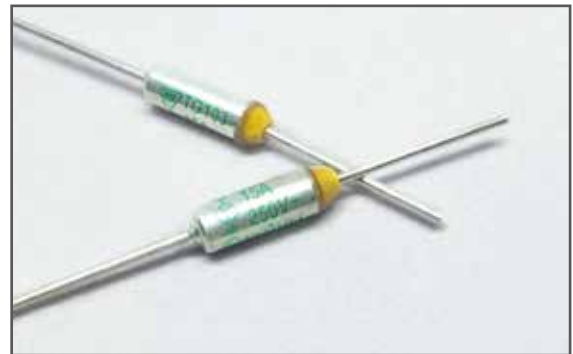
Dimensions / 尺寸圖 (Unit / 單位:mm)



TE Series Rating 10A 250V AC



TG Series Rating 15A 250V AC



No.	Component / 元件	Material / 材質
①	Lead 1 / 引線1	Tinned Copper Wire / 鍍錫銅線
②	Isolation Tube / 絕緣管	Ceramic / 陶瓷
③	Sealing Resin / 封口樹脂	Epoxy Resin / 環氧樹脂
④	Casing / 外殼	Silver-Plated Copper / 銅鍍銀
⑤	Lead 2 / 引線2	Silver-Plated Copper / 銅鍍銀

Electrical Characteristics / 電氣特性

Type 型號	(A) Rated Functioning Temperature 額定動作溫度 (T _F , T _I) (°C)	(B) Cut-Off Temperature 額定動作溫度 (°C)	(C) Holding Temperature 最高維持溫度 (T _H , T _h , T _c) (°C)	(D) Maximum Temperature Limit 最高極限溫度 (T _M , T _m) (°C)	Electrical Rating 電氣額定值	Safety Approvals 安全認證				
					Voltage(V)/額定電壓 (V _{AC})	UL C	UL D	UL S	UL CC	UL JET
TE/TG 66	66	64±2	42	200	250V	●	●	●	●	●
TE/TG 77	77	74±2	48	200	250V	●	●	●	●	●
TE/TG 87	87	81±2	52	200	250V	●	●	●	●	●
TE/TG 94	94	91±2	62	160	250V	●	●	●	●	●
TE/TG 99	99	96±2	68	200	250V	●	●	●	●	●
TE/TG 103	103	97±2.5	68	200	250V	●	●	●	●	●
TE/TG 113	113	108±2	81	200	250V	●	●	●	●	●
TE/TG 116	116	111±2.5	83	200	250V	●	●	●	●	●
TE/TG 121	121	118.5±2.5	86	200	250V	●	●	●	●	●
TE/TG 128	128	126±2	100	250	250V	●	●	●	●	●
TE/TG 139	139	135±2	109	200	250V	●	●	●	●	●
TE/TG 142	142	135±2	110	200	250V	●	●	●	●	●
TE/TG 147	147	142±2	117	250	250V	●	●	●	●	●
TE/TG 152	152	150±2	122	250	250V	●	●	●	●	●
TE/TG 169	169	164±2	139	300	250V	●	●	●	●	●
TE/TG 184	184	181.5±2	154	300	250V	●	●	●	●	●
TE/TG 187	187	181.5±2	154	300	250V	●	●	●	●	●
TE 216	216	213±2	186	300	250V	●	●	●	●	●
TG 216	216	213±2	186	300	250V	◎	●	●	●	●
TE/TG 240	240	236±2	200	300	250V	●	●	●	●	●

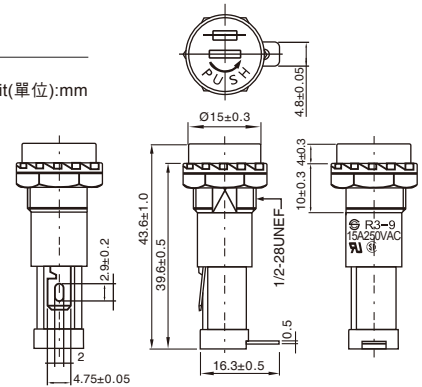
© Pending / 認證中

R3-9 / Panel Mount Type Fuseholder



Specifications		
1	Fuse Size	Ø6.35x30mm / Ø6.35x31.75mm
2	Maximum Rating	15A 250V AC
3	Dielectric Strength	AC 1500V 1 Minute
4	Insulation Resistance	DC 500V 100mΩ Min.
5	Contact Resistance	50mΩ Max
6	Approvals	

Unit(單位):mm

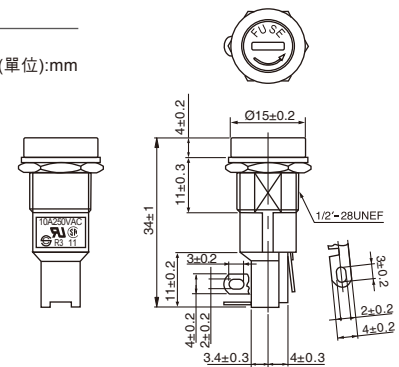


R3-11 / Panel Mount Type Fuseholder



Specifications		
1	Fuse Size	Ø5.2x20mm
2	Maximum Rating	10A 250V AC
3	Dielectric Strength	AC 1500V 1 Minute
4	Insulation Resistance	DC 500V 100mΩ Min.
6	Approvals	

Unit(單位):mm

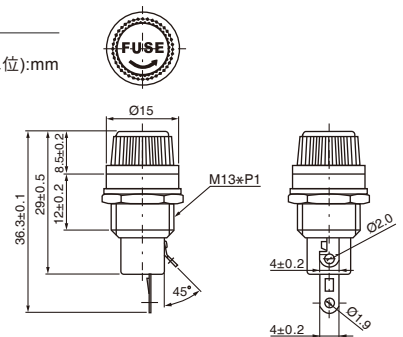


R3-12 / Panel Mount Type Fuseholder



Specifications		
1	Fuse Size	Ø5.2x20mm
2	Maximum Rating	10A 250V AC
3	Dielectric Strength	AC 1500V 1 Minute
4	Insulation Resistance	DC 500V 100mΩ Min.
6	Approvals	

Unit(單位):mm

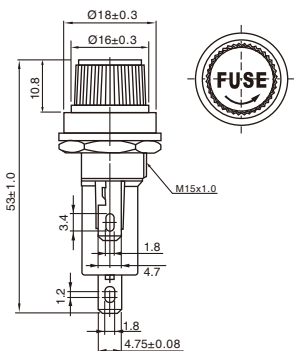


R3-13 / Panel Mount Type Fuseholder



Specifications		
1	Fuse Size	Ø6.35x30mm / Ø6.35x31.75mm
2	Maximum Rating	10A 250V AC
3	Dielectric Strength	AC 1500V 1 Minute
4	Insulation Resistance	DC 500V 100mΩ Min.
5	Contact Resistance	50mΩ Max
6	Approvals	

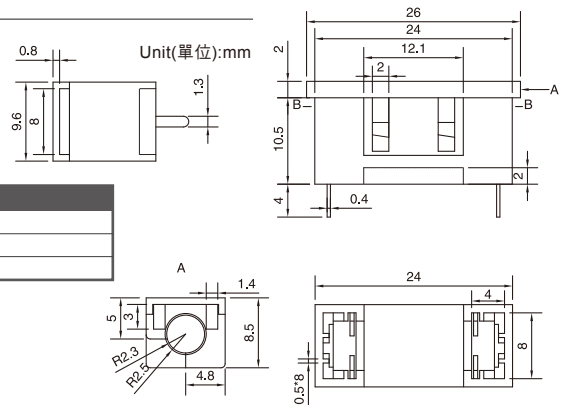
Unit(單位):mm



WL-212 / Fuse Block.P.C.Board Type (Vertical Type With Cover)



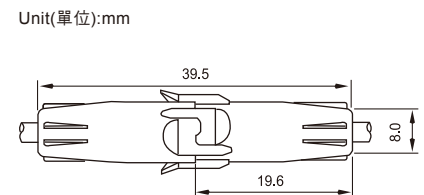
Specifications		
1	Fuse Size	Ø5.2x20mm
2	Maximum Rating	10A 250V AC
3	Material	Nylon



WL-208 / In-Line Fuseholder



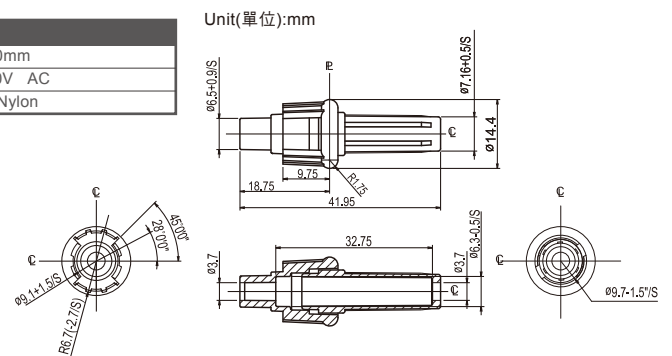
Specifications		
1	Fuse Size	Ø5.2x20mm
2	Maximum Rating	10A 250V AC
3	Material	P.C.(Polycarbonate)
4	Insulation Resistance	DC 500V 100mΩ Min.



WL-209 / In-Line Fuseholder



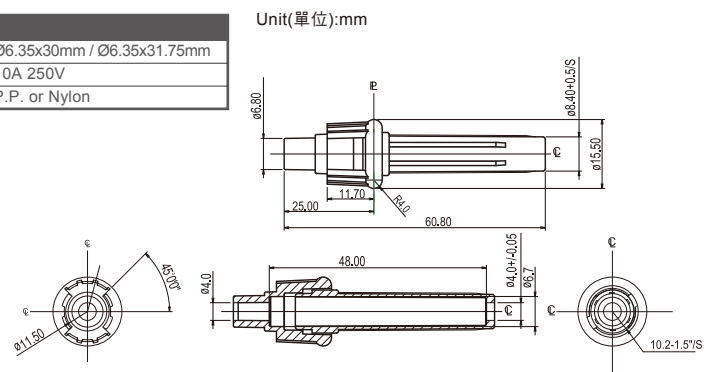
Specifications		
1	Fuse Size	Ø5.2x20mm
2	Maximum Rating	10A 250V AC
3	Material	P.P. or Nylon



WL-206 / In-Line Fuseholder



Specifications		
1	Fuse Size	Ø6.35x30mm / Ø6.35x31.75mm
2	Maximum Rating	10A 250V
3	Material	P.P. or Nylon



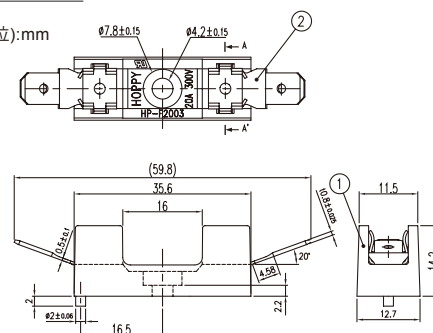
HP-F2003 / WL-210A / WL-210D / WL-211

HP-F2003 / Fuse Block P.C. Board Type



Specifications	
1 Fuse Size	Ø6.35x30mm / Ø6.35x31.75mm
2 Maximum Rating	20A 300V
3 Dielectric Strength	AC 2500V 1 Minute
4 Insulation Resistance	DC 500V 5mΩ Min.
5 Approvals	

Unit(單位):mm

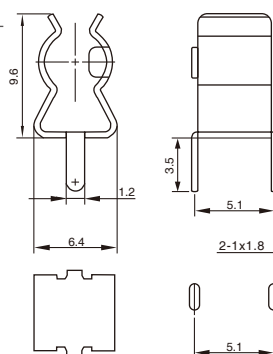


WL-210A / Fuse Clip P.C. Board Type



Specifications	
1 Fuse Size	Ø5.2x20mm
2 Maximum Rating	10A 250V
3 Material	Spring Brass
4 Finish	Tin-Plated
5 Material Thicknes	0.4t

Unit(單位):mm

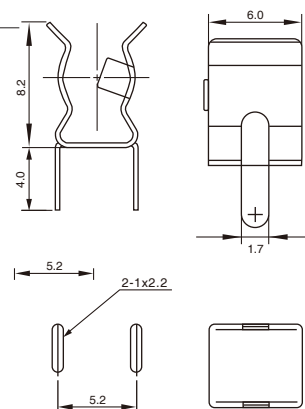


WL-210D / Fuse Clip P.C. Board Type



Specifications	
1 Fuse Size	Ø5.2x20mm
2 Maximum Rating	10A 250V
3 Material	Phosphor Bronze
4 Finish	Tin-Plated
5 Material Thicknes	0.3t

Unit(單位):mm

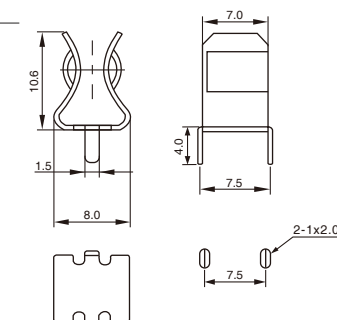


WL-211 / Fuse Clip P.C. Board Type



Specifications	
1 Fuse Size	Ø6.35x30mm / Ø6.35x31.75mm
2 Maximum Rating	15A 250V
3 Material	Spring Brass
4 Finish	Tin-Plated
5 Material Thicknes	0.5t

Unit(單位):mm



About CSR & Product Advantage

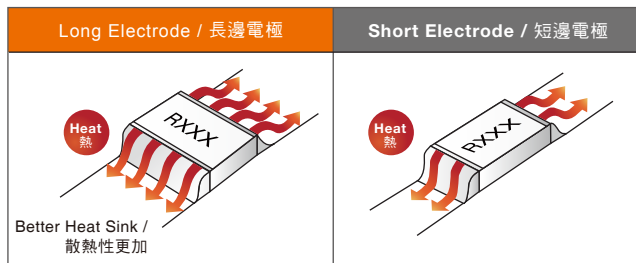
About CSR 關於CSR

Walter Electronic has released a new surface-mount ceramic metal foil 2W resistor current sensing resistor in the compact 1206 package size.

華德成功研發出表面貼片式陶瓷金屬箔 2W 精密電流感測電阻 (CSR)，可提供 1206 小尺寸的包裝規格。

Our compact size in the 0805 or 1206 long electrode range up to 1W is an ideal replacement of traditional 2512 thick & thin film resistors. The compact size allows replacement of larger current sensing resistors, saving space on the circuit board.

為了配合工程師於電路板尺寸上的設計需求，華德 0805 或 1206 長電極 1W 系列 可成為傳統 2512 厚/薄膜電阻的最佳替代選擇。小體積的 CSR 可替代耗佔電路板空間的大尺寸 CSR，進而節省電路板空間。



Our products are 100% manufactured in-house from raw material to finish product with exclusive know-how, results in high power and low resistance values.

華德 CSR 系列從原物料到成品製程，全以獨家秘方自行研發及生產，可因此提供高功率且低阻值之產品。

CSR features ceramic metal foil formation with constantan or manganese resistive element. The resistor offers low inductance value ($H < 5.0nH$) for frequency response under 1GHz, and low thermal EMF ($EMF < 0.5\mu V/^{\circ}C$).

華德 CSR 結構為陶瓷金屬箔與康銅或錳銅電阻元素精心打造而成。其電阻於 1GHz 高頻率下具有低電感值 ($H < 5.0nH$) 和低電偶效應 ($EMF < 0.5\mu V/^{\circ}C$)。

Walter's CSR electrical characteristics are far better than traditional thin and thick film resistors, which can be customized in any resistance range within our specification.

華德 CSR 電器特性遠遠超過於傳統厚/薄膜電阻，可於任何規格範圍內依客戶需求制定阻值。

Instruction Manual 使用說明

Rigorously tested and adopted by world-leading contract manufacturers, Walter's ultra low-ohmic high precision CSR series is an ideal substitute for traditional wire wound and leaded products, which features:

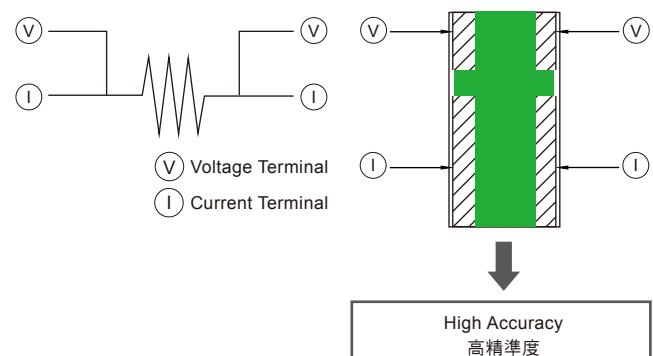
華德產品通過了世界領先品牌製造商的嚴格測試。其超低阻高精度 CSR 系列為傳統繞線及含鉛產品的最佳替代選擇，其特色包含：

- High precision ($\Delta R < 1\%$)
高精密度 ($\Delta R < 1\%$)
- Outstanding TCR ($TCR < 40ppm$)
優勢的 TCR 值 ($TCR < 40ppm$)
- Wide range of sizes (from 0402~5951)
廣泛的尺寸 (從 0402~5951)
- Excellent thermal EMF ($EMF < 0.5\mu V/^{\circ}C$)
卓越的低電偶效應 ($EMF < 0.5\mu V/^{\circ}C$)
- High power rating (1206 size > 1W)
高功率 (1206 size > 1W)
- High frequency response ($H < 5.0nH$)
高頻率反應 ($H < 5.0nH$)
- High stability (certified 2000hr reliability test surpassing Military Standard 202, Method 107G)
高信賴度 (優於 2000 小時美國軍規 Mil-202, Method 107G 信賴測試標準)
- RoHS/REACH compliant and Halogen free
符合 RoHS/REACH 標準，無鹵素
- Alloy resistive element
電阻合金板
- Flame retardant epoxy, accord to UL94-V0 requirement
防焊層符合 UL94-V0 的要求
- Excellent overload and high pulse handling capability
絕佳的過負載及脈沖能力
- Low inductance ($< 0.05\mu H$ at 10MHz)
低感抗
- Easy to assemble (excellent for surface mount technology)
易於組裝 (適合表面粘著技術)

Walter 4-terminal resistors 華德CSR產品四端電極說明

Walter develop 4-terminal resistors which is high accuracy for the ultra precision application market demand. The designed concept is divided common terminal into current and voltage individually to reduce the interference each other to increase the quality of measured signal.

華德針對高精度產品的需求發展出4端子(電極)產品，將電流與電壓的端子分開，減低兩者間的相互干擾，使得偵測訊號的品質更加提升。



CSR Relative Information

Applications 應用領域

- Industrial electronics / power electronics / power supply / DC/DC-converter / AC/DC-inverter / battery (sets) / power management / motor controller, and etc...
工業電子、電源供應、管理電源轉換器、變頻器、電池(組)、電源管理、馬達控制器...等應用
- Automotive electronics / 汽車電子:
control systems / chassis / power train / lighting/ and relevant electronic applications. Other industries include white goods / 3C products / communication and medical.
控制系統、底座、動力傳動、光源...等電子應用
工業領域包括、白色家電、3C產品、通訊及醫療用途
- Computer & computer peripheral / cell phone / communication equipment
電腦 & 電腦週邊設備、手機、通訊設備

Numbering System 編碼原則

****	****	*	***	R***	*
(1)	(2)	(3)	(4)	(5)	(6)

- Product / 產品別: STC/STE/HTC/HTE
- Type & size / 種類&尺寸: (Ex: 1206, 2512)
- Material (Ex: C=Cu alloy / N=Ally)
材料 (Ex: C=銅合金 / N=合金)
- Power rating / 額定功率: Ex.: 0W5=0.5 Watt 1W0=1.0 Watt 2W0=2.0 Watt
- Nominal resistance value / 元件實裝電阻值 (Ex: 10mΩ → R010)
- Resistance tolerance / 元件電阻值誤差: (Ex: F=±1.0%, H=±3.0%, J=±5.0%)

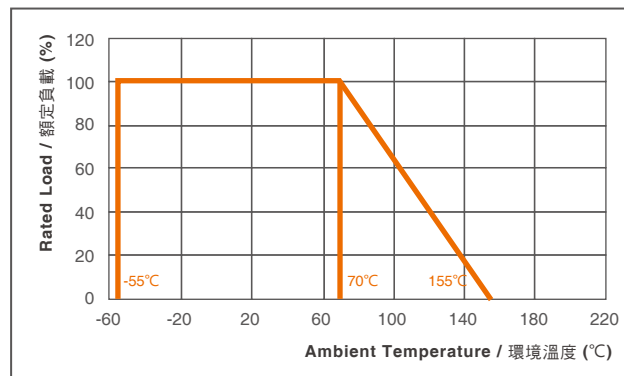
Ex : HTC2512C2W0R010F

HTC	2512	C	2W0	R010	F
Current Sensing Resistor 電流感測電阻 The Electrode at the Widths 電極在寬邊	Width / 寬: 3.2mm Length / 長: 6.4mm	Cu Alloy 銅合金	Power : 2W 功率為2.0瓦	Resistance 電阻為10 mΩ	Resistance Tolerance 1% 電阻誤差為1%

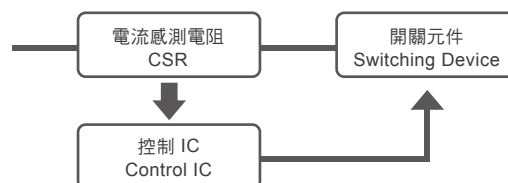
Definition of Electrical Characteristics 電性參數定義

- Pr** : power rating at 70°C or below
在環境溫度70°C以下時的額定功率
- Ro** : device normal resistance
元件在室溫下的電阻
- Rt** : normal resistance tolerance
元件在室溫下的電阻誤差範圍
- Vmax** : max. Voltage and comply with $V_{max} = (P \cdot R)$
本元件可操作最大電壓 $V_{max} = (P \cdot R)$
- TCR** : temperature coefficient of resistance
電阻溫度係數

Derating 功率遞減



Derating 功率遞減



Current sensing resistors (CSR) is a detection device that assists control ICs from current feedbacks in the form of a voltage drop. The current is detected by the monitoring IC and is translated to an easily measured output voltage to determine subsequent actions within the circuitry.

CSR(Current Sensing Resistors) 即為電流感測電阻元件，是一種在線路中以回饋電壓差到控制IC協助其判定當時電流狀況的偵測元件，當控制IC從CSR端獲取訊號後，則告知其所處電源電路上的元件應該採取的動作或措施。

- CSR transfers measured data to IC units to determine subsequent actions.
其功能乃將量測的訊息傳給IC比較器進而決定後續的動作
- CSR precision is extremely prominent.
因此CSR的精準度相當重要
- We offer high precision($\Delta R < 1\%$) and high power($P > 2W$) CSR products.
我們可提供高精度($\Delta R < 1\%$) 高功率 ($P > 2W$) 的CSR

Proudly Serving Tier-1 Customers Including 我們客戶所服務的對象

Delta, HTC, HP, Sony, Toshiba, Dell, LG, Asus, TECO, Foxconn..., and more
台達, 宏達, 惠普, 索尼, 東芝, 戴爾, 樂金, 華碩, 東元, 富士康... 以及其它廠商。

Thermal EMF 熱電偶效應

Thermoelectric effect, also known as the Seebeck effect occurs when endpoints of two dissimilar type of metals connect to form a closed loop. If temperature difference exists between the two junctions, a current will be produced in the circuit. Thermoelectric effect is mainly due to different types of metal having different numbers of free electrons.

When the two metals connects to formed a loop, the temperature change will cause free electron activities on the contact surface, thus leading to potential difference between the two metals. This potential difference derives from the contact area, temperature differences, and metal types. When temperature is constant on both junctions, the thermal EMF generate by the endpoint remains the same, thus current will not be produced in the loop.

Temperature variance between the two ends results in different size thermal EMF, which generates an electrical current flow from high thermal electromotive force towards low thermal electromotive force. Having low resistance value of thermal EMF in DC circuits is an important consideration, but usually not an issue in AC circuits. For DC applicable battery industry, the influence of EMF effect becomes an important issue.

To reduce the EMF effect when using CSR, it is important to select correct material. Manganese and Constantan composites are widely used in the field of electrical material. EMF effect for CSR made from Manganese is weaker than Constantan (FIG.2). For CSR used in battery market, Manganese is preferred over Constantan, since EMF effect disturbs power management IC unit, thus leading to misjudgment.

熱電效應，也稱為席貝克效應——其現象是當二種不同性質金屬端點連接形成一閉迴路時，若兩端點間有溫度差，則迴路間會有電流產生。此熱電效應主要是因不同種類金屬擁有自由電子數不同，當兩金屬連接形成迴路時，溫度改變會造成接觸面之自由電子運動而使金屬間產生電位差。此電位差由接觸面積、溫度差、與金屬種類來決定，當兩端溫度相同時，端點所產生之熱電動勢相同，故迴路中不會有電流；若兩端間存在溫度差，導致熱電動勢大小不同而產生一電流由高電動勢往低電動勢流動。

低阻值電阻的熱電效應在直流線路應用是很重要的考量因素，但在交流線路應用上就不是很重要的考量因素了。對於使用直流電的電池產業來說，EMF效應的影響就顯得相當重要，為了降低EMF的影響，在使用感測元件，電流感測電阻，的材料選擇上就要相當注意，目前在商品化的材料中，錳銅合金及鎳銅合金是較被廣泛使用的，而以錳銅合金做成元件的EMF效應小於鎳銅合金做成的元件所產生的(FIG.2)，因此對於電池產業而言，選擇錳銅合金材質做為電流感測的元件優於鎳銅材料做成的元件，EMF效應產生的干擾會造成電源管理IC的訊息誤判，導致錯誤的動作。

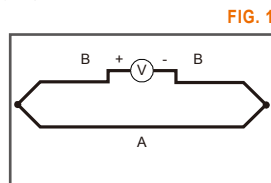


FIG. 1

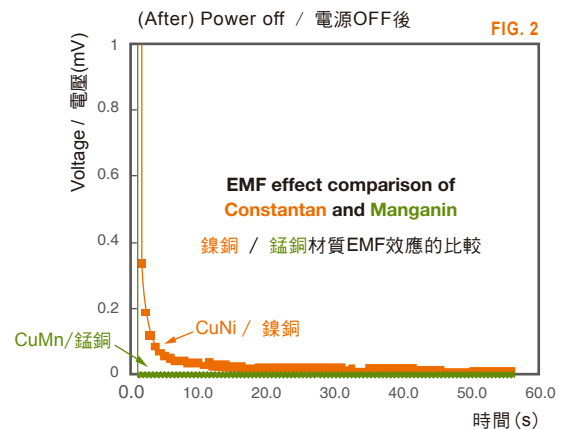


FIG. 2

Terminal Construction 端電極結構

When considering CSR electrical properties and safety, non-edge electrode terminal device is more advantageous over edge electrode terminal device. Resistor's actual resistance has to consider its equivalent series resistance of construction as indicated below:

無側邊電極的電流感測電阻在電氣特性及安全性上優於具側邊電極的電流感測電阻實際的電阻必須考慮電阻結構上的等效串聯電阻值，如下方程式：

- **RS** : series resistance / 等效串聯阻抗
[ESR(Equivalent Series Resistance) = $R_L + R_C + R_E$]
- **RL** : resistance of leads / 引腳的阻抗
- **RC** : resistance of contacts / 電阻元件與引腳接點的阻抗
- **RE** : resistance of element / 電阻元件的阻抗

The temperature coefficient of resistance (TCR)

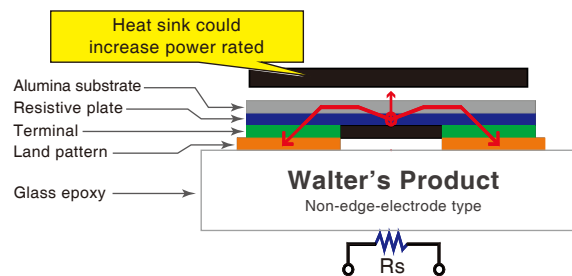
Will also include R_L , R_C , R_E effect.

電阻溫度係數亦須考慮等效串聯電阻的每一個影響。

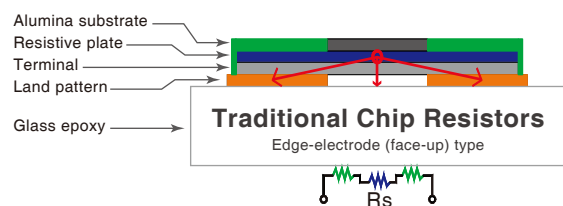
Hence, adopting pedestal terminal structural design will effectively reduce :
因此採用僅有底部端電極結構設計可以有效：

- Lead resistance / 減少接腳的阻抗
- TCR of copper terminal / 減少引腳的TCR
- TCR of solder joint / 減少焊接點的TCR

High thermal conductivity circuit board substrates such as alumina or heat sink is provided in the pedestal terminal structure to optimize high power designs. 採用此一設計時，提供了利用高導溫鋁基板或增加散熱片來提升功率的便利性。



- Walter STC/HTC-series are ONLY suitable for IR reflow soldering process. Walter STC/HTC-系列產品進行組裝加工時僅適用迴流焊製程
- Walter STE/HTE-series are suitable for IR reflow and wave soldering process. Walter STE/HTE-系列產品進行組裝加工時可適用迴流焊及波峰焊製程



- Normal traditional chip resistor device structure(face-up)
一般傳統晶片電阻結構(具端面電極)

Performance Characteristics 功能特性

Parameter / 測試參數	Conditions / 條件	Consent Standard / 廠內允收標準
Short Time Over Load 短時過載測試	$I_{test}=2.5 \times V_{max}/R_o$; $T=25 \pm 2^\circ\text{C}$; $t=5\text{s}$ 測試電流= $2.5 \times V_{max}/R_o$; 環境溫度= $25 \pm 2^\circ\text{C}$; 通電=5秒	$\pm (0.5\%+0.5\text{m}\Omega)$ IEC60115-1 4.13
High Temp. Exposure 高溫曝露測試	$T=+170 \pm 2^\circ\text{C}$; $t=1,000\text{hrs}$ 測試溫度= $+170 \pm 2^\circ\text{C}$; 時間=1,000小時	$\pm (0.5\%+0.5\text{m}\Omega)$ IEC60115-1 4.25
Low Temp. Load Life 低溫儲存測試	$T=-55 \pm 2^\circ\text{C}$; $t=1,000\text{hrs}$ 測試溫度= $-55 \pm 2^\circ\text{C}$; 時間=1,000小時	$\pm (0.5\%+0.5\text{m}\Omega)$ IEC60115-1 4.25
Moisture Load Life 高濕負載測試	$V_{test}=V_{max}$, $t_{on}=90\text{min}$, $t_{off}=30\text{min}$, $T=60 \pm 2^\circ\text{C}$, $RH=95\%$, 1,000hrs(含以上) 測試電壓=最大電壓; 測試溫度= $60 \pm 2^\circ\text{C}$; 相對濕度=90%; 通電90分鐘, 斷電30分鐘; 持續1,000小時	$\pm (0.5\%+0.5\text{m}\Omega)$ IEC60115-1 4.25
Thermal Shock 冷熱衝擊測試	$[-55^\circ\text{C} \ 30\text{min} \rightarrow \text{R.T.} \ 3\text{min} \rightarrow +150^\circ\text{C} \ 30\text{min} \rightarrow \text{R.T.} \ 3\text{min}]$ by 100 Continuous Cycles $[-55^\circ\text{C} \ 30\text{分鐘} \rightarrow \text{室溫} \ 3\text{分鐘} \rightarrow +150^\circ\text{C} \ 30\text{分鐘} \rightarrow \text{室溫} \ 3\text{分鐘}]$ 連續循環100次	$\pm (0.5\%+0.5\text{m}\Omega)$ IEC60115-1 4.19
Load Life at 70°C 70°C 負載測試	$V_{test}=V_{max}$; $T=70 \pm 2^\circ\text{C}$; $t=90\text{min On } t=30\text{min Off}$; 1,000hrs 測試電壓= V_{max} ; 測試溫度= $70 \pm 2^\circ\text{C}$; 通電90分鐘; 斷電30分鐘; 持續1,000小時	$\pm (0.5\%+0.5\text{m}\Omega)$ IEC60115-1 4.25
Pulse Test 脈衝測試	$P_{test}=P_r$; $T=25^\circ\text{C}$; $t=5\text{s On}$; $t_f=5\text{s Off}$; by 10,000 Continuous Cycles 測試功率=額定功率; 測試溫度= 25°C ; 通電5秒; 斷電5秒; 持續10,000個循環	$\pm (0.5\%+0.5\text{m}\Omega)$ According to Customer's Requirement / 客戶需求
Solderability 可焊性	Dipped into Solder at $245 \pm 5^\circ\text{C}$ for 3 $\pm$ 1s 浸入 $245 \pm 5^\circ\text{C}$ 的錫爐中; 持續時間=3 $\pm$ 1s; 觀察電極端錫的覆蓋率	A New Solder Shall Cover Minimum of 90% IEC60115-1 4.17 新錫使用電極覆蓋面積超過90%
Resistance to Solder Heat 抗焊接熱測試	20 $\pm$ 1s at $275 \pm 5^\circ\text{C}$ 放入 $275 \pm 5^\circ\text{C}$ 的回焊爐中; 持續時間=20 $\pm$ 1s	$\pm (0.5\%+0.5\text{m}\Omega)$ IEC60115-1 4.18
Substrate Bending 彎曲測試	Span Between Fulcrums: 90mm; Bend Width: 2mm; Test Board: Glass-Epoxy Board, Thickness=1.6mm by 10 Continuous Cycles 支點間距=90mm; 彎曲量=2mm; 測試基板: 玻纖環氧樹脂材, 板厚: 1.6mm, 進行10個循環	$\pm (0.5\%+0.5\text{m}\Omega)$ IEC60115-1 4.33
Mechanical Shock 機械衝擊測試	$a=100\text{G}$ for 11ms, 5 Pulse 衝擊加速度=100G; 時間=11ms; 持續5次	$\pm (0.5\%+0.5\text{m}\Omega)$ IEC60115-1 4.21

Product Selection Guide 產品選用指南

- Step 1: select the required resistance values for the circuit.
步驟一：選擇迴路中所需的電阻值。
- Step 2: choose resistance value of the most accuracy and minimal error of resistance.
步驟二：選擇阻值所要的精準度即最小誤差值。
- Step 3: confirm the regular maximum current that flows into the component from the circuit.
步驟三：確認迴路流通該元件經常性的最大電流。
- Step 4: calculate the required minimum rated power of the component. The selected value must be higher than the actual value.
步驟四：以此電流計算該元件所需具備的最小額定功率，選擇該元件時其值必須大於實際使用值。
- Step 5: select size according to available space on the component.
步驟五：根據設計空間大小選擇所需尺寸。
- Step 6: consider the thermal electromotive force (EMF)
步驟六：有無熱電動勢(EMF)的考慮。

Product Selection Guide Example 產品選用指南範例

A design engineer requires CSR to protect the rear end of the power source, and 5 m Ω is required on the circuit design. In addition, the applied power management IC is highly sensitivity and allows low resistance error, thus resistance precision lower than 1% should be opted. Furthermore, its regular current-flow is approximately 15 A, so the applicable resistor should endure a power (P) = 1.125W. The power supply space allocation is limited, so smaller sizes such as 1206 should be selected. Finally, this particular system does consider the EMF effect, therefore, HTC1206C1W5R005F is selected.

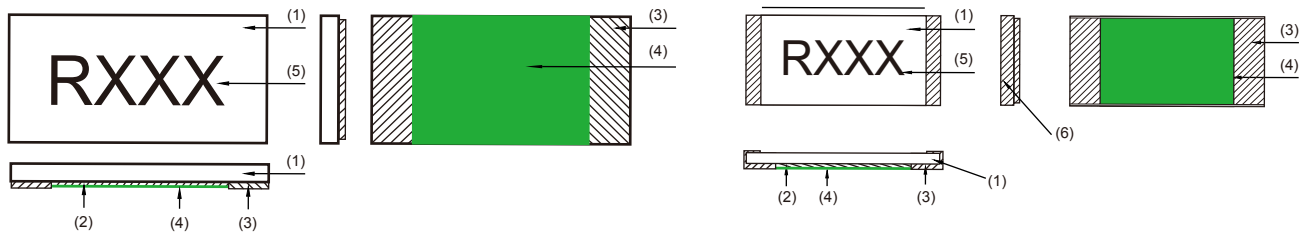
一設計工程師於電源後端OCP保護上須用到電流偵測元件(CSR)，其因電路設計關係需用到5m Ω ，又由於其所用之電源管理IC敏感度較大所容許電阻誤差小，故須選擇誤差小於1%的電阻精度，此外其經常性流通電流約在15A，故此計算該電阻所需承受功耗為 $P=1.125\text{W}$ ，該電源設計空間小，故須選用較小尺寸如1206尺寸，再者此系統並不考慮EMF效應，故最後型號選定為HTC1206C1W5R005F。

Product Material / 產品材料

No. 號碼	Material / 材質	Description / 說明
①	Substrate / 基板	Alumina Ceramic (Alumina 96%) / 氧化鋁陶瓷基板 (氧化鋁含量達 96%)
②	Resistive Element / 電阻本體	Cu - Alloy / 銅合金
③	Terminal Electrode / 端電極	Sn、Ni、Cu / 錫、鎳、銅
④	Protective Coating / 保護防焊層	Flame-Retardant Epoxy, Meets UL- 94-V0 Requirements (Green) / 防火級環氧樹脂, 符合UL- 94-V0 要求 (綠色)
⑤	Marking Coating / 文印防焊層	Flame-Retardant Epoxy, Meets UL- 94-V0 Requirements (Black) / 防火級環氧樹脂, 符合UL- 94-V0 要求 (黑色)
⑥	Edge electrode / 側邊電極	Sn、Ni、Cu / 錫、鎳、銅



Dimensions / 尺寸圖 (Unit / 單位:mm)



Standard Specification / 規格標準

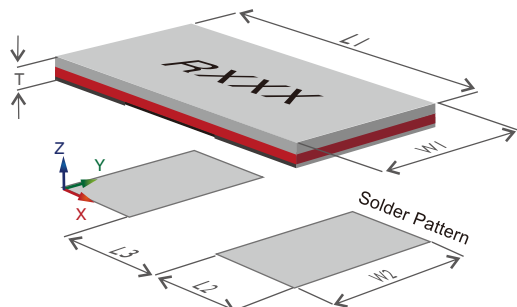
STC-Series / STE-Series	Model 型號	Pr(Watt) Power rating at 70°C or below 在環境溫度70°C 以下時的額定功率	Ro(mΩ) Device normal resistance 元件在室溫下的電阻	Rt(%) Normal resistance tolerance 元件在室溫下的 電阻誤差範圍	TCR(ppm) Temperature coefficient of resistance 電阻溫度係數
	0603-□-W50-R-□□□-□	0.5(1/2)	5~75	±1,±3,±5	±50~±100
	0805-□-W75-R-□□□-□	0.75(3/4)	4~100	±1,±3,±5	±50~±100
	1206-□-1W0-R-□□□-□	1.0	3~200	±1,±3,±5	±50~±100
	2010-□-1W0-R-□□□-□	1.0	5~250	±1,±3,±5	±50~±100
	2512-□-2W0-R-□□□-□	2.0	5~300	±1,±3,±5	±50~±100
	3921-□-3W0-R-□□□-□	3.0	5~100	±1,±3,±5	±50~±100
	4527-□-4W0-R-□□□-□	4.0	5~30	±1,±3,±5	±50~±100

HTC-Series / HTE-Series	Model 型號	Pr(Watt) Power rating at 70°C or below 在環境溫度70°C 以下時的額定功率	Ro(mΩ) Device normal resistance 元件在室溫下的電阻	Rt(%) Normal resistance tolerance 元件在室溫下的 電阻誤差範圍	TCR(ppm) Temperature coefficient of resistance 電阻溫度係數
	0805-□-1W0-R-□□□-□	1.0	2~50	±1,±3,±5	±50~±100
	1206-□-1W5-R-□□□-□	1.5	1~50	±1,±3,±5	±50~±100
	1508-□-2W0-R-□□□-□	2.0	1~50	±1,±3,±5	±50~±100
	2010-□-3W0-R-□□□-□	2.0	1~50	±1,±3,±5	±50~±100
	2512-□-3W0-R-□□□-□	3.0	1~50	±1,±3,±5	±50~±100
	3008-□-3W0-R-□□□-□	3.0	1~10	±1,±3,±5	±50~±100
	3015-□-4W0-R-□□□-□	4.0	1~50	±1,±3,±5	±50~±100
	3618-□-4W0-R-□□□-□	4.0	1~50	±1,±3,±5	±50~±100
	3921-□-5W0-R-□□□-□	5.0	1~50	±1,±3,±5	±50~±100

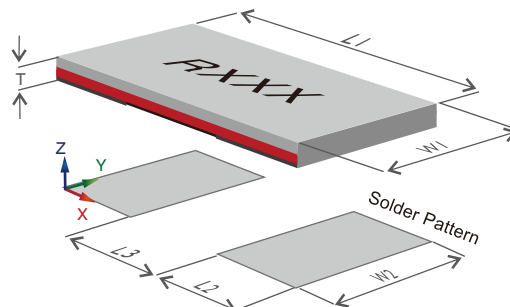
STE / STC / HTE / HTC Series / Two Terminal Type

Device and Pad-Layout Dimensions / 元件產品與焊墊建議尺寸

STC-series
Short electrode/edgeless
短電極/無側導

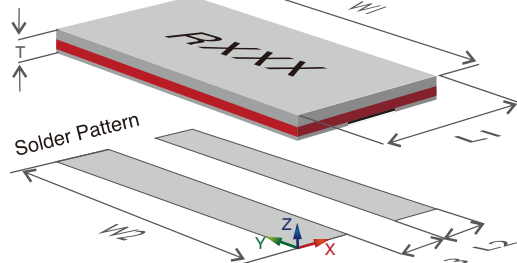


STE-series
Short electrode/with edge
短電極/有側導

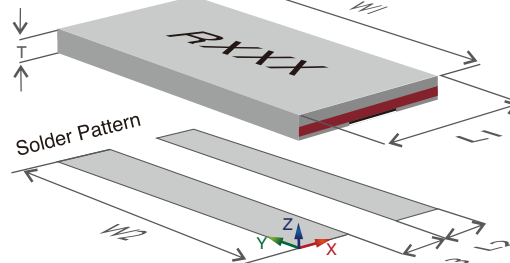


	Size / 尺寸	L1	W1	T	L2	W2	L3/min
STC-Series / STE-Series	0603	1.7±0.2	0.9±0.2	0.65±0.2	1.35	0.92	0.5
	0805	2.1±0.2	1.35±0.2	0.65±0.2	1.4	1.44	0.8
	1206	3.3±0.2	1.7±0.2	0.65±0.2	1.8	1.84	1.2
	2010	5.1±0.2	2.6±0.2	0.65±0.2	2.65	2.88	2.7
	2512	6.4±0.3	3.2±0.3	0.65±0.2	3.1	3.57	3.1
Unit(單位): mm	3921	11±0.3	5.1±0.3	0.65±0.2	4.5	5.75	5.0
	4527	11.6±1.0	7.1±1.0	0.65±0.2	4.65	8.05	5.2

HTC-series
Long electro/edgeless
長電極/無側導



HTE-series
Long electrode/with edge
長電極/有側導



	Size / 尺寸	L1	W1	T	L2	W2	L3/min
HTC-Series / HTE-Series	0805	1.35±0.2	2.10±0.2	0.65±0.2	1.1	2.3	0.6
	1206	1.7±0.2	3.30±0.2	0.65±0.2	1.3	3.68	0.6
	1508	2.60±0.2	3.8±0.2	0.65±0.2	2.33	4.26	0.85
	2010	2.60±0.2	5.1±0.2	0.65±0.2	2.25	5.75	1.00
	2512	3.20±0.3	6.4±0.3	0.65±0.2	2.35	7.25	1.4
	3008	2.6±0.3	7.6±0.3	0.65±0.2	2.28	8.63	1.0
	3015	3.9±0.3	7.7±0.3	0.65±0.2	2.55	8.74	1.7
	3618	4.6±0.3	9.1±0.3	0.65±0.2	2.7	10.35	2.1
Unit(單位): mm	3921	5.1±0.3	11.1±0.4	0.65±0.2	2.8	12.65	2.4

HFCL / SFC / HFC Series / Four Terminal Type

Product Material / 產品材料

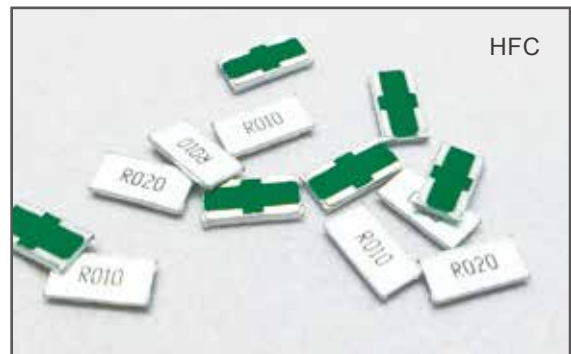
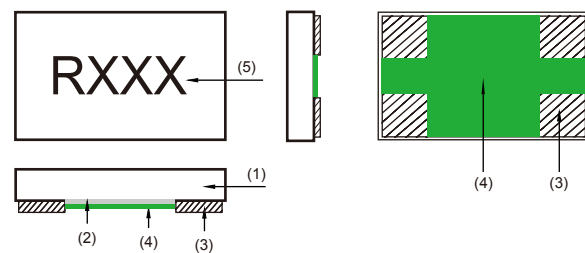
No. 號碼	Material / 材質	Description / 說明
①	Substrate / 基板	Alumina Ceramic (Alumina 96%) / 氧化鋁陶瓷基板 (氧化鋁含量達 96%)
②	Resistive Element / 電阻本體	Cu - Alloy / 銅合金
③	Terminal Electrode / 端電極	Sn、Ni、Cu / 錫、鎳、銅
④	Protective Coating / 保護防焊層	Flame-Retardant Epoxy, Meets UL- 94-V0 Requirements(Green) / 防火級環氧樹脂, 符合UL- 94-V0 要求(綠色)
⑤	Marking Coating / 文印防焊層	Flame-Retardant Epoxy, Meets UL- 94-V0 Requirements (Black) / 防火級環氧樹脂, 符合UL- 94-V0 要求(黑色)
⑥	Edge electrode / 側邊電極	Sn、Ni、Cu / 錫、鎳、銅



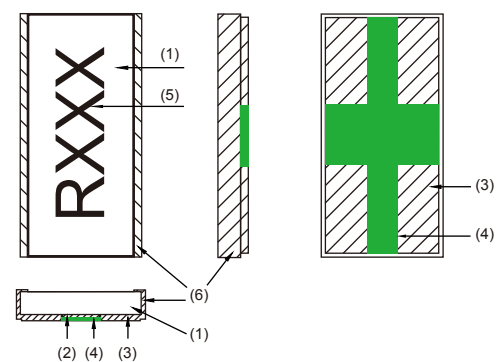
HFCL Dimensions / HFCL尺寸圖 (Unit / 單位:mm)



SFC Dimensions / SFC尺寸圖 (Unit / 單位:mm)



HFC Dimensions / HFC尺寸圖 (Unit / 單位:mm)

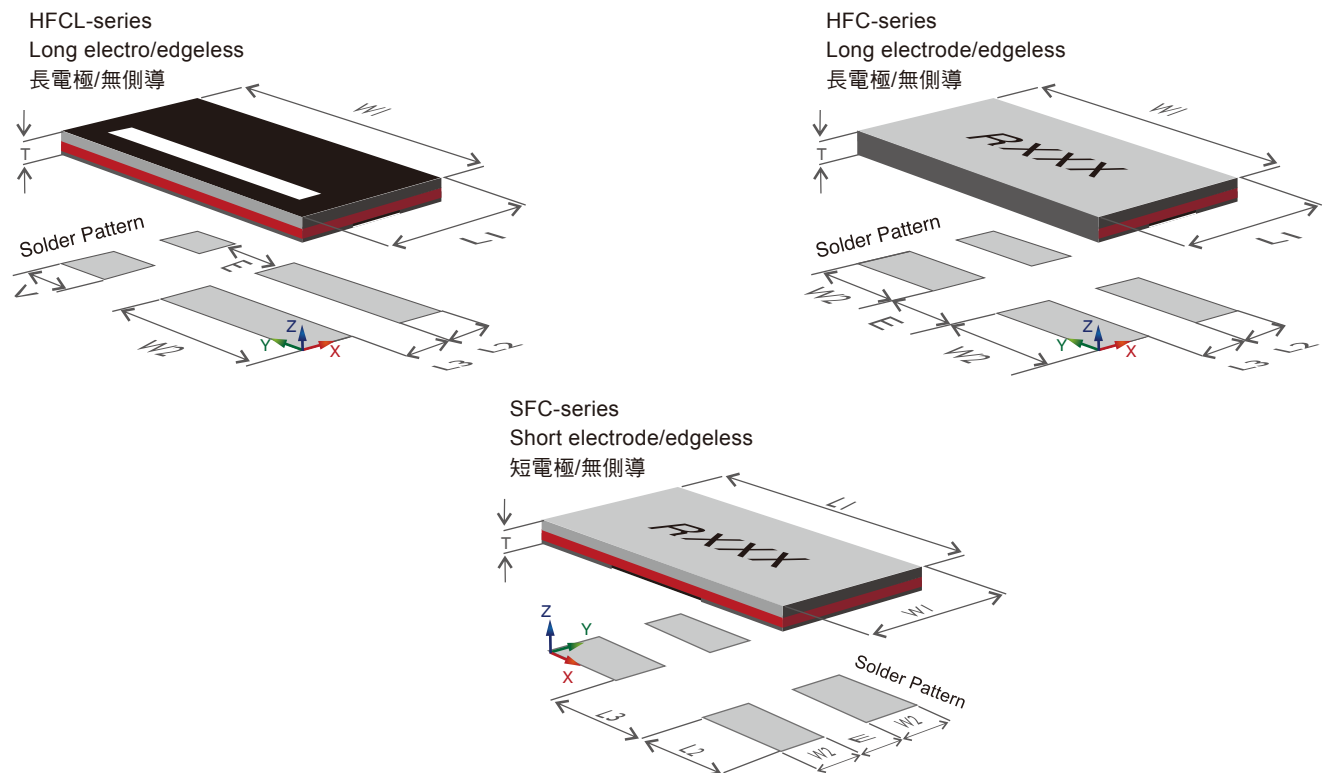


HFCL / SFC / HFC Series / Four Terminal Type

Standard Specification / 規格標準

Product Series	Model 型號	Pr(Watt)	Ro(mΩ)	Rt(%)	TCR(ppm)
		Power rating at 70°C or below 在環境溫度70°C以下時的額定功率	Device normal resistance 元件在室溫下的電阻	Normal resistance tolerance 元件在室溫下的電阻誤差範圍	Temperature coefficient of resistance 電阻溫度係數
HFCL-Series	1206-□-1W0-R-□□□-□	1.0	0.5~10	±0.5,±1,±3	±50~±200
SFC-Series	1206-□-0W5-R-□□□-□	0.5	5~20	±0.5,±1,±3	±50~±100
HFC-Series	2512-□-2W0-R-□□□-□	2.0	4~20	±0.5,±1,±3	±50~±100

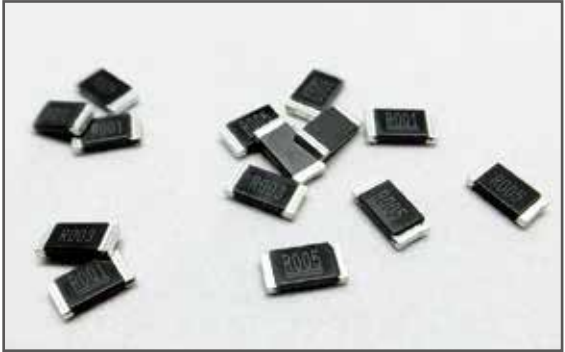
Device and Pad-Layout Dimensions / 元件產品與焊墊建議尺寸



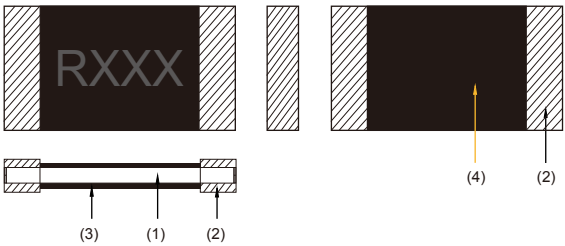
Unit(單位): mm	Size / 尺寸	L1	W1	T	L2	W2	L3/min	V	E
HFCL-Series	1206	1.6±0.2	3.2±0.2	0.6±0.2	1.3	2.29	0.6	0.7	0.4
SFC-Series	1206	3.2±0.2	1.6±0.2	0.6±0.2	1.9	1.1	0.7	-----	0.3
HFC-Series	2512	2.0±0.2	6.3±0.2	0.6±0.2	2.7	2.35	1.05	-----	1.4

Product Material / 產品材料

No. 號碼	Material / 材質	Description / 說明
①	Resistive Element / 電阻本體	Cu - Alloy / 銅合金
②	Terminal Electrode / 端電極	Sn、Ni、Cu / 錫、鎳、銅
③	Protective Coating / 保護防焊層	Flame-Retardant Epoxy, Meets UL- 94-V0 Requirements(Black) / 防火級環氧樹脂, 符合UL- 94-V0 要求(黑色)
④	Marking Coating / 文印防焊層	Flame-Retardant Epoxy, Meets UL- 94-V0 Requirements (White) / 防火級環氧樹脂, 符合UL- 94-V0 要求(白色)



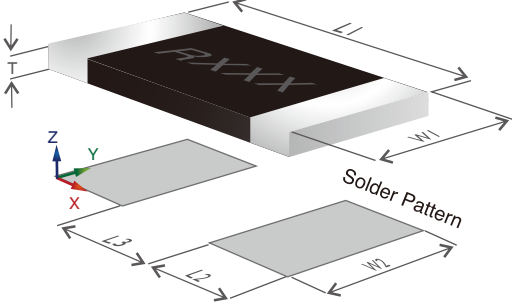
MSH Dimensions / MSH尺寸圖 (Unit / 單位:mm)



Standard Specification / 規格標準

Product Series	Model 型號	Pr(Watt)	Ro(mΩ)	Rt(%)	TCR(ppm)
		Power rating at 70°C or below 在環境溫度70°C 以下時的額定功率	Device normal resistance 元件在室溫下的電阻	Normal resistance tolerance 元件在室溫下的電阻誤差範圍	Temperature coefficient of resistance 電阻溫度係數
MSH-Series	2512-□-2W0-R-□□□-□	2.0 / 3.0	1~10	±1,±3,±5	±75~±100

MSH-series
Short electrode/with edge
短電極/有側導



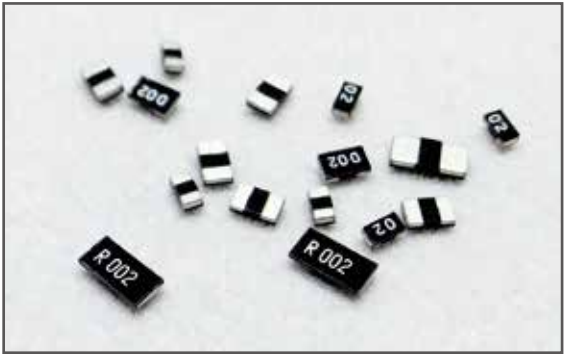
Device and Pad-Layout Dimensions / 元件產品與焊墊建議尺寸

Unit(單位): mm	Size / 尺寸	L1	W1	T	L2	W2	L3/min	V	E
MSH-Series	2512	6.4±0.2	3.2±0.2	1.2±0.2	2.11	3.57	3.18	-----	-----

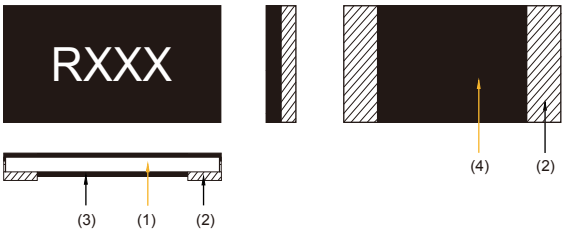
MSTC Series / Metal Plate Type

Product Material / 產品材料

No. 號碼	Material / 材質	Description / 說明
①	Resistive Element / 電阻本體	Cu - Alloy / 銅合金
②	Terminal Electrode / 端電極	Sn、Ni、Cu / 錫、鎳、銅
③	Protective Coating / 保護防焊層	Flame-Retardant Epoxy, Meets UL- 94-V0 Requirements(Black) / 防火級環氧樹脂, 符合UL- 94-V0 要求(黑色)
④	Marking Coating / 文印防焊層	Flame-Retardant Epoxy, Meets UL- 94-V0 Requirements (White) / 防火級環氧樹脂, 符合UL- 94-V0 要求(白色)



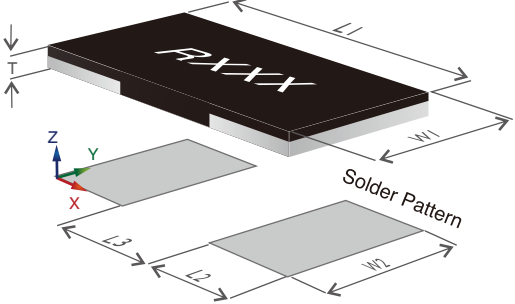
MSTC Dimensions / MSTC尺寸圖 (Unit / 單位:mm)



Standard Specification / 規格標準

Product Series	Model 型號	Pr(Watt)	Ro(mΩ)	Rt(%)	TCR(ppm)
		Power rating at 70°C or below 在環境溫度70°C 以下時的額定功率	Device normal resistance 元件在室溫下的電阻	Normal resistance tolerance 元件在室溫下的電阻誤差範圍	Temperature coefficient of resistance 電阻溫度係數
MSTC-Series	0603-□-0W3-R-□□□-□	0.3	2~20	±1,±3,±5	±100~±150
	0805-□-0W5-R-□□□-□	0.5	2~20	±1,±3,±5	±100~±150
	1206-□-1W0-R-□□□-□	1.0	2~20	±1,±3,±5	±100~±150

MSTC-series Short electrode/with edge 短電極/有側導



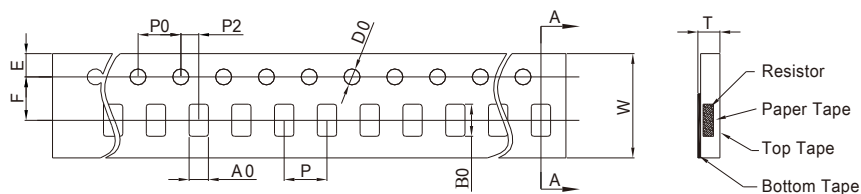
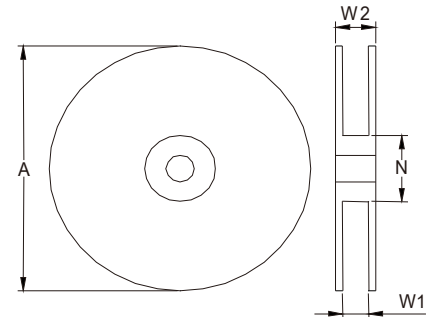
Device and Pad-Layout Dimensions / 元件產品與焊墊建議尺寸

Unit(單位): mm	Size / 尺寸	L1	W1	T	L2	W2	L3/min	V	E
MSTC-Series	0603	1.6±0.25	0.8±0.25	0.4±0.25	1.35	0.92	0.6	-----	-----
	0805	2.00±0.25	1.25±0.25	0.4±0.25	1.4	1.44	0.8	-----	-----
	1206	3.2±0.25	1.6±0.25	0.4±0.25	1.9	1.84	1.2	-----	-----

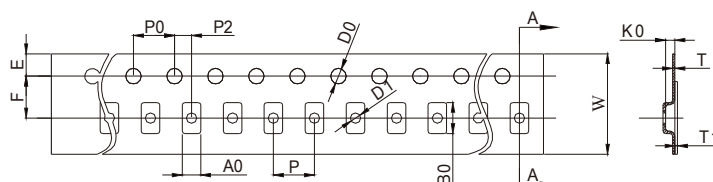
Products Packing Specifications / 產品包裝規格

Type / 型式	Size / 尺寸	Pr(Watt)	Ro(mΩ)	Quantity / 數量
CSR / SMD	4527/5931	All Models 型號	Reel Packing 圓盤式包裝	1000pcs / pack
	3015/3618/3921			2000pcs / pack
	1508/2010/2512/3008			4000pcs / pack
	0603/0805/1206			5000pcs / pack

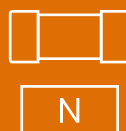
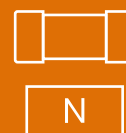
Size / 尺寸	A	N	W1	W2
3921/4527/5931	178±5	60±2	24.3+1/-0	Max.26.5
3008/3015/3618	178±5	60±2	16.3+1/-0	Max.21.0
1508/2010/2512	178±5	60±2	12.3+1/-0	Max.18.4
0603/0805/1206	178±5	60±2	8.4+1/-0	Max.18.4



Size / 尺寸	W	PO	P1	P2	A0	B0	D0	F	E	T
0603	8.00±0.10	4.00±0.10	4.00±0.10	2.00±0.10	1.20±0.20	1.90±0.20	1.50±0.10	3.50±0.10	1.75±0.10	0.80±0.05
0805	8.00±0.10	4.00±0.10	4.00±0.10	2.00±0.10	1.60±0.20	2.30±0.20	1.50±0.10	3.50±0.10	1.75±0.10	0.80±0.05



Size / 尺寸	W	PO	P1	P2	A0	B0	D0	F	E1	T	T1	KO
1206	8.00±0.30	4.00±0.10	4.00±0.10	2.00±0.10	1.82±0.15	3.53±0.15	1.50±0.10	3.50±0.10	1.75±0.10	0.20±0.10	Max.0.10	0.80±0.10
1508	12.00±0.30	4.00±0.10	4.00±0.10	2.00±0.10	2.30±0.15	4.10±0.15	1.50±0.10	3.50±0.10	1.75±0.10	0.20±0.10	Max.0.10	0.80±0.10
2010	12.00±0.30	4.00±0.10	4.00±0.10	2.00±0.10	3.00±0.20	5.60±0.2	1.50±0.10	5.50±0.10	1.75±0.10	0.25±0.10	Max.0.10	0.80±0.10
2512	12.00±0.30	4.00±0.10	4.00±0.10	2.00±0.10	3.40±0.15	6.70±0.15	1.50±0.10	5.50±0.10	1.75±0.10	0.20±0.10	Max.0.10	0.80±0.10
3008	16.00±0.30	4.00±0.10	4.00±0.10	2.00±0.10	2.30±0.20	8.00±0.2	1.50±0.10	5.50±0.10	1.75±0.10	0.25±0.10	Max.0.10	0.80±0.10
3015	16.00±0.30	4.00±0.10	4.00±0.10	2.00±0.10	4.15±0.15	7.95±0.15	1.50±0.10	5.50±0.10	1.75±0.10	0.20±0.10	Max.0.10	0.80±0.10
3618	16.00±0.30	4.00±0.10	4.00±0.10	2.00±0.10	4.85±0.20	9.35±0.2	1.50±0.10	5.50±0.10	1.75±0.10	0.25±0.10	Max.0.10	0.80±0.10
3921	24.00±0.30	4.00±0.10	4.00±0.10	2.00±0.10	5.50±0.15	11.50±0.2	1.50±0.10	5.50±0.10	1.75±0.10	0.25±0.10	Max.0.10	0.80±0.10
4527	24.00±0.30	4.00±0.10	4.00±0.10	2.00±0.10	7.00±0.20	11.50±0.2	1.50±0.10	5.50±0.10	1.75±0.10	0.20±0.10	Max.0.10	0.80±0.10
5931	24.00±0.30	4.00±0.10	4.00±0.10	2.00±0.10	7.50±0.20	15.0±0.15	1.50±0.10	5.50±0.10	1.75±0.10	0.20±0.10	Max.0.10	0.80±0.10



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