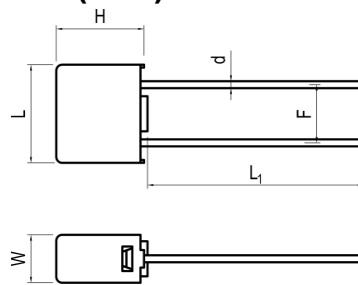
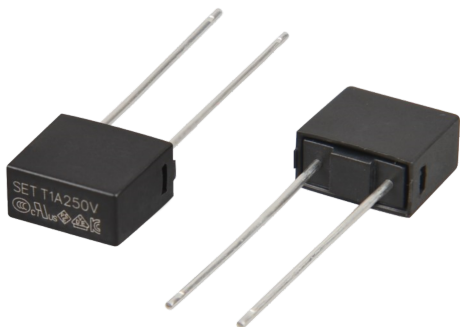


# 超小型熔断体

Sub-miniature Fuse-links (SFL)

SPT478系列 Series, 慢断 Time-Lag, 塑料壳 Plastic Case

## 尺寸 Dimensions (mm)



L	L <sub>1</sub>	W	H	d	F
8.4±0.5	18.5±1.0	4.1±0.3	7.35±0.50	Φ0.60±0.05	5.08±0.20

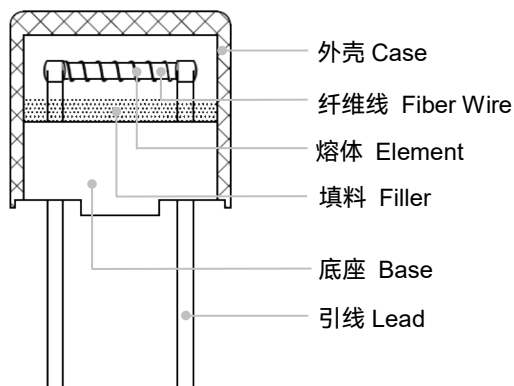
## 关键特性 Key Features

- 体积小 Miniature Size
- 慢断 Time-Lag
- 抗浪涌 Surge Protection
- 执行标准: IEC 60127-3/Sheet 4、UL248-14  
Designed to IEC 60127-3/Sheet 4 and UL248-14
- 无铅 Lead-free (Pb-free)
- 环保型产品 RoHS & REACH Compliant

## 应用 Applications

- 电源 Power Supply
- 家电 Household Appliance
- 防雷器 SPD
- 通用照明 General Lighting
- 智能家居 Smart Home
- 办公设备 Office Equipment
- 电动工具 Electric Tool
- 医疗设备 Medical Equipment

## 结构图 Structure



## 型号说明 Product Number System

SPT478 T 1A 250V



## 安规认证 Agency Approvals

安规认证 Agency Approvals	认证号 Agency File Number	电流范围 Ampere Range
	E345932	100 mA ~ 10 A
	40049409	100 mA ~ 10 A
	PSE18021398 PSE18021397	1 A ~ 5 A 6.3 A ~ 10 A
	2020980207000070 <sup>a</sup>	100 mA ~ 10 A
	SU05023-18002 SU05023-18005 SU05023-18001 SU05023-18003 SU05023-18004	100 mA 125 mA ~ 800 mA 1 A ~ 2.5 A 3.15 A ~ 6.3 A 8 A ~ 10 A

备注: “a”为强制性认证产品符合性自我声明编号。  
Remark: “a” is self-declaration number for conformity of Compulsory certification products.

Miniature Fuses

Miniature Fuses

术语 Glossary

项目 Item	描述 Description
熔断器 Fuse	<p>一种装置，当通过该装置的电流超过规定值，并持续足够的时间，该装置中一个或多个经特殊设计、特殊配比的部件熔断，断开其所接入的电路，从而切断电流。</p> <p>A device, by the fusing of one or more of its specially designed and proportioned components, opens the circuit in which it is inserted by breaking the current when this exceeds a given value for a sufficient time.</p> <p>—(IEC 60127)</p>
额定电流 Rated Current	<p>熔断器的额定电流是根据其可控制测试条件的截流能力确定的。每个熔断器上都应标上额定电流，它可以是数字、字母、或色码。</p> <p>The rated current of a fuse identifies its current-carrying capacity based on a controllable set of test conditions. Each fuse is marked with its rated current, this rating can be identified with a numeric, alpha, or color code mark.</p> <p>—(IEC 60127)</p>
额定电压 Rated Voltage	<p>熔断器可以使用的最大安全开断电压，超过额定电压将影响断开过载和短路电路的能力。</p> <p>A Max. open circuit voltage in which a fuse can be used, yet safely interrupt an overcurrent. Exceeding the voltage rating of a fuse impairs its ability to clear an overload or short circuit safely.</p> <p>—(IEC 60127)</p>
标称熔化热能 Ampere Squared Seconds $I^2t$	<p>在电流平方对给定时间间隔的积分，被称为<math>I^2t</math>。它是熔断所需的热能。熔断<math>I^2t</math>可以是熔化<math>I^2t</math>，飞弧<math>I^2t</math>，或二者之和。</p> <p>The melting, arcing, or clearing integral of a fuse, termed <math>I^2t</math>, is the thermal energy required to melt, arc, or clear a specific current. It can be expressed as melting <math>I^2t</math>, arcing <math>I^2t</math> or the sum of them, clearing <math>I^2t</math>.</p> <p>—(IEC 60127)</p>
过载 Overload	<p>电流超过额定负荷的2到5倍，且保持正常的电流路径。</p> <p>Can be classified as an overcurrent which exceeds the normal full load current of a circuit by 2 to 5 times its magnitude and stays within the normal current path.</p> <p>—(UL 248)</p>
过电流 Overcurrent	<p>在一个电路中，超过正常负载电流的电流称为过电流。过电流包括过载电流和短路电流。</p> <p>A condition which exists in an electrical circuit when the normal load current is exceeded. Overcurrent take on two separate characteristics-overloads and short circuits.</p> <p>—(UL 248)</p>
短路 Short Circuit	<p>将短路是电流不流过正常电路而引起的过电流，它大大超出了正常满载电流数十、数百甚至数千倍。</p> <p>An overcurrent that leaves the normal current path and greatly exceeds the normal full load current of the circuit by a factor of tens, hundreds, or thousands times.</p> <p>—(UL 248)</p>
分断能力 Breaking Capacity of a Fuse-link	<p>在规定的使用和性能条件下，熔断器在规定电压下能分断的预期电流值（对交流为有效值）。</p> <p>Value (r.m.s. for AC) of prospective current that a fuse-link is capable of breaking at a stated voltage under prescribed conditions of use and behaviour.</p> <p>—(IEC 60127)</p>

Miniature Fuses






Miniature Fuses

# 超小型熔断体

Sub-miniature Fuse-links (SFL)

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## 技术参数 Specifications

系列 Series	额定电流 Rated Current	最大压降 Max. Voltage Drop <sup>a</sup>	平均熔化 热能值 Average Typical Melting $I^2t$ <sup>b</sup>	安规认证 Agency Approvals					环境 Environmental	
									RoHS	REACH
				CCC	VDE	KC	PSE	cURus		
SPT478	0.1	350	0.039	●	●	●		●	●	
SPT478	0.125	300	0.069	●	●	●		●	●	
SPT478	0.16	280	0.11	●	●	●		●	●	
SPT478	0.2	260	0.16	●	●	●		●	●	
SPT478	0.25	240	0.29	●	●	●		●	●	
SPT478	0.315	220	0.5	●	●	●		●	●	
SPT478	0.4	200	0.91	●	●	●		●	●	
SPT478	0.5	190	1.51	●	●	●		●	●	
SPT478	0.63	180	2.38	●	●	●		●	●	
SPT478	0.8	160	3.78	●	●	●		●	●	
SPT478	1	140	9.0	●	●	●	●	●	●	
SPT478	1.25	130	13.3	●	●	●	●	●	●	
SPT478	1.6	120	17.9	●	●	●	●	●	●	
SPT478	2	100	34.8	●	●	●	●	●	●	
SPT478	2.5	100	49.4	●	●	●	●	●	●	
SPT478	3.15	100	66.5	●	●	●	●	●	●	
SPT478	4	100	112	●	●	●	●	●	●	
SPT478	5	100	165	●	●	●	●	●	●	
SPT478	6.3	100	250	●	●	●	●	●	●	
SPT478	8	80	416	●	●	●	●	●	●	
SPT478	10	75	750	●	●	●	●	●	●	

a: 最大压降 (环境温度23 °C时, 在额定电流下测得)。

Max. Voltage Drop (voltage drop was measured at 23 °C ambient temp. at rated current).

b:  $I^2t$ 是在10倍额定电流测试下得到的。 $I^2t$  value is measured at 10  $I_N$ .

分断能力 Breaking Capacity:

CCC / VDE / PSE / KC: 35 A @ 250 Vac or 10  $I_N$  @ 250 Vac Whichever is Greater

UL / cUL: 150 A @ 125 V / 250 V / 300 V / 350 V / 400 V

Miniature Fuses

Miniature Fuses

超小型熔断体

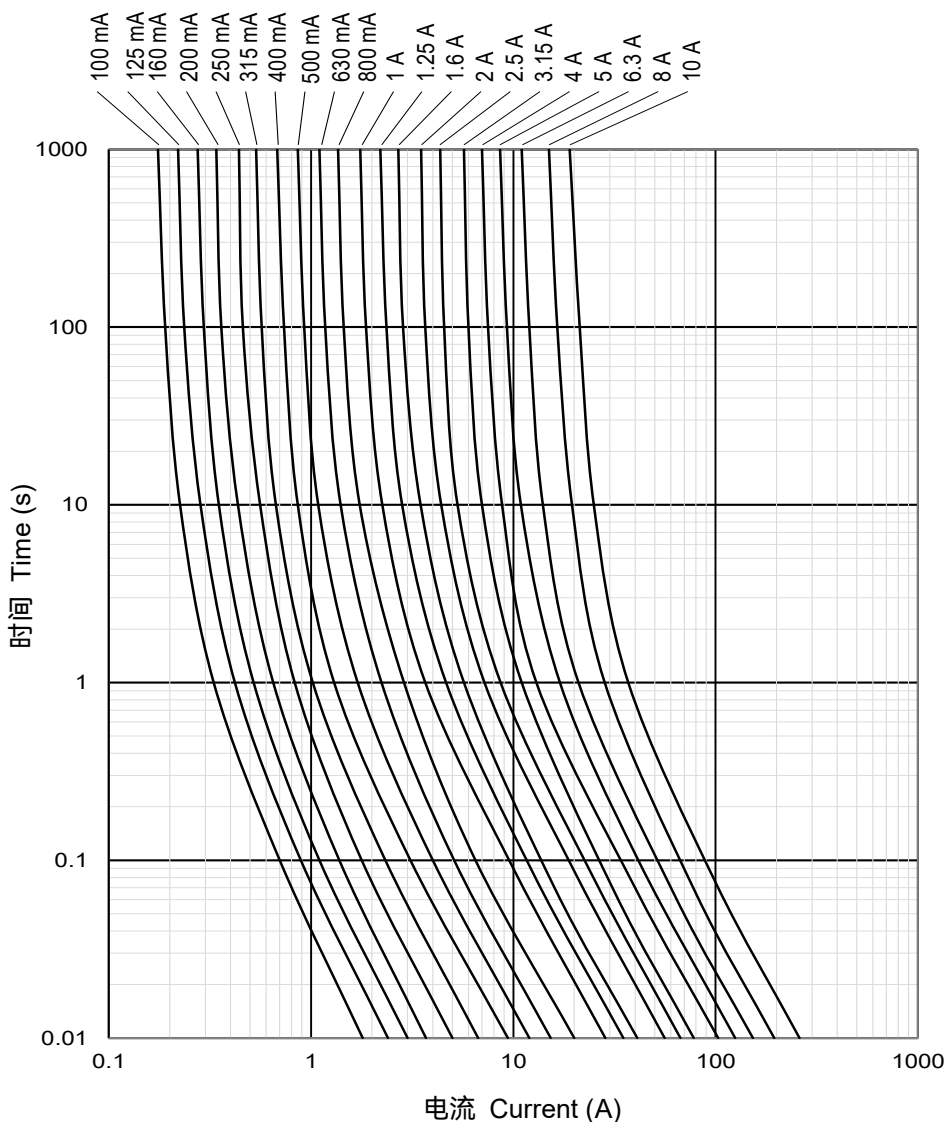
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熔断特性 Pre-arcing Time/Current Characteristic

额定电流 Rated Current	2.1I <sub>N</sub>	2.75I <sub>N</sub>		4I <sub>N</sub>		10I <sub>N</sub>	
	最大 Max.	最小 Min.	最大 Max.	最小 Min.	最大 Max.	最小 Min.	最大 Max.
0.1 A ~ 6.3 A	2 minutes	400 ms	10 s	150 ms	3 s	20 ms	150 ms
8 A ~ 10 A	5 minutes	1 s	20 s	150 ms	3 s	20 ms	150 ms

时间电流特性曲线 Time Current Curve (仅供参考 For Reference Only)



Miniature Fuses

Miniature Fuses

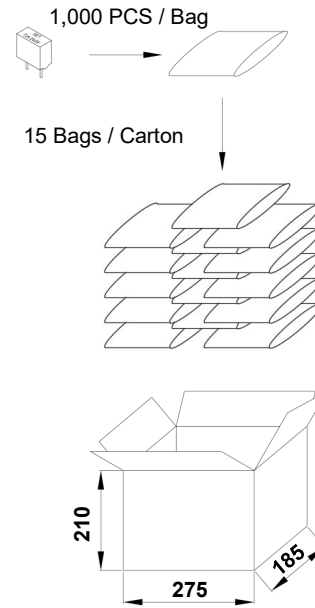
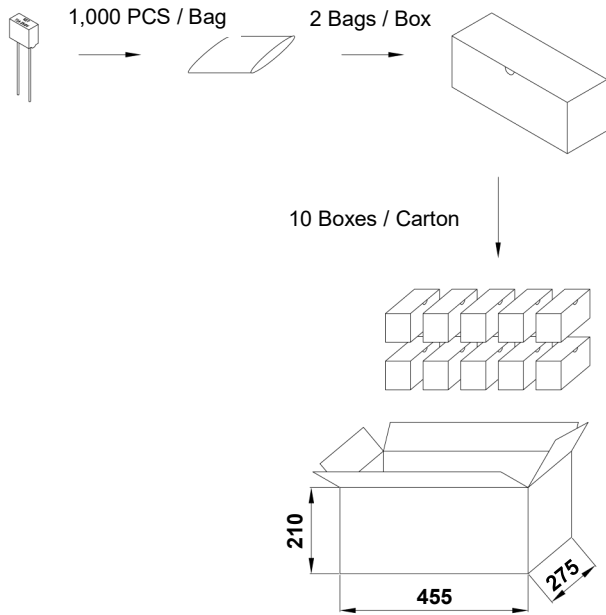
# 超小型熔断体

Sub-miniature Fuse-links (SFL)

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## 包装信息 Packaging Information

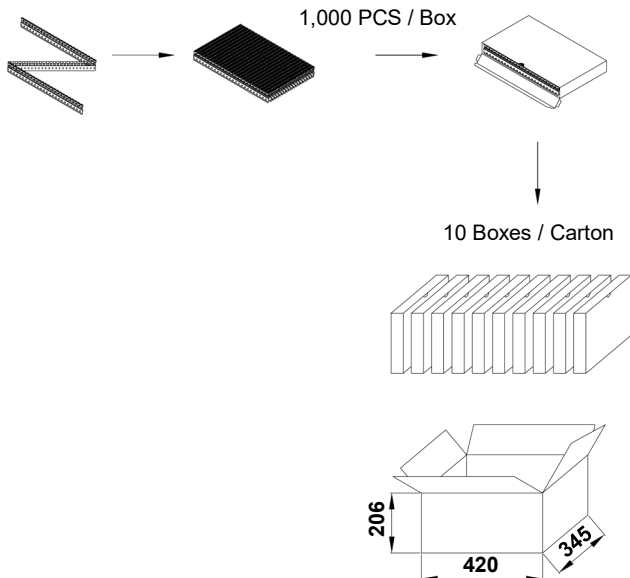
尺寸 Dimensions (mm)



长脚 Long Leg			
项目 Item	PE袋 Bag	盒 Box	箱 Carton
数量 Q'ty (PCS)	1,000	2,000	20,000
毛重 Gross Weight (kg)	7.6 ± 10%		

短脚 Short Leg		
项目 Item	PE袋 Bag	箱 Carton
数量 Q'ty (PCS)	1,000	15,000
毛重 Gross Weight (kg)	4.6 ± 10%	

尺寸 Dimensions (mm)



编带 Taping		
项目 Item	盒 Box	箱 Carton
数量 Q'ty (PCS)	1,000	10,000
毛重 Gross Weight (kg)	6.0 ± 10%	

Miniature Fuses

Miniature Fuses



# 注意

## ATTENTION

### 检测 Inspection

#### 冷电阻测试 Cold Resistance Test

- 环境温度为 $(23\pm 2)$  °C，测试电流不大于熔断器额定电流的10%。  
Applied current shall be less than 10% of rated current, at ambient Temp. of  $(23\pm 2)$  °C.
- 采用四端测试法 (4-Wire) Resistance Measurement.

### 使用 Usage

- 通电情况下请勿直接接触熔断器本体或引线，防止烫伤或触电。  
Do not touch the fuse body or lead wire when power on, avoiding scald or electric shock.
- 气压在80 kPa 到106 kPa，对应海拔为+2000 m至- 500 m。  
Air pressure is 80 kPa to 106 kPa. These values represent an altitude of +2000 m to -500 m, respectively.

### 更换 Replacement

基于安全原因，熔断器是不可修复的产品，替换时应使用同类别同型号的产品。

For safety reasons, the Fuse is the non-resettable product, please ensure that the alternative Fuse is the same type when replace it.

### 贮存 Storage

熔断器的贮存应避免高温、高湿、日光直射和腐蚀性气体的场合，以免影响引脚可焊性，产品购入后请于1年内使用完毕。

Please store the fuse in the environment without high temperature, high humidity or corrosive gas, to avoid reducing the solderability of the lead wire. Please use them up within 1 year after receiving the goods.

# 超小型熔断体

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## 安装 Installation

### 机械应力 Mechanical stress

安装过程和安装后不宜对熔断器本体施加机械应力。

Do not apply mechanical stress to the fuse body during or after the installation.

## 焊接参数 Soldering Parameters

### 波峰焊参数 Wave soldering Parameters (仅供参考 For Reference Only)

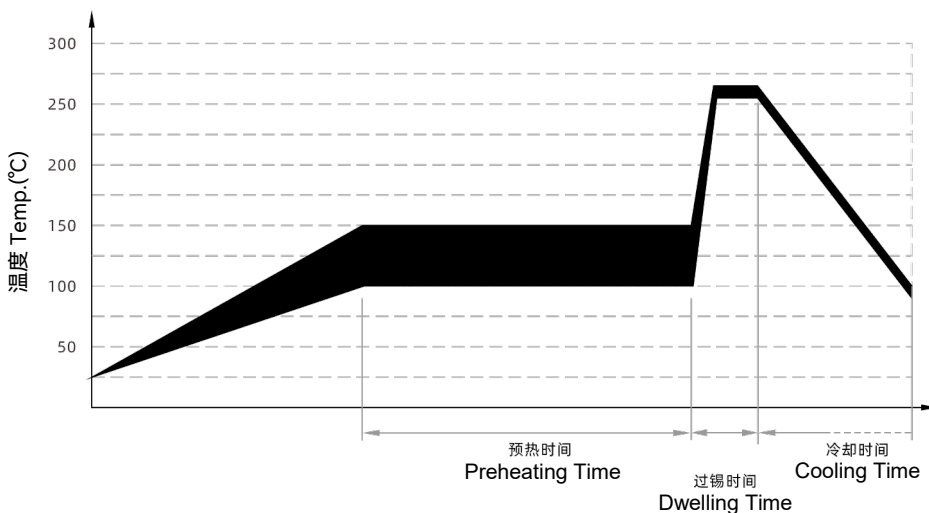


表3 TABLE 3

项目 Item	温度 Temp. (°C)	时间 Time (s)
预热 Preheating	100 - 150	60 - 180
过锡 Dwelling	255 - 265	4 - 8

### 推荐的手工焊参数 Recommended Soldering Parameters

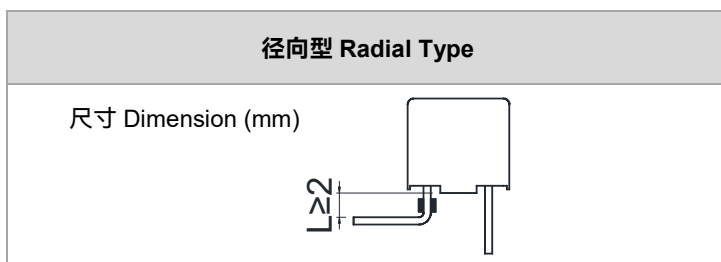
烙铁温度 Solder Iron Temp.:  $(350 \pm 5) ^\circ\text{C}$

焊接时间 Soldering Time:  $\leq 5 \text{ s}$

## 引脚弯曲 Lead Wire Bending

如果要弯折引脚，那么应确保弯折处与主体间的距离，如下表。

If the lead wire has to be bent, please pay attention to the distance between body and the bending point. Refer to the following table.



## 安装位置 Installation Position

勿将熔断器安装在可能经常出现剧烈振动的位置。

Do not install the fuse on a location that may often subject to severe continuous vibration.