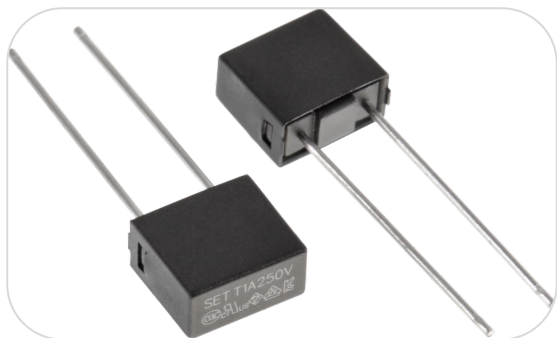
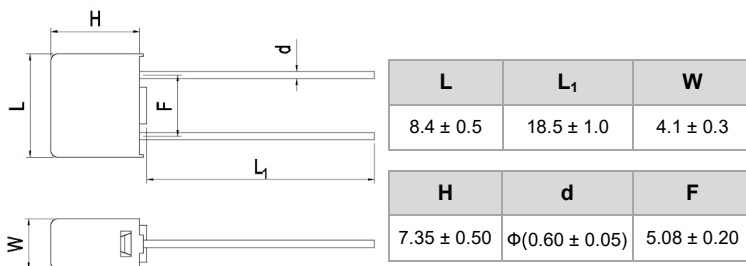


# Miniature Fuses (Sub-miniature Fuse-links)

## SPT478 Series, Time-Lag, Plastic Case



### Dimensions (mm)



### Description

Sub-miniature fuse, Time-Lag, designed to IEC & UL standards.

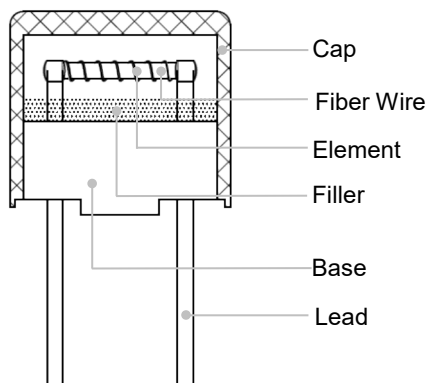
### Features

- Miniature Size
- Time-Lag
- Surge Protection
- Designed to IEC 60127-3 Sheet 4, GB/T 9364.3 Sheet 4
- Lead-free (Pb-free)
- RoHS & REACH Compliant

### Applications

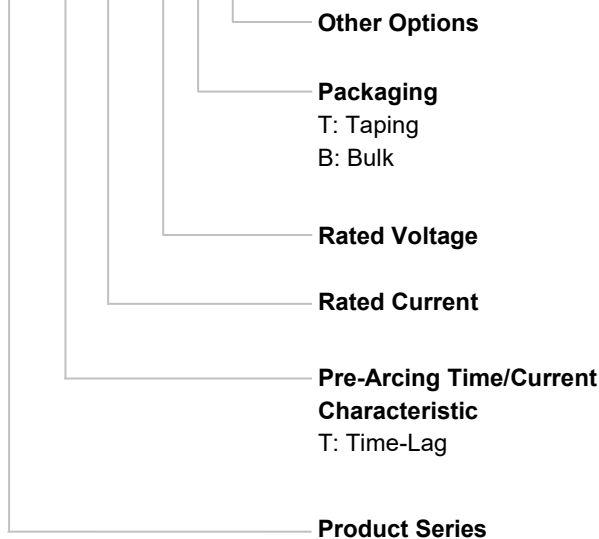
- Power Supply
- Household Appliance
- General Lighting
- Smart Home
- Office Equipment
- Electric Tool
- Medical Equipment
- SPD

### Structure Diagram



### Part Numbering System

SPT478 T1.25A250VT-001



### Agency Approvals

Agency Approvals	Agency File Number	Ampere Range (A)
	E345932	0.1 to 10
	40049409	0.1 to 10
	PSE18021398 PSE18021397	1 to 5 6.3 to 10
	2020980207000070	0.1 to 10
	SU05023-18002 SU05023-18005 SU05023-18001 SU05023-18003 SU05023-18004	0.1 0.125 to 0.8 1 to 2.5 3.15 to 6.3 8 to 10

**Glossary**

Item	Description
<b>Fuse</b>	An overcurrent protective device with a fusible link that operates and permanently opens the circuit on an overcurrent condition.
<b>Rated Current</b>	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.
<b>Rated Voltage</b>	A maximum open circuit voltage in which a fuse can be used, yet safely interrupt an over-current. Exceeding the voltage rating of a fuse impairs its ability to clear an overload or short circuit safely.
<b>Ampere Squared Seconds <math>I^2t</math></b>	The melting, arcing, or clearing integral of a fuse, termed $I^2t$ , is the thermal energy required to melt, arc, or clear a specific current. It can be expressed as melting $I^2t$ , arcing $I^2t$ or the sum of them, clearing $I^2t$ .
<b>Time-current Characteristics</b>	Under stated conditions of operation, the value of time as a function of the prospective current.
<b>Rated Breaking Capacity</b>	Value (r.m.s. for a.c.) of prospective current that a fuse-link is capable of breaking at a stated voltage under prescribed conditions of use and behaviour.

Miniature Fuses






Miniature Fuses

# Miniature Fuses

(Sub-miniature Fuse-links)

## SPT478 Series, Time-Lag, Plastic Case

### Specifications

Model	Rated Current	Max. Voltage Drop <sup>a</sup>	Max. Sustained Power Dissipation at 1.5 I <sub>N</sub>	Typical Melting I <sup>2</sup> t <sup>b</sup>	Agency Approvals					Environmental	
										RoHS	REACH
					CCC	VDE	KC	PSE	cURus		
SPT478T100mA	0.1	350	170	0.04	●	●	●		●	●	●
SPT478T125mA	0.125	300	180	0.07	●	●	●		●	●	●
SPT478T160mA	0.16	280	190	0.11	●	●	●		●	●	●
SPT478T200mA	0.2	260	200	0.16	●	●	●		●	●	●
SPT478T250mA	0.25	240	220	0.29	●	●	●		●	●	●
SPT478T315mA	0.315	220	250	0.50	●	●	●		●	●	●
SPT478T400mA	0.4	200	280	0.91	●	●	●		●	●	●
SPT478T500mA	0.5	190	310	1.51	●	●	●		●	●	●
SPT478T630mA	0.63	180	360	2.38	●	●	●		●	●	●
SPT478T800mA	0.8	160	430	3.78	●	●	●		●	●	●
SPT478T1A	1	140	500	9.00	●	●	●	●	●	●	●
SPT478T1.25A	1.25	130	600	13	●	●	●	●	●	●	●
SPT478T1.6A	1.6	120	730	18	●	●	●	●	●	●	●
SPT478T2A	2	100	870	35	●	●	●	●	●	●	●
SPT478T2.5A	2.5	100	1000	49	●	●	●	●	●	●	●
SPT478T3.15A	3.15	100	1200	66	●	●	●	●	●	●	●
SPT478T4A	4	100	1400	112	●	●	●	●	●	●	●
SPT478T5A	5	100	1500	165	●	●	●	●	●	●	●
SPT478T6.3A	6.3	100	1650	250	●	●	●	●	●	●	●
SPT478T8A	8	80	1800	416	●	●	●	●	●	●	●
SPT478T10A	10	75	2000	750	●	●	●	●	●	●	●

a: Max. Voltage Drop (voltage drop is measured at (23 ± 1) °C ambient temp. at rated current).

b: I<sup>2</sup>t value is measured at 10 I<sub>N</sub>.

Breaking Capacity:

CCC / VDE / PSE / KC: 35 A @ 250 VAC or 10 I<sub>N</sub> @ 250 VAC Whichever is Greater

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

Miniature Fuses

Miniature Fuses

# Miniature Fuses

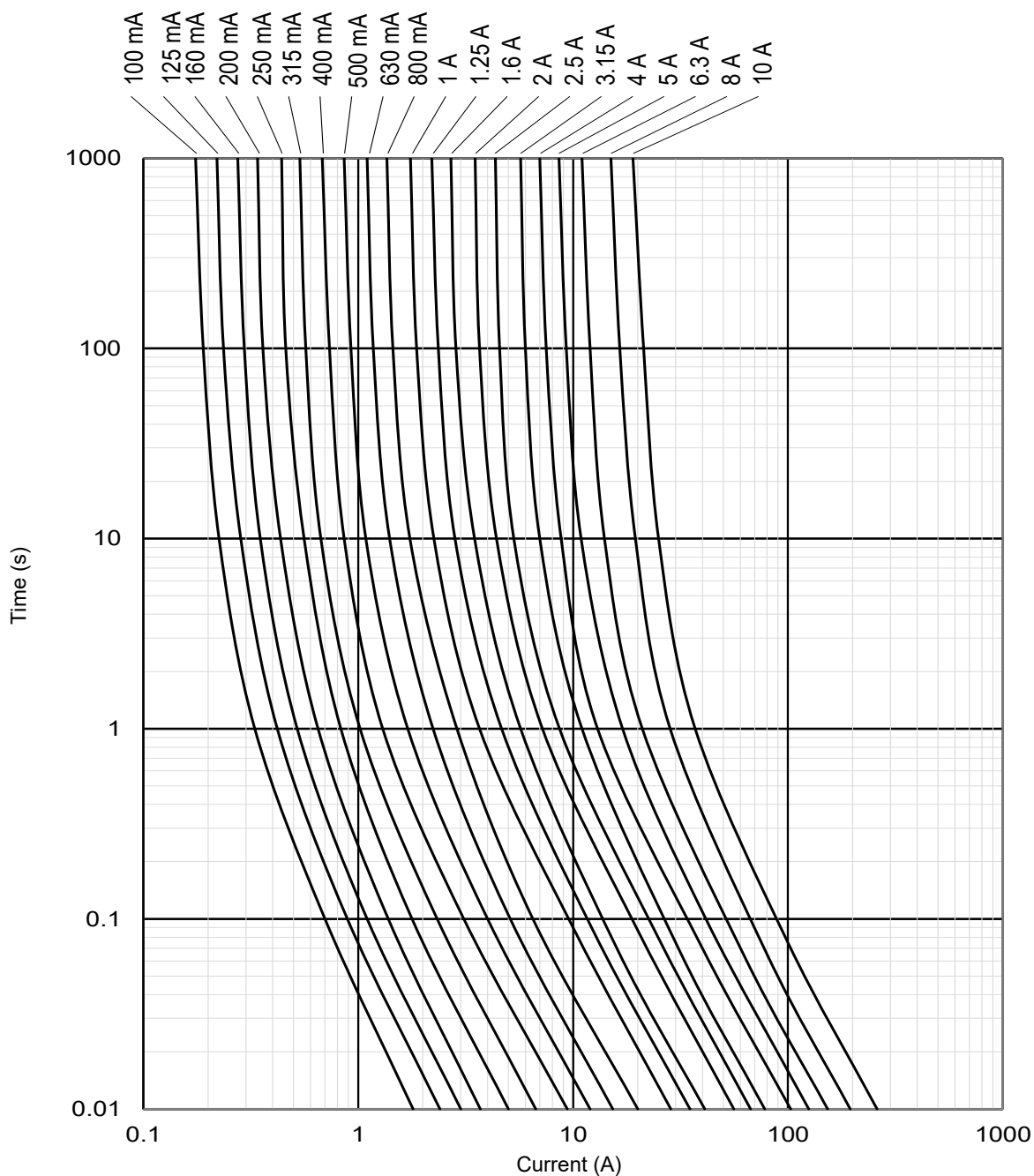
(Sub-miniature Fuse-links)

## SPT478 Series, Time-Lag, Plastic Case

### Opening Time / Current Characteristic

Rated Current (A)	2.1 <sub>I<sub>N</sub></sub>	2.75 <sub>I<sub>N</sub></sub>		4 <sub>I<sub>N</sub></sub>		10 <sub>I<sub>N</sub></sub>	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.
0.1 to 6.3	2 minutes	400 ms	10 s	150 ms	3 s	20 ms	150 ms
8 to 10	5 minutes	1 s	20 s	150 ms	3 s	20 ms	150 ms

### Time Current Curve (For Reference Only)



Miniature Fuses

Miniature Fuses

**Reliability Test**

No.	Items	Inspection Standards	Standards
1	High Temp. Test	<p>Test Condition:                      Temperature: (105 ± 2) °C                      Time: 1000 hours</p> <p>Test Requirement:                      After the test, the voltage drop shall not have changed by more than 10% of the value measured before the test.                      The clearing time of the fuse shall be in range.</p>	<p>MIL-STD-202(Test Method 108)                      GJB360B(Test Method 108)</p>
2	High Humidity Test	<p>Test Condition:                      Temperature: (40 ± 2) °C                      Humidity: 90% to 95%                      Time: 96 hours</p> <p>Test Requirement:                      After the test, the voltage drop shall not have changed by more than 10 % of the value measured before the test.                      The clearing time of the fuse shall be in range.</p>	<p>MIL-STD-202(Test Method 103)                      GJB360B(Test Method 103)</p>
3	Thermal Shock Test	<p>Test Condition:                      Per Cycle:                      -40 °C / 30 minutes, 85 °C / 30 minutes                      Time: 10 Cycles</p> <p>Test Requirement:                      After the test, the voltage drop shall not have changed by more than 10 % of the value measured before the test.                      The clearing time of the fuse shall be in range.</p>	<p>MIL-STD-202(Test Method 107)                      GJB360B(Test Method 107)</p>

Miniature Fuses

Miniature Fuses

# Miniature Fuses (Sub-miniature Fuse-links)

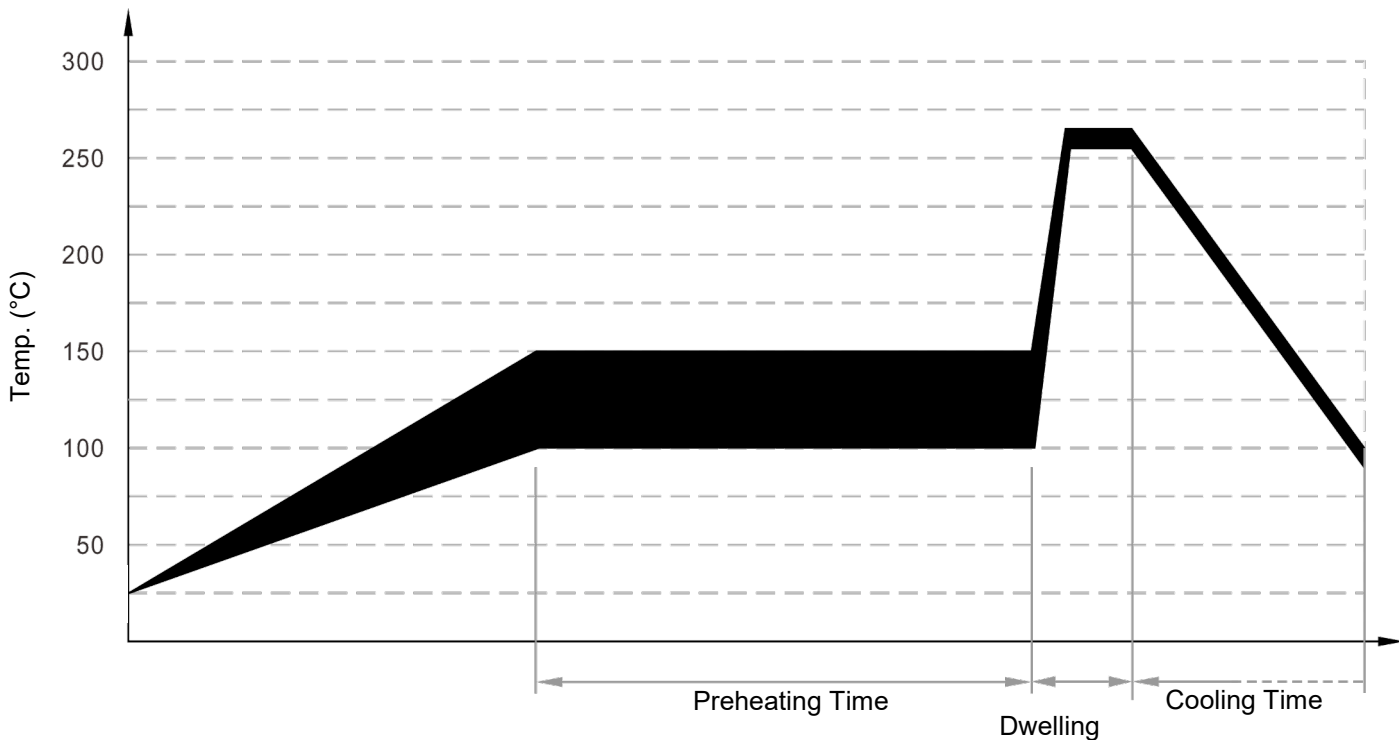
SPT478 Series, Time-Lag, Plastic Case

## Installation

### Mechanical stress

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

### Wave soldering Parameters (For Reference Only)



Item	Temp. (°C)	Time (s)
Preheating	100 to 150	60 to 180
Dwelling	260 ± 5	2 to 5

## Recommended Hand-Soldering Parameters

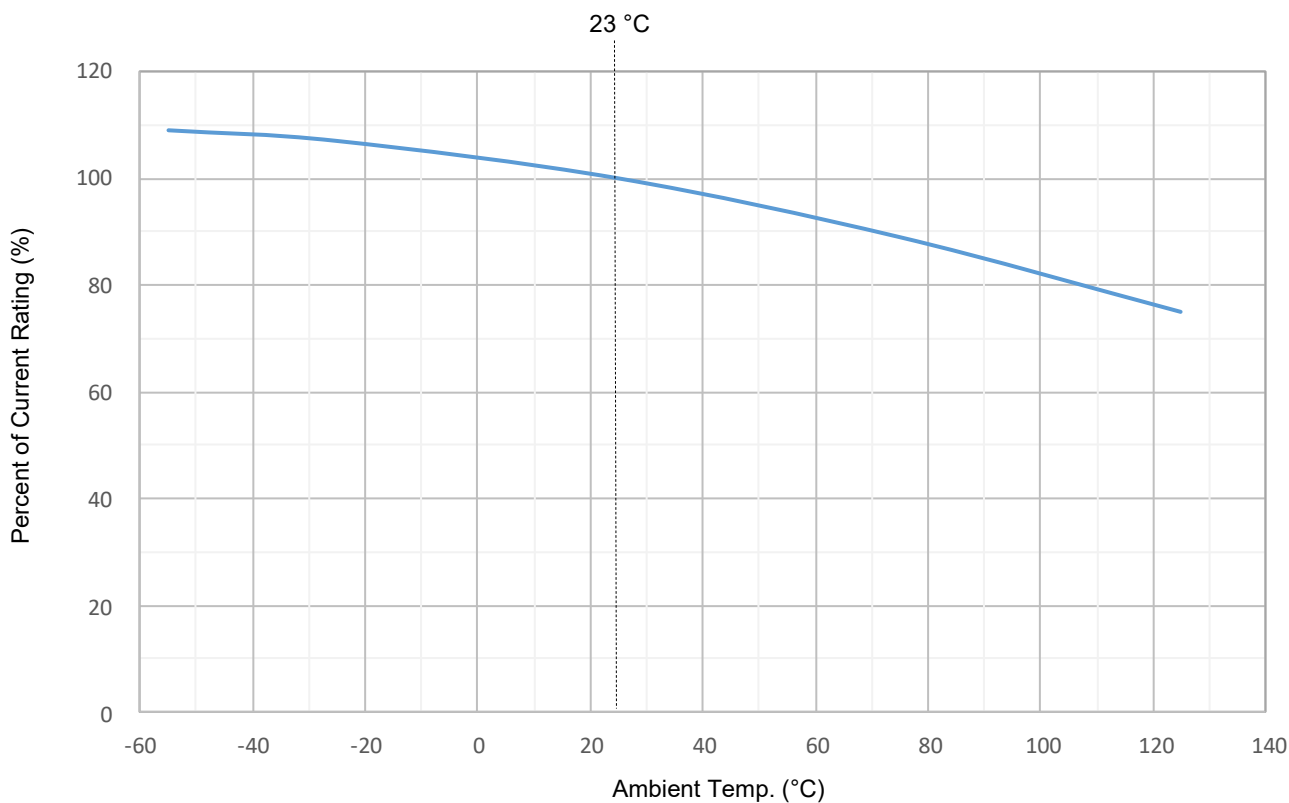
Solder Iron Temp.: (350 ± 5) °C

Heating Time: 5 seconds Max.

# Miniature Fuses (Sub-miniature Fuse-links)

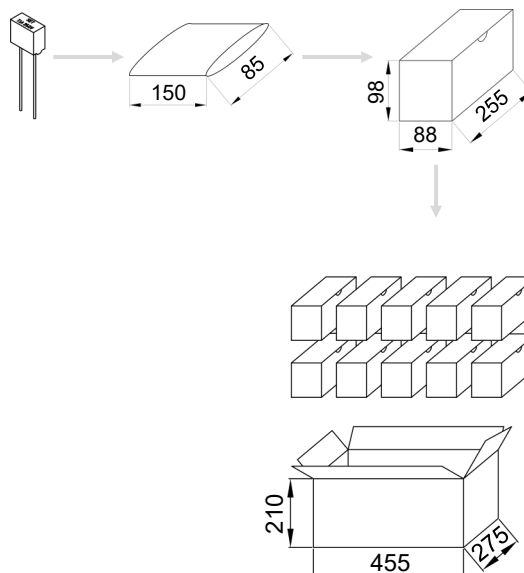
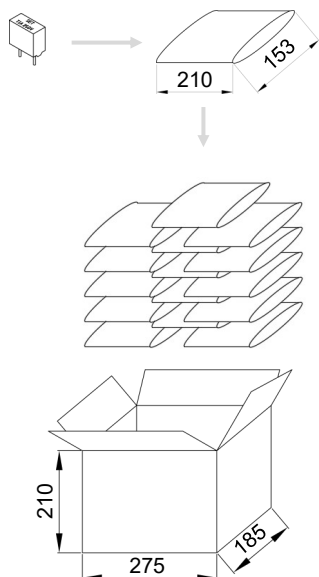
## SPT478 Series, Time-Lag, Plastic Case

### Temperature Derating Curve



### Packaging Information

All dimensions in mm



Bulk Short Leads (≤ 6.0 mm)		
Item	PE Bag	Carton
Quantity (PCS)	1,000	15,000
Gross Weight (kg)	4.6 × (1±10%)	

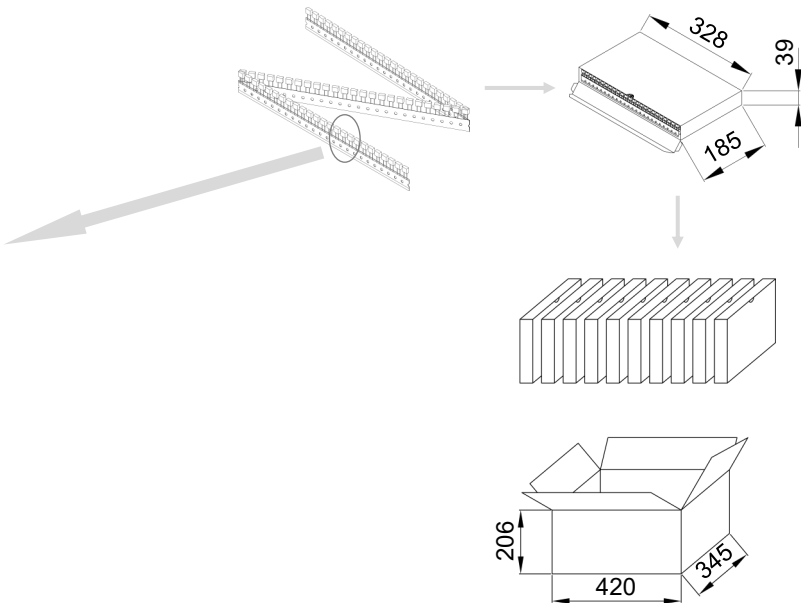
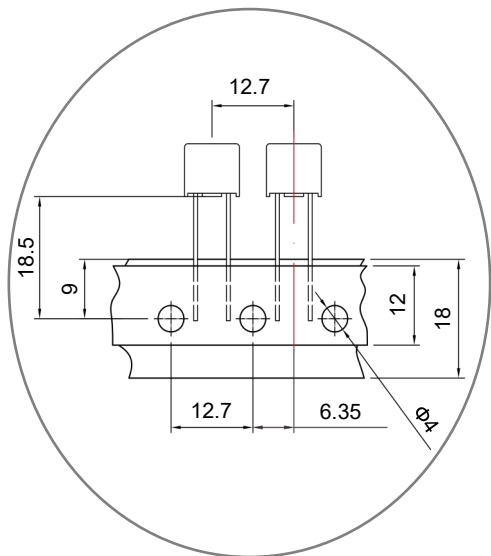
Bulk Long Leads (≥ 18.5 mm)			
Item	PE Bag	Box	Carton
Quantity (PCS)	1,000	2,000	20,000
Gross Weight (kg)	7.8 × (1±10%)		

# Miniature Fuses (Sub-miniature Fuse-links)

SPT478 Series, Time-Lag, Plastic Case

## Packaging Information

All dimensions in mm



Miniature Fuses

Miniature Fuses

Item	Taping	
	Box	Carton
Quantity (PCS)	1,000	10,000
Gross Weight (kg)	6.0 × (1 ± 10%)	





# ATTENTION

## Inspection

### Cold Resistance Test

- Applied current shall be less than 10% of rated current, at ambient Temp. of  $(23\pm 2)$  °C.
- (4-Wire) Resistance Measurement.

## Usage

- Do not touch the fuse body or lead wire when power on, avoiding scald or electric shock.
- Air pressure is 80 kPa to 106 kPa. These values represent an altitude of +2000 m to -500 m, respectively.

## Replacement

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

## Storage

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.