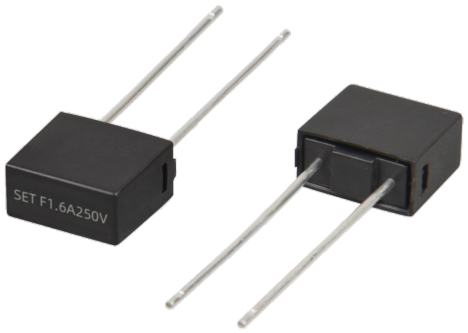
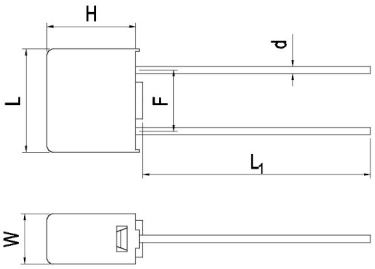
Miniature Fuses
(Mini Fuse)

SPF478 Series, Fast-Acting, Plastic Case



Dimensions (mm)



L	L_1	W
8.4 ± 0.5	18.5 ± 1.0	4.1 ± 0.3

H	d	F
7.35 ± 0.50	0.60 ± 0.05	5.08 ± 0.20

Description

Sub-miniature fuse, Fast-Acting, designed to IEC & UL standards.

Features

- Miniature Size
- Fast-Acting
- Designed to IEC 60127-3/Sheet3 / GB 9364.3/Sheet3
- RoHS & REACH Compliant

Part Numbering System

SPF478 F1.25A250VT-001

Other Options

Packaging
T: Taping
B: Bulk

Rated Voltage

Rated Current

Pre-Arcing Time/Current Characteristic
F: Fast-Acting

Series

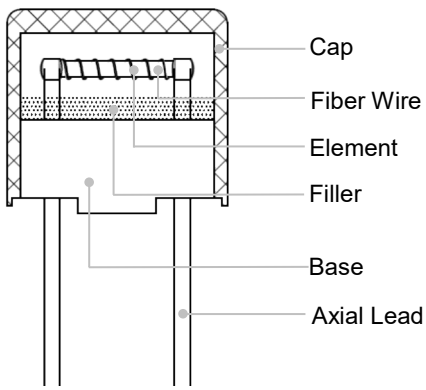
Applications

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

Agency Approvals

Agency Approvals	Agency File Number	Ampere Range (A)
c UL us	Pending	1 to 10
VDE	Pending	1 to 10
CCC	Pending	1 to 10

Structure Diagram



Miniature Fuses

Glossary

Item	Description
Fuse	An overcurrent protective device with a fusible link that operates and permanently opens the circuit on an overcurrent condition.
Rated Current	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.
Rated Voltage	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.
Ampere Squared Seconds I^2t	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.
Time-current Characteristics	Under stated conditions of operation, the value of time as a function of the prospective current.
Rated Breaking Capacity	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

Specifications

Series	Rated Current	Max. Voltage Drop [a]	Average Typical Melting I^2t [b]	Agency Approvals			Environmental	
				CCC	VDE	cURus	RoHS	REACH
	(A)	(mV)	(A^2sec)	CCC	VDE	cURus		
SPF478	1	280	1.4	○	○	○	●	●
SPF478	1.25	280	2.1	○	○	○	●	●
SPF478	1.6	250	3.6	○	○	○	●	●
SPF478	2	240	6.8	○	○	○	●	●
SPF478	2.5	200	11.3	○	○	○	●	●
SPF478	3.15	180	18.9	○	○	○	●	●
SPF478	4	160	27.2	○	○	○	●	●
SPF478	5	150	50	○	○	○	●	●
SPF478	6.3	130	59.5	○	○	○	●	●
SPF478	8	100	103	○	○	○	●	●
SPF478	10	85	170	○	○	○	●	●

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

b: I^2t value is measured at 10 I_N.

Breaking Capacity:

CCC / VDE 35 A @ 250 Vac or 10 I_N @ 250 Vac Whichever is Greater

UL / cUL150 A @ 125 V / 250 V / 300 V / 350 V / 400 V

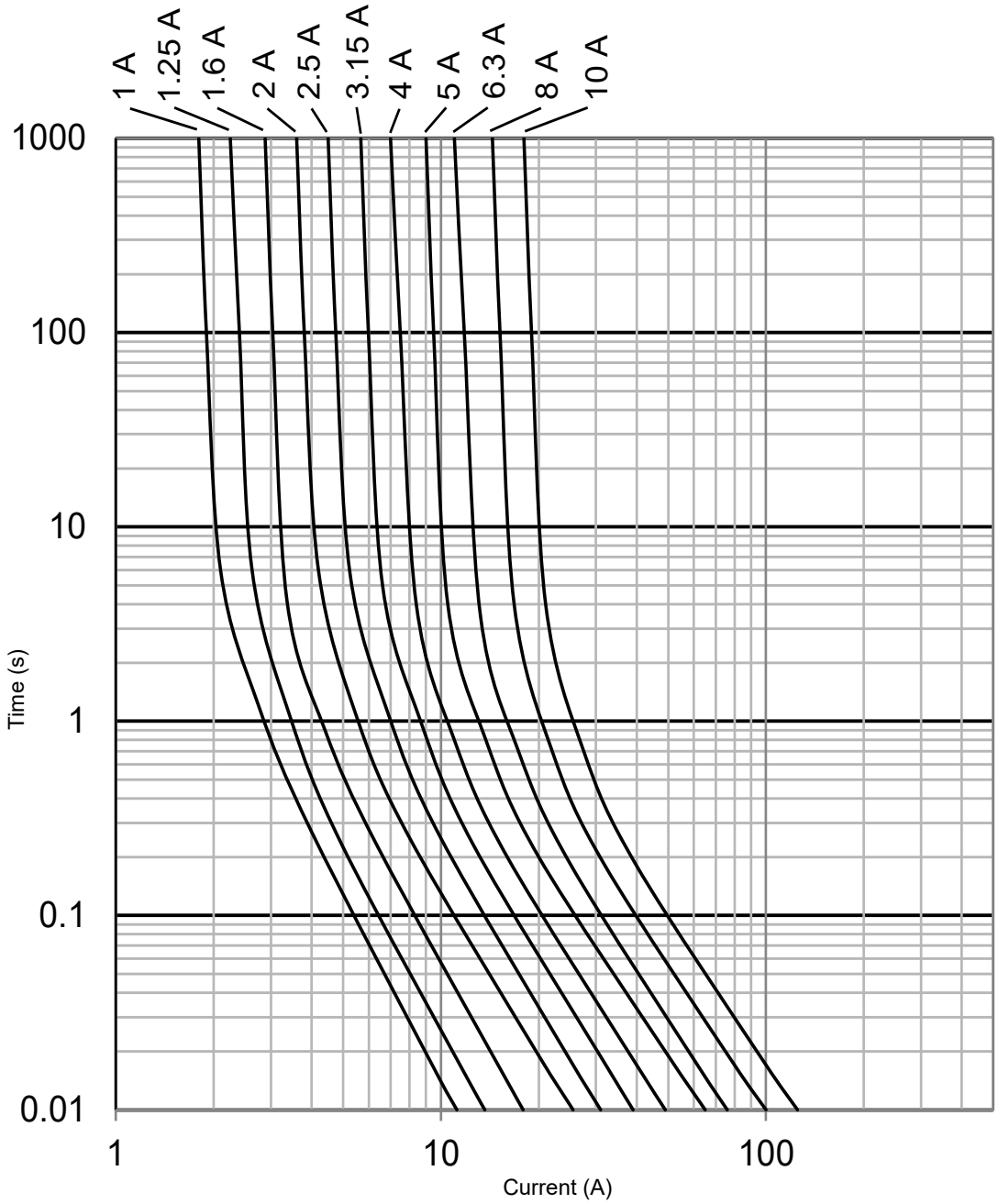
○: Pending

Miniature Fuses

Opening Time / Current Characteristic

Rated Current (A)	$2.1I_N$	$2.75I_N$		$4I_N$		$10I_N$	
	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

Reliability Test

No.	Items	Inspection Standards	Standards
1	High Temp. Test	Test Condition: Temperature: (105 ± 2) °C Time: 1000 hours 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.	MIL-STD-202(Test Method 108) GJB360B(Test Method 108)
2	High Humidity Test	Test Condition: Temperature: (40 ± 2) °C Humidity: 90% to 95% Time: 96 hours 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.	MIL-STD-202(Test Method 103) GJB360B(Test Method 103)
3	Thermal Shock Test	Test Condition: Per Cycle: -40 °C / 30 minutes, 85 °C / 30 minutes Time: 10 Cycles 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.	MIL-STD-202(Test Method 107) GJB360B(Test Method 107)

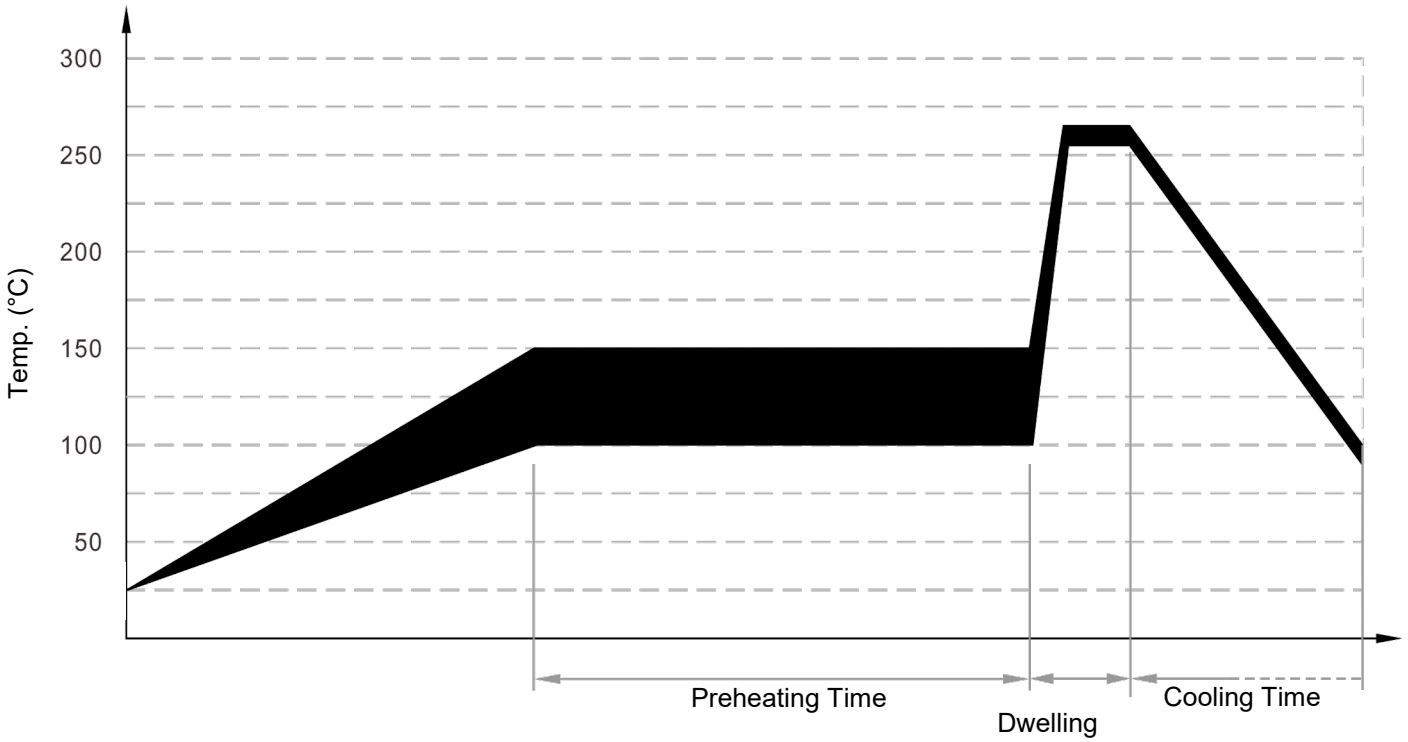
Miniature Fuses

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

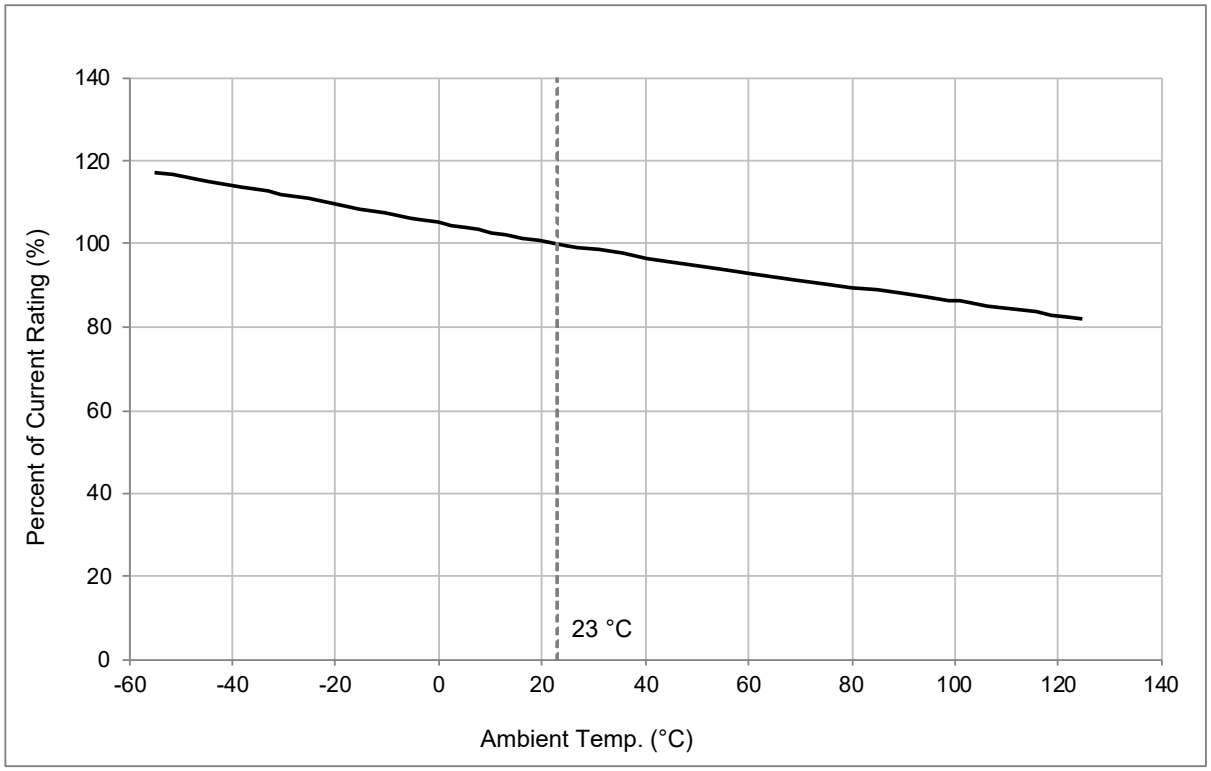
Recommended Hand-Soldering Parameters

Solder Iron Temp.: (350 ± 5) °C

Heating Time: 5 seconds Max.

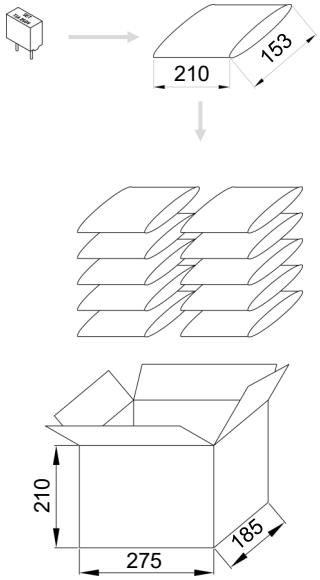
Miniature Fuses

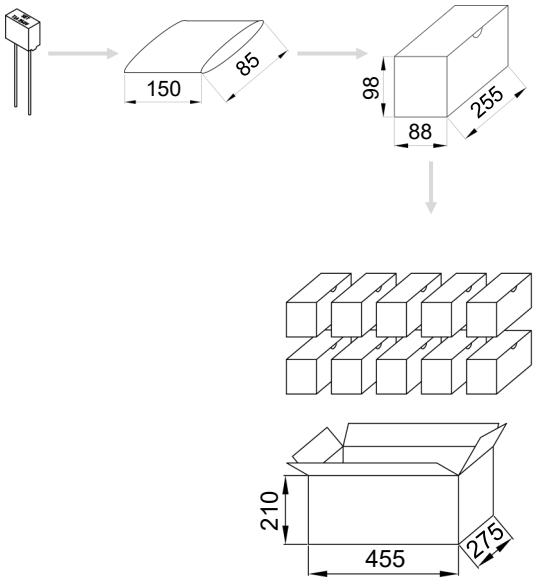
Temperature Derating Curve



Packaging Information

All dimensions in mm





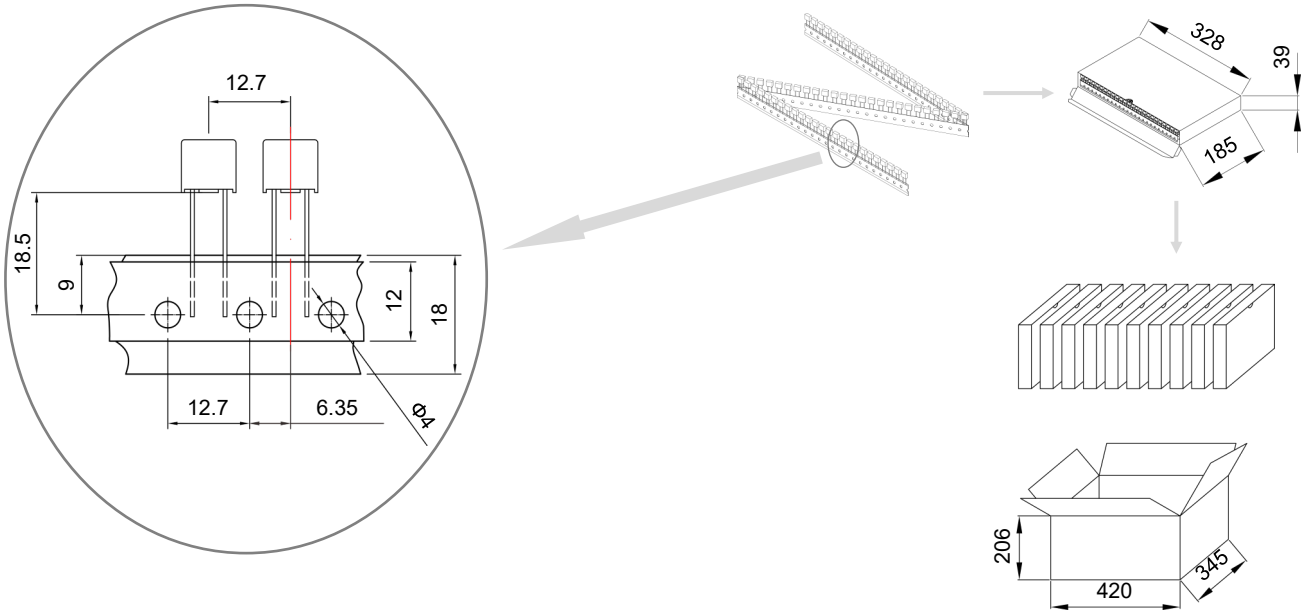
Bulk Short Leads (≤ 6.0 mm)		
Item	**PE Bag**	**Carton**
Quantity (PCS)	1,000	10,000
Gross Weight (kg)		3.2 × (1±10%)

Bulk Long Leads (≥ 18.5 mm)			
Item	**PE Bag**	**Box**	**Carton**
Quantity (PCS)	1,000	2,000	15,000
Gross Weight (kg)			7.8 × (1±10%)

Miniature Fuses

Packaging Information

All dimensions in mm



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

Miniature Fuses

ATTENTION

Inspection

Cold Resistance Test

a. Applied current shall be less than 10% of rated current, at ambient Temp. of (23±2) °C.

b. (4-Wire) Resistance Measurement.

Miniature Fuses

Usage

a. Do not touch the fuse body or lead wire when power on, avoiding scald or electric shock.

b. 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.