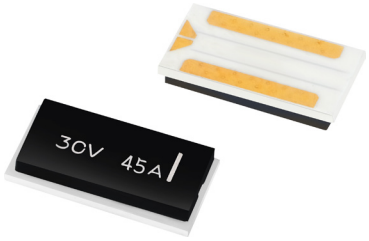
SMD Fuses
9550, 45A

RoHS Compliant



Description

These Series is a surface mountable battery protector designed to protect against both overcurrent and overcharging. Fuse can cut off the circuit when overcurrent occurs. Also, combining with IC and FET, the embedded heater can generate heat to blow the fuse element to achieve overvoltage protection.

Application

- Moped
- Lawn mower
- Energy storage batteries
- Vacuum cleaner
- Electric scooters
- Electric bicycles
- BMS
- Robot

Features

- Protect Li-ion battery from overcurrent and overcharge
- Substrate embedded Resistor
- Surface mounted fuse
- Halogen free / Sb free
- Fast response time

Specifications

Part Number	Applicable cells in series	Rated Current (A)	Rated Voltage (Vdc)	Breaking Capacity (A)	Fuse Resistance (mΩ)	Operating Voltage (V)	Heater Resistance (Ω)
MCATF955012V45A	3 cells	45	80	120	0.7 ~ 1.5	9.8 ~ 13.5	6.08 ~ 9.6
MCATF955014V45A	4 cells					13 ~ 18.4	11.29 ~ 16.9
MCATF955020V45A	5 cells					16.7 ~ 23.5	18.41 ~ 27.89
MCATF955030V45A	6-7 cells					22.3 ~ 31.5	33.08 ~ 49.73
MCATF955040V45A	9-10 cells					33 ~ 46.9	73.4 ~ 108.9
MCATF955050V45A	12-14 cells					43.7 ~ 62	128.2 ~ 190.9

* After soldering, R1&R2 in parallel connection, the heater resistance is half of above value.

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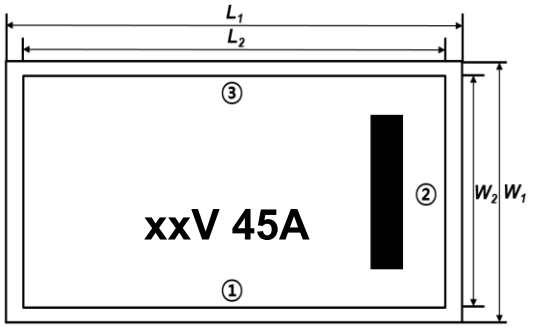
Electrical Characteristics

Items	Conditions	Requirements / Result
Current carrying capacity	Apply 100% of its rated current.	No melting.
Fusing time	Apply 200% of its rated current.	The fuse shall be melt within 1min.
	The minimum value of the operating voltage range of each model shall be applied to heater.	
Operating temperature range	The following examinations are executed respectively within the range from -10 to 65°C. • Fusing time test • Current carrying capacity test	The fuse shall be passed each test.

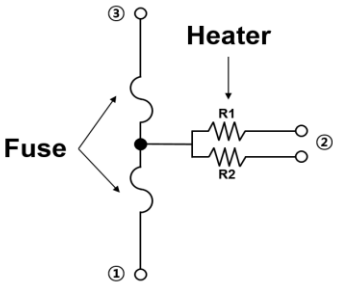
*Electrical characteristics are influenced by thermal capacity of PCB, parts, pattern width, etc. Therefore you should check them on your PCB.

Dimensions

Top View



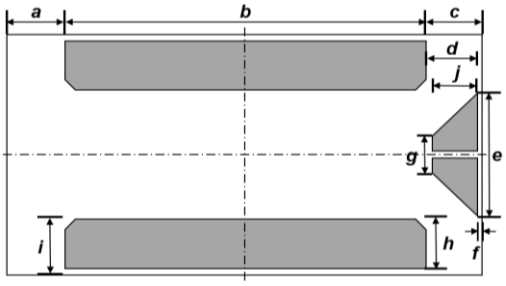
Equivalent Circuit



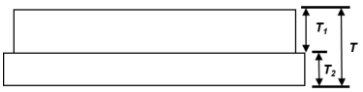
Dimension & Weight

Code	Spec.(mm)
L_1	9.5 ± 0.2
L_2	8.9 ± 0.1
W_1	5 ± 0.2
W_2	4.4 ± 0.1
T	1.4 ± 0.1
T_1	0.85
T_2	0.55
a	1.15
b	7.2
c	1.15
d	1.05
e	2.55
f	0.1
g	0.75
h	1
i	1.15
j	0.9
* Without extra notification the tolerance is ± 0.1mm	
* Weight: 0.142± 5% g/pc	

Bottom View



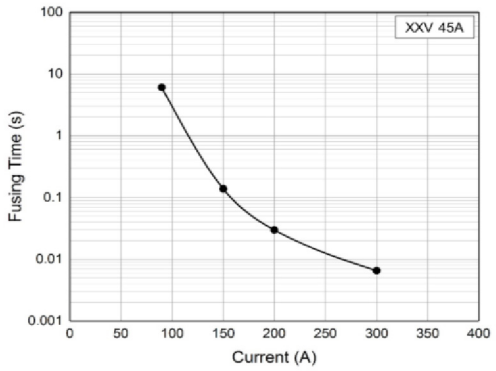
Side View



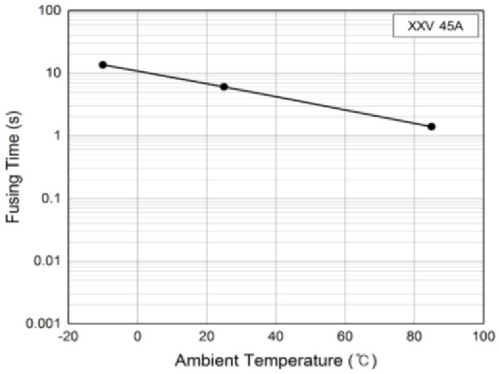
Dimensions : Millimetres

Typical Performance Data

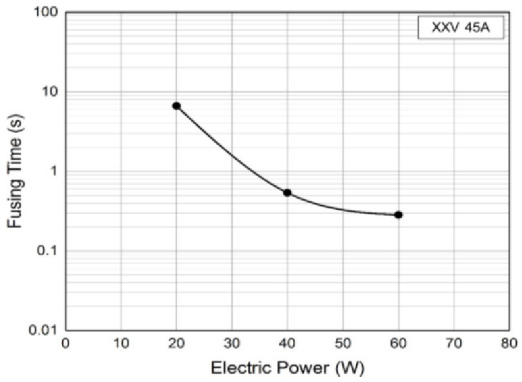
Fusing Time by Current



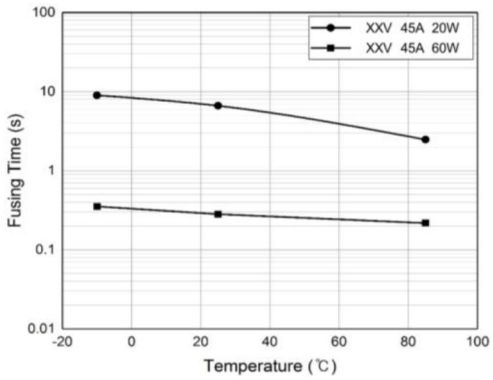
Fusing Time by 2xRated-Current vs Ambient Temperature



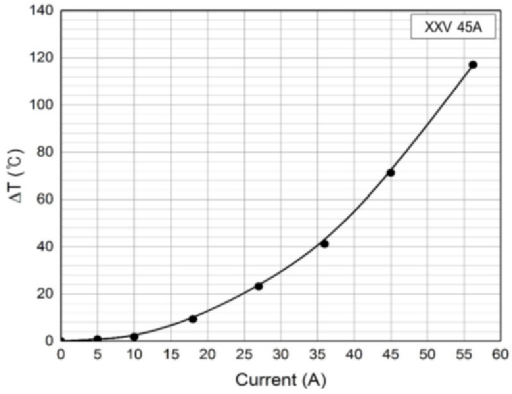
Fusing Time by Heater (Wattage)



Fusing Time vs Ambient Temperature

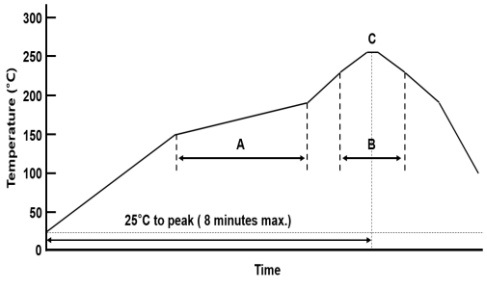


Temperature Rise by Current



Mounting Parameters

Reflow Profile Recommended



Code	Temperature (°C)	Time (s)
A (Pre-Heating)	150~190	90 ± 30
B	Over 230	25 ± 5
C (Peak)	255 ± 5	Max. 5

Part Number Table

Description	Part Number
SMD Fuses, 12V	MCATF955012V45A
SMD Fuses, 14V	MCATF955014V45A
SMD Fuses, 20V	MCATF955020V45A
SMD Fuses, 30V	MCATF955030V45A
SMD Fuses, 40V	MCATF955040V45A
SMD Fuses, 50V	MCATF955050V45A