WPFxxxAxM *Series（Rev: E）*

1. Features

- Halogen free;
- Bolt installation;
- High structural intensity;
- One device to achieve overcurrent protection and overcharge protection
- UL : UL-248-1,UL-248-14 •••• File Number: E534874
- TUV : EN60127-1,EN60127-4 ••• File Number: J50630882

2. Environmental Characteristics

（1）Contents of halogens used in each material for the product are as follows.

Halogen substance	Content
Chlorine（CL）	≤ 900ppm (0.09%)
Bromine（Br）	≤ 900ppm (0.09%)
Total concentration of chlorine (Cl) + bromine (Br)	≤ 1500ppm (0.15%)

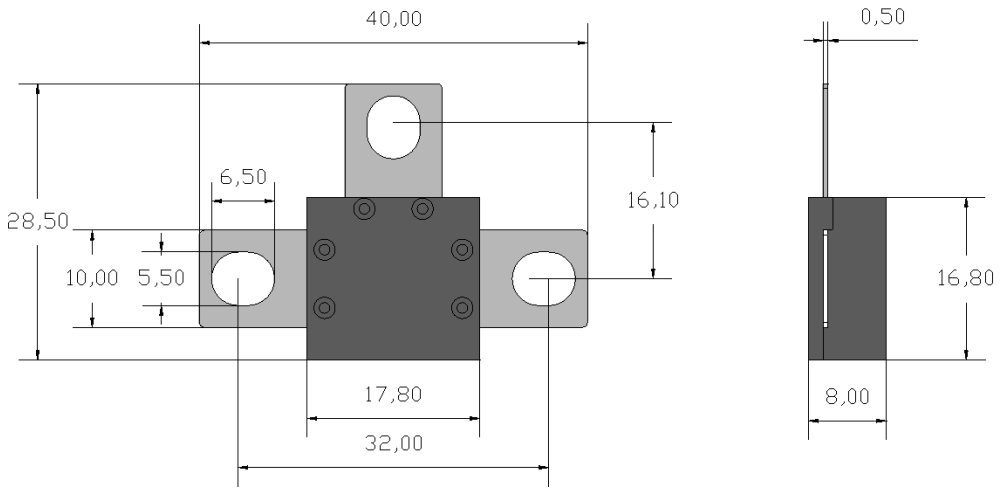
（2）The product described in this specification complies with the RoHS Directive. BOM table contains the high-temperature alloy, solder, some electronic slurry, including lead, but are in line with the relevant provisions of the ROHS directive.

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3. Dimensions and Circuit Chart

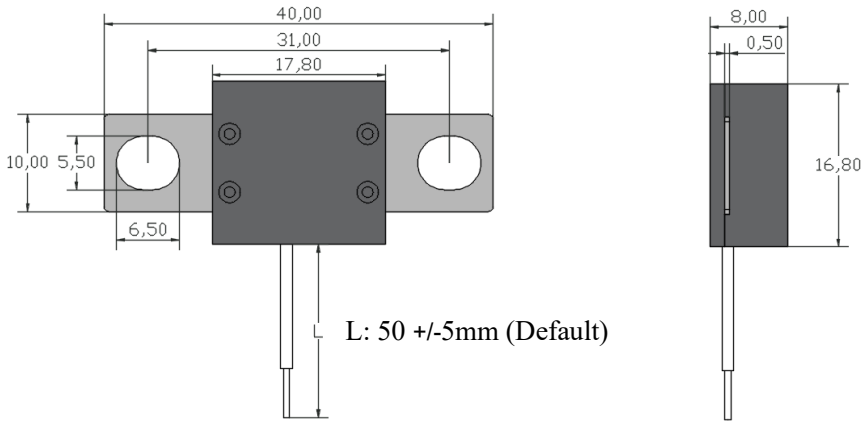
3.1 Dimensions

a) Bolt type (WPFxxxAxM Series)



Unit：mm

b) Wire type (WPFxxxAxM-L Series)

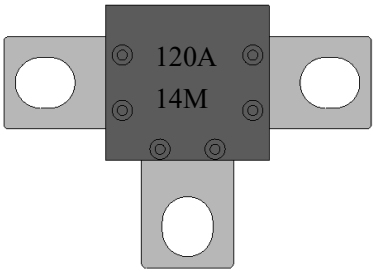


Unit：mm

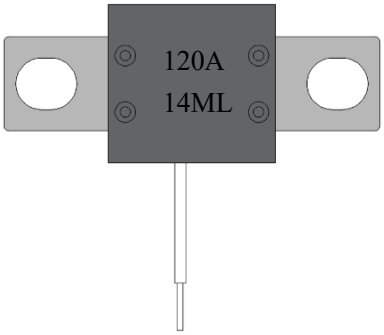
Note：The lead wire length and connect model can be customized according to customer requirements.

Mounting Torque	**Torque recommendations for screw mounting**		GB/T 13539.2-2008
Bolt model	M4	M5	
requirement	3.5 Nm +/- 1Nm	4.5 Nm +/- 1Nm	

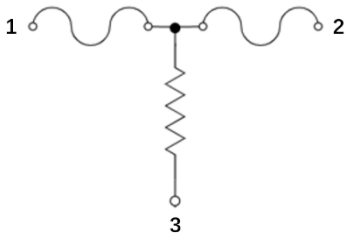
3.2 Circuit



Bolt type (WPFxxxAxM Series)



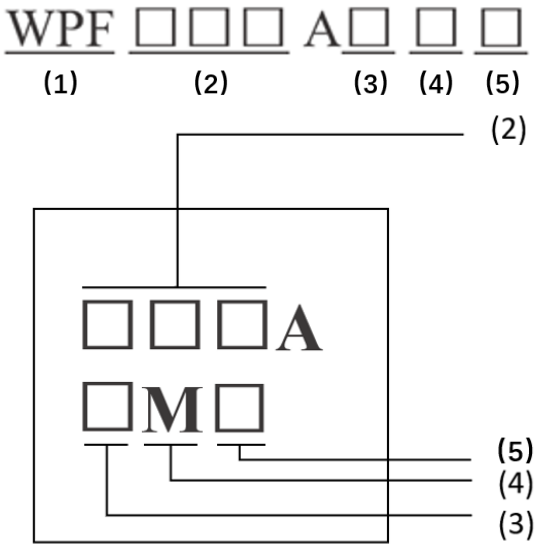
Wire type (WPFxxxAxM-L Series)



Equivalent Circuit

Code	Description
P1-P2	Main Circuit
P1-P3/ P2-3	Control Circuit

4. Marking requirements



(1) WPF: SCF/Way-on SCF protector;

(2) Rated current: 120A，150A;

(3) Number of electric core string;

(4) Length width size code; M 17.8*16.8*8mm;

(5) Product series code; blank: Bolt type; -L: Wire type;

5. Electrical Characteristics

a) Bolt type (WPFxxxAxM Series)

Part number (the suffix is blank.)	Current Rating	Voltage Rating	Operating Voltage	Fuse DCR	Heater DCR	Interrupting Rating	Applicable Cells in series
	A	VDC	V	mΩ	Ω	A	cell
WPF120A3M	120	125	8.2~13.5	0.2-0.8	1.0~1.6	1000	3
WPF120A4M	120	125	10.8~18	0.2-0.8	1.8~2.7	1000	4
WPF120A5M	120	125	14.2~23.5	0.2-0.8	3.0~4.7	1000	5
WPF120A7M	120	125	18.9~31.5	0.2-0.8	5.5~8.3	1000	6~7
WPF120A10M	120	125	29.7~49.5	0.2-0.8	13.6~20.5	1000	8~11
WPF120A14M	120	125	37.7~62.0	0.2-0.8	22.0~33.0	1000	12~14
WPF120A16M	120	125	43.7~72.0	0.2-0.8	28.8~43.2	1000	15~17
WPF120A20M	120	125	50.3~84.0	0.2-0.8	39.2~58.9	1000	15~20
WPF120A22M	120	125	60.0~100.0	0.2-0.8	55.6~83.6	1000	17~22
WPF120A24M	120	125	74.9~125.0	0.2-0.8	86.8~130.5	1000	22~30
WPF150A3M	150	125	8.2~13.5	0.2-0.6	1.0~1.6	1000	3
WPF150A4M	150	125	10.8~18.0	0.2-0.6	1.8~2.7	1000	4
WPF150A5M	150	125	14.2~23.5	0.2-0.6	3.0~4.7	1000	5
WPF150A7M	150	125	18.9~31.5	0.2-0.6	5.5~8.3	1000	6~7
WPF150A10M	150	125	29.7~49.5	0.2-0.6	13.6~20.5	1000	8~11
WPF150A14M	150	125	37.7~62.0	0.2-0.6	22.0~33.0	1000	12~14
WPF150A16M	150	125	43.7~72.0	0.2-0.6	28.8~43.2	1000	15~17
WPF150A20M	150	125	50.3~84.0	0.2-0.6	39.2~58.9	1000	15~20
WPF150A22M	150	125	60.0~100.0	0.2-0.6	55.6~83.6	1000	17~22
WPF150A24M	150	125	74.9~125.0	0.2-0.6	86.8~130.5	1000	22~30

Note:
the suffix defined according to the control pin lead method.
The blank suffix indicates that the control foot is installed using bolts.

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b) Wire type (WPFxxxAxM-L Series)

Part number (the suffix is "-L".)	Current Rating	Voltage Rating	Operating Voltage	Fuse DCR	Heater DCR	Interrupting Rating	Applicable Cells in series
	A	VDC	V	mΩ	Ω	A	cell
WPF120A3M-L	120	125	8.2~13.5	0.2-0.8	1.0~1.6	1000	3
WPF120A4M-L	120	125	10.8~18	0.2-0.8	1.8~2.7	1000	4
WPF120A5M-L	120	125	14.2~23.5	0.2-0.8	3.0~4.7	1000	5
WPF120A7M-L	120	125	18.9~31.5	0.2-0.8	5.5~8.3	1000	6~7
WPF120A10M-L	120	125	29.7~49.5	0.2-0.8	13.6~20.5	1000	8~11
WPF120A14M-L	120	125	37.7~62.0	0.2-0.8	22.0~33.0	1000	12~14
WPF120A16M-L	120	125	43.7~72.0	0.2-0.8	28.8~43.2	1000	15~17
WPF120A20M-L	120	125	50.3~84.0	0.2-0.8	39.2~58.9	1000	15~20
WPF120A22M-L	120	125	60.0~100.0	0.2-0.8	55.6~83.6	1000	17~22
WPF120A24M-L	120	125	74.9~125.0	0.2-0.8	86.8~130.5	1000	22~30
WPF150A3M-L	150	125	8.2~13.5	0.2-0.6	1.0~1.6	1000	3
WPF150A4M-L	150	125	10.8~18.0	0.2-0.6	1.8~2.7	1000	4
WPF150A5M-L	150	125	14.2~23.5	0.2-0.6	3.0~4.7	1000	5
WPF150A7M-L	150	125	18.9~31.5	0.2-0.6	5.5~8.3	1000	6~7
WPF150A10M-L	150	125	29.7~49.5	0.2-0.6	13.6~20.5	1000	8~11
WPF150A14M-L	150	125	37.7~62.0	0.2-0.6	22.0~33.0	1000	12~14
WPF150A16M-L	150	125	43.7~72.0	0.2-0.6	28.8~43.2	1000	15~17
WPF150A20M-L	150	125	50.3~84.0	0.2-0.6	39.2~58.9	1000	15~20
WPF150A22M-L	150	125	60.0~100.0	0.2-0.6	55.6~83.6	1000	17~22
WPF150A24M-L	150	125	74.9~125.0	0.2-0.6	86.8~130.5	1000	22~30

Note:

the suffix defined according to the control pin lead method.

The suffix " -L" indicates that the control pin is a lead.

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6. Clear-Time Characteristics

Test Item	Condition of Test	requirement at 25℃
Carrying Capacity (UL248-14)	100% of rated current, 4hr	No Melting
Fusing Time (UL248-14)	200% rated Current	≤1min
	In operation voltage range	

Operating temperature range: -10~65℃（Fusing time≤1min）

Electrical Characteristics is influenced by thermal capacity of PCB, parts, pattern width, and so on. Therefore you should check it on your PCB.

7. Standard test condition

In the absence of additional test environmental standards, the test environmental standards are as follows;

Ambient temperature: 5 to 35℃;

Relative humidity: 45 to 85%RH; Air pressure: 86 to 106kPa.

If you have any questions about the test results, please follow the following environmental standards;

Ambient temperature: 20±2℃;

Relative humidity: 60 to 70%RH; Air pressure: 86 to 106kPa.

8. Reliability

Test Item	Project	Condition	Requirements
Electrical performance	Over voltage	Operating voltage shall be applied to heater	Fusing Time≤1min
	Insulation	@100VDC after OV operating voltage test	>0.2MΩ
	Withstand voltage	@100VAC @50-60Hz@60s after OV operating voltage test	No breakdown
	Over current	200% of Rated current	Fusing Time≤1min
	Carrying Capacity	100% of rated current, 4hr	No Melting
Reliability performance	High temperature	100℃±5℃@250hr	Without deformation of case or excessive looseness of caps. Electrical characteristics shall be satisfied.
	High humidity	60℃±2℃@90%~95%@250hr	
	Keeping cold	-20℃±3℃ @ 500hr	
	Pulse	5×In（In = rated current）A @ 25℃ @on 5ms/off 995 ms，100,000 cycles	No operating;
Mechanical performance	Tensile test	Apply a pulling force of 40N along the axial direction of the electrode and keep it for 1 minute.	No damage or falling off.
	Thrust test	Apply a thrust force of 8N along the axial direction of the electrode and keep it for 1 minute.	No damage or falling off.

Specifications are subject to change without notice

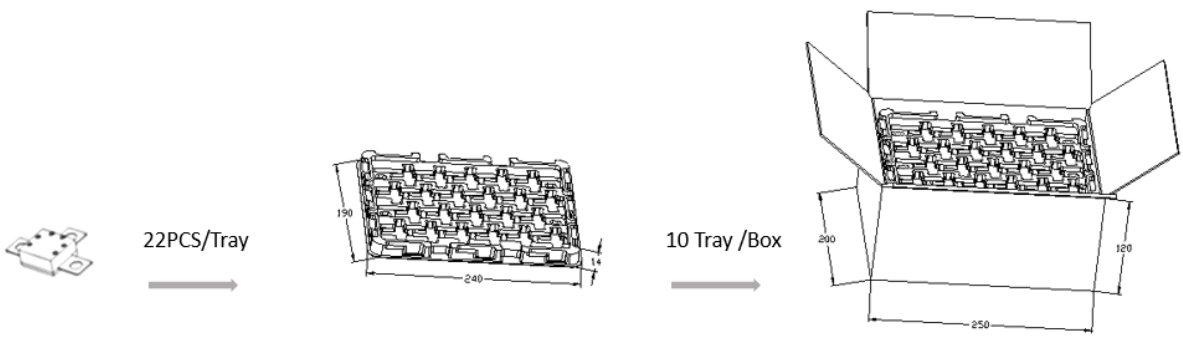
9.Packaging Data

9.1 Packaging

Item	Tray	Box
Dimensions（mm）	240*190*14	250*200*120
Quantity (PCS)	22	220

Note：The dimensions and quantity of packing is for reference only.

Packaging Drawing:



10. Storage

The product must be stored in carton or plastic bag, in the conditions of ambient temperature of -10℃ to 40℃, RH of less than 60%, no radical temperature change, no direct sunshine, excessive vibration and shock.

The preservation period when it is kept on the above condition is 1 year.

Should avoid to store at where there is possibility of generating corrosive gas, such as salt mist, chlorine, hydrogen sulfide, ammonium, sulfide-oxidation, hydrogen chloride, etc.

11. Cautions for using

(1) Please confirm the connection with the three terminal circuit board , where in 1-3, 2-3 is used as a heating end with high resistance.

(2) This product is designed and used in conventional electronic devices, so we do not recommend the use of military, medical and other areas of other people and property may cause direct damage.

(3) If there is any doubt or change in the contents of this book, please inform us in advance so that both parties can reach an agreement.

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