



HF118F 1 pole


MINIATURE HIGH POWER RELAY




File No.: E134517



File No.: 40010480



File No.: CQC09002035071



Features

- 10A switching capability
- 5kV dielectric strength (between coil and contacts)
- Low height: 12.5 mm
- Creepage distance >8mm
- Meeting VDE 0700, 0631 reinforce insulation
- Product in accordance to IEC 60335-1 available
- 1 pole configurations available
- UL insulation system: Class F
- Sockets available
- Plastic sealed and flux proofed types available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (28.5 x 10.1 x 12.5) mm

CONTACT DATA	
Contact arrangement	1A, 1B, 1C
Contact material	See ordering info.
Contact resistance	100mΩ max.(at 1A 6VDC)
Contact rating (Res. load)	10A 250VAC/30VDC
Max. switching voltage	440VAC / 125VDC
Max. switching current	10A
Max. switching power	2500VA / 300W
Mechanical endurance	1 x 10 <sup>7</sup> OPS
Electrical endurance	1 x 10 <sup>5</sup> OPS (See approval reports for more details)

CHARACTERISTICS		
Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
Surge voltage (between coil & contacts)		10kV (1.2 / 50μs)
Operate time (at nomi. vot.)		10ms max.
Release time (at nomi. vot.)		5ms max.
Temperature rise (at nomi. Volt.)		55K max.
Shock resistance *	Functional	NC: 49m/s <sup>2</sup> NO: 98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance *	NC (no coil voltage)	10Hz to 55Hz 0.8mm DA
	NO	10Hz to 55Hz 1.65mm DA
Ambient temperature		-40°C to 85°C
Humidity		5% to 85% RH
Termination		PCB
Unit weight		Approx. 8g
Construction		Plastic sealed, Flux proofed

Notes: 1) The data shown above are initial values.  
2) \* Index is not in relay length direction.

COIL	
Coil power	Approx. 220mW to 290mW

COIL DATA					at 23°C
Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Max. Allowable Voltage VDC *	Coil Resistance Ω	
5	3.50	0.5	7.5	113 x (1±10%)	
6	4.20	0.6	9.0	164 x (1±10%)	
9	6.30	0.9	13.5	360 x (1±10%)	
12	8.40	1.2	18.0	620 x (1±10%)	
18	12.60	1.8	27.0	1295 x (1±10%)	
24	16.80	2.4	36.0	2350 x (1±15%)	
48	33.60	4.8	72.0	8000 x (1±15%)	
60	42.00	6.0	90.0	12500 x (1±15%)	

Notes: \* The max. allowable voltage in the COIL DATA is coil overdrive voltage, it is the instantaneous max. voltage which the relay coil could endure in a very short time.

SAFETY APPROVAL RATINGS		
UL/CUL (AgNi, AgSnO <sub>2</sub> )	version 1,2,3,5,6	10A 250VAC at 85°C
		10A 30VDC at 85°C
VDE (AgNi, AgNi+Au)	1H (;S) (1;2;3;5;7) (-;G)	B300 at 85°C
		R300 at 85°C
VDE (AgSnO <sub>2</sub> , AgSnO <sub>2</sub> +Au)	1H (-;S) (1;2;3;5;7), T.(-;G)	1/2HP 240VAC at 85°C
		AgSnO <sub>2</sub> : 1/3HP 120VAC at 85°C
VDE (AgNi, AgNi+Au)	1D (;S) (1;2;3;6) (-;G)	8A 250VAC at 85°C
	1Z (-;S) (1;2;3) (-;G)	8A 250VAC at 85°C
VDE (AgSnO <sub>2</sub> , AgSnO <sub>2</sub> +Au)	1D (-;S) (1;2;3;6), T.(-;G)	8A 250VAC at 85°C
	1Z (-;S) (1;2;3), T.(-;G)	8A 250VAC at 85°C
VDE (AgSnO <sub>2</sub> , AgSnO <sub>2</sub> +Au)	1H (-;S) (1;2;3;5;7), T.(-;G)	AC-15 (Make: 30A 250VAC COS Ø=0.7 at 85°C Break: 3A 250VAC COS Ø=0.4 at 85°C)
	1Z (-;S) (1;2;3), T.(-;G)	NO: AC-15 (Make: 30A 250VAC COS Ø=0.7 at 85°C Break: 3A 250VAC COS Ø=0.4 at 85°C)

Notes: Only some typical ratings are listed above. If more details are required, please contact us.

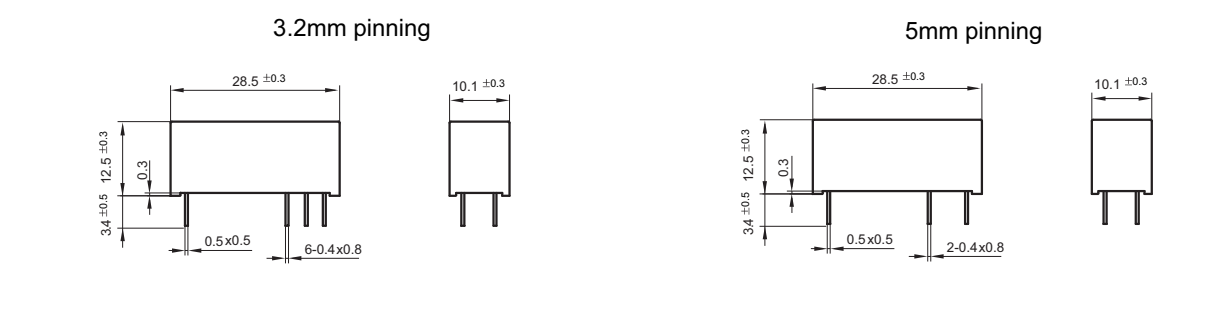
ORDERING INFORMATION		
Type	HF118F / 012 -1H S 1 G (XXX)	
Coil voltage	5, 6, 9, 12, 18, 24, 48, 60VDC	
Contact arrangement	1H: 1 Form A 1D: 1 Form B 1Z: 1 Form C	
Construction <sup>1)</sup>	S: Plastic sealed Nil: Flux proofed	
Version (See Wiring Diagram below)	1: 3.2mm 1 pole 8A 2: 3.2mm 1 pole 8A, mirror image to Version 1 3: 3.2mm 1 pole 10A, double pinning 5: 5mm 8A, only 1 Form A 6: 5mm 8A, only 1 Form B	
Contact material <sup>2)</sup>	T: AgSnO <sub>2</sub> G: AgNi+Au plated TG: AgSnO <sub>2</sub> +Au plated Nil: AgNi	
Customer special code	e.g. (335) stands for product in accordance to IEC 60335-1 (GWT) (253) stands for Reflow soldering version	

Notes: 1) We recommend flux proofed types for a clean environment (free from contaminations like H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, dust, etc.).  
We suggest to choose plastic sealed types and validate it in real application for an unclear environment (with contaminations like H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, dust, etc.).  
If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.  
2) For gold plated type, the min. switching current and min. switching voltage is 10mA 5VDC.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

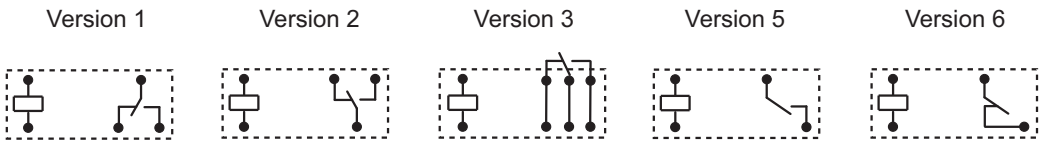
Outline Dimensions



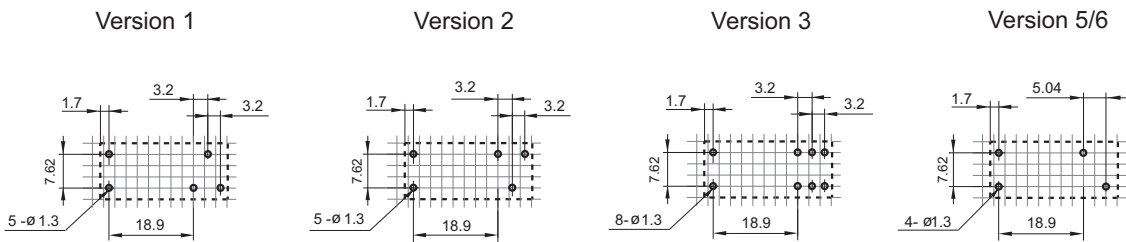
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Wiring Diagram (Bottom view)



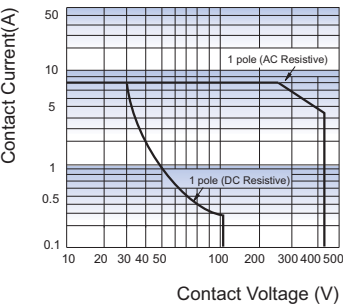
PCB Layout (Bottom view)



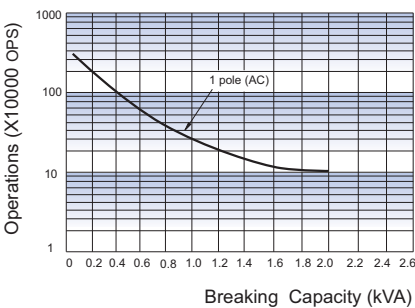
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be  $\pm 0.4\text{mm}$ .  
2) The tolerance without indicating for PCB layout is always  $\pm 0.1\text{mm}$ .  
3) The width of the gridding is 2.54mm.

CHARACTERISTIC CURVES

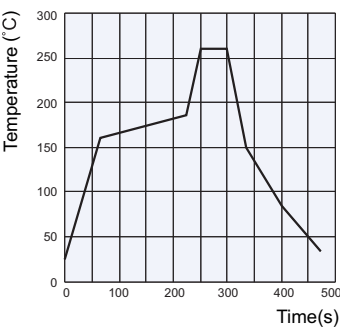
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



REFLOW WELDING TEMPERATURE  
(Reflow soldering version)



Relay Sockets




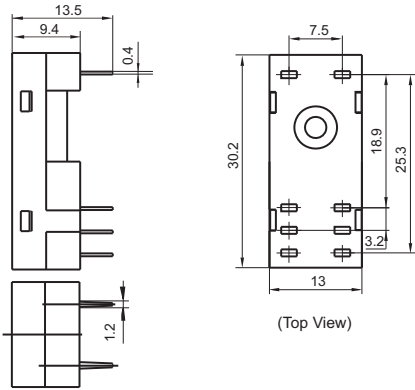
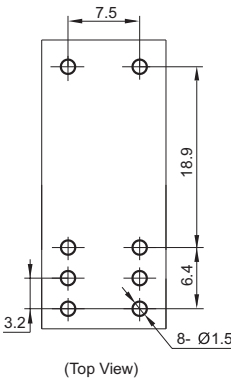
Features

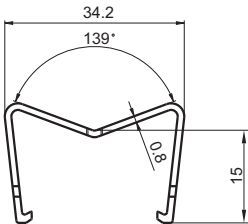
- The dielectric strength can reach 5000VAC and the insulation resistance is 1000MΩ
- Two mounting types are available: PCB and screw mounting.
- Environmental friendly product (RoHS compliant)

CHARACTERISTICS

Type	Nominal Voltage	Nominal Current	Ambient Temperature	Dielectric Strength min.
118F-1Z-A1-1	250VAC	10A	-40 °C to 70 °C	5000VAC
118F-1Z-A1-2	250VAC	10A	-40 °C to 70 °C	5000VAC
118F-2Z-A1	250VAC	10A	-40 °C to 70 °C	5000VAC

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT				Unit: mm
Socket	Outline Dimensions		Wiring Diagram	Components Available
<div>118F-1Z-A1-1</div> <div></div> <div>PCB terminal, PCB or Screw mounting Applicable for HF118F/XXX-1XX1XX</div>				metallic retainer 118F-H1
<div>118F-1Z-A1-2</div> <div></div> <div>PCB terminal, PCB or Screw mounting Applicable for HF118F/XXX-1XX2XX</div>				metallic retainer 118F-H1

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT			Unit: mm
Socket	Outline Dimensions	Wiring Diagram	Components Available
<div>118F-2Z-A1</div> <div></div> <div>PCB terminal, PCB or Screw mounting Applicable for HF118F/XXX-1XX3XX</div>	<div></div> <div>(Top View)</div>	<div></div> <div>(Top View)</div>	<div>metallic retainer 118F-H1</div>

DIMENSION OF RELATED COMPONENT (AVAILABLE)		Unit: mm
Retainer		
118F-H1 (metallic retainer)		
<div></div>		

Things to be noticed when selecting sockets:

1. Please choose suitable relay socket according to the actual mounting environment, relay contact poles and terminal layout. If there is any query on selection, please contact Hongfa for the technical service.
2. As for related components, they should be selected separately. Please do give clear indication of the types of relay sockets and related components you choose while placing order.
3. The above is only an example of typical socket and related component type which is suitable to HF118F 1 poles relay. If you have any special requirements, please contact us.

Disclaimer

This datasheet is for the customers' reference. All the specifications are subject to change without notice. We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact Hongfa for the technical service. However, it is the user's responsibility to determine which product should be used only.

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