

# HF118F 1 pole (JQX-118F) MINIATURE HIGH POWER RELAY



File No.: E133481



File No.: 40010480



File No.: CQC04001011425



## Features

- 10A switching capability
- 5kV dielectric strength (between coil and contacts)
- Low height: 12.5 mm
- Creepage distance >8mm (VDE0435,0631,0700)
- Product in accordance to IEC 60335-1 available
- 1 pole configurations available
- Sockets available
- Wash tight 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 (specialties 1A5,1B6)
Contact material	See ordering info.
Contact resistance	100mΩ (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 (1.2X50μs)	
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: 50m/s <sup>2</sup> (5g) NO: 100m/s <sup>2</sup> (10g)
	Destructive	1000m/s <sup>2</sup> (100g)
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	35% to 85% RH	
Termination	PCB	
Unit weight	Approx. 8g	
Construction	Wash tight, Flux proofed	

Notes: The data shown above are initial values.

## COIL

Coil power	220 to 290mW
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## COIL DATA

at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance Ω
5	3.50	0.5	11.8	113 x (1±10%)
6	4.20	0.6	14.1	164 x (1±10%)
9	6.30	0.9	21.2	360 x (1±10%)
12	8.40	1.2	28.2	620 x (1±10%)
18	12.70	1.8	42.3	1,295 x (1±10%)
24	16.80	2.4	56.4	2,350 x (1±15%)
48	33.60	4.8	112.8	8,000 x (1±15%)
60	42.00	6.0	141.0	12,500 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.



HONGFA RELAY

ISO9001、ISO/TS16949、ISO14001、OHSAS18001 CERTIFIED

2007 Rev. 2.00

## SAFETY APPROVAL RATINGS

<b>UL&amp;CUR</b> (AgNi, AgSnO <sub>2</sub> )	version 1,2,3,5,6	10A 250VAC 10A 30VDC B300 R300 1/2HP 240VAC AgSnO <sub>2</sub> : 1/3HP 120VAC
<b>VDE</b> (AgNi, AgNi+Au)	1H (;S) (1;2;3;5;7) (-;G) 1D (;S) (1;2;3;6) (-;G) 1Z (-;S) (1;2;3) (-;G)	8A 250VAC at 85°C 8A 250VAC at 85°C 8A 250VAC at 85°C
<b>VDE</b> (AgSnO <sub>2</sub> , AgSnO <sub>2</sub> +Au)	1H (-;S) (1;2;3;5;7), T.(-;G) 1D (-;S) (1;2;3;6), T.(-;G) 1Z (-;S) (1;2;3), T.(-;G) 1H (-;S) (1;2;3;5;7), T.(-;G) 1Z (-;S) (1;2;3), T.(-;G)	8A 250VAC at 85°C 8A 250VAC at 85°C 8A 250VAC at 85°C AC-15 (Make: 30A 250VAC COS Ø=0.7 at 85°C Break: 3A 250VAC COS Ø=0.4 at 85°C) 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

<b>Type</b> <sup>1)</sup>	HF118F JQX-118F (Old type)	<b>012</b>	<b>-1H</b>	<b>S</b>	<b>1</b>	<b>G</b>	<b>(XXX)</b>
<b>Coil voltage</b>	5, 6, 9, 12, 18, 24, 48, 60VDC						
<b>Contact arrangement</b>	1H: 1 Form A 1D: 1 Form B 1Z: 1 Form C						
<b>Construction</b> <sup>2)</sup>	S: Wash tight Nil: Flux proofed						
<b>Version</b> (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						
<b>Contact material</b>	T: AgSnO <sub>2</sub> G: AgNi+Au plated TG: AgSnO <sub>2</sub> +Au plated Nil: AgNi						
<b>Customer special code</b> <sup>3)</sup>	Only for special requirements, e.g. (555) stands for RoHS compliant						

**Notes:** 1) We have now gradually updated our ordering information. We suggest new type should be selected. If necessary, old type can be kept for some period for the old customers.

2) Under the ambience with dangerous gas like H<sub>2</sub>S, SO<sub>2</sub> or NO<sub>2</sub>, wash tight type is recommended; please test the relay in real applications. If the ambience allows, flux proofed is preferentially recommended.

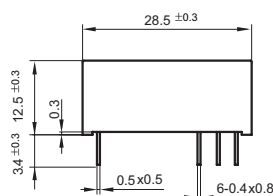
3) HF118F is an environmental friendly product. Please mark a special code (555) when ordering.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

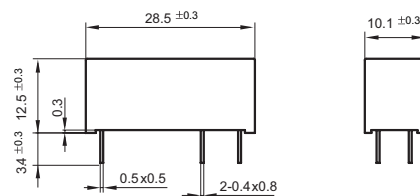
Unit: mm

### Outline Dimensions

#### 3.2mm pinning



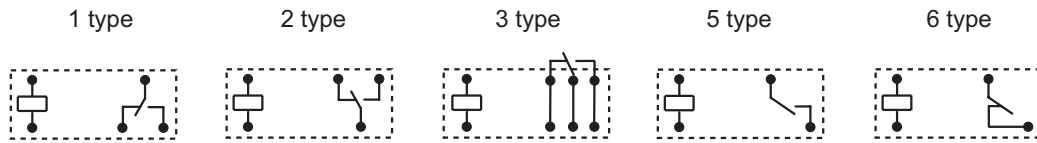
#### 5mm pinning



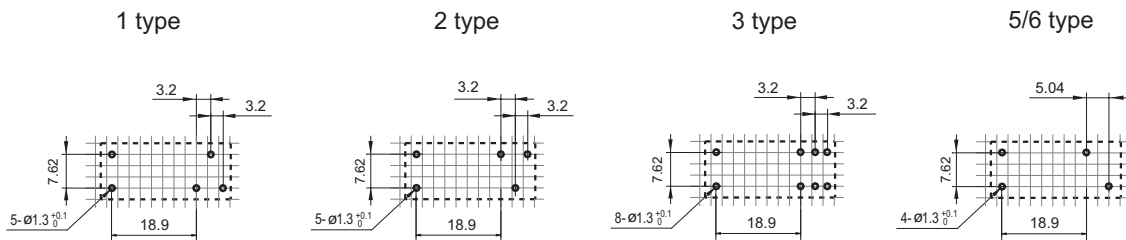
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

### Wiring Diagram (Bottom view)



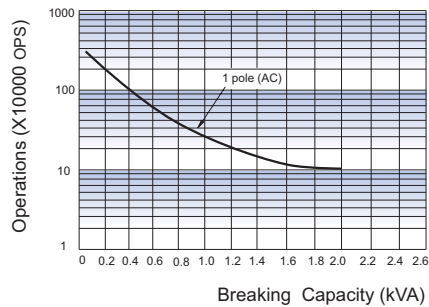
### PCB Layout (Bottom view)



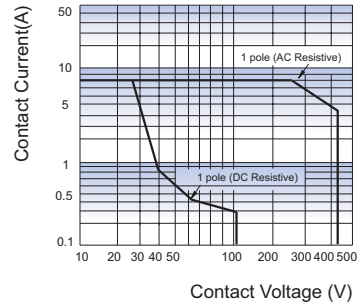
- Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should 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  $2.54\text{mm}$ .

## CHARACTERISTIC CURVES

ENDURANCE CURVE



MAXIMUM SWITCHING POWER



### 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.