

# HF118FK

# MINIATURE HIGH POWER RELAY



File No.: E134517



File No.: 40010480



File NO.:CQC09002035071  
CQC18002206322



## Features

- 8A 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
- Flux proofed types
- Through-Hole Reflow Version available

## CONTACT DATA

Contact arrangement	A,C
Contact material	See ordering info.
Contact resistance	100mΩ max.(at 1A 6VDC)
Contact rating (Res. load)	8A 250VAC/30VDC
Max. switching voltage	440VAC / 125VDC
Max. switching current	8A
Max. switching power	2000VA / 240W
Mechanical endurance	1 x 10 <sup>7</sup> OPS
Electrical endurance	H type:1 x 10 <sup>5</sup> OPS (8A 250VAC, Resistive load,at 85°C ,5s on 5s off)

## 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 to 85°C	
Humidity	5% to 85% RH	
Termination	PCB	
Unit weight	Approx. 8g	
Construction	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
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## COIL DATA at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max. <sup>1)</sup>	Drop-out Voltage VDC min. <sup>1)</sup>	Max Allowable Voltage VDC <sup>2)</sup>	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 <sup>3)</sup>	33.60	4.8	72.0	8000 x (1±15%)
60 <sup>3)</sup>	42.00	6.0	90.0	12500 x (1±15%)

Notes: 1) The data show above are initial values.  
2) Maximum voltage refers to the maximum voltage Which relay coil could endurance in a short period of time.  
3) For products with rated voltage ≥48V,measures should be taken to prevent coil overvoltage in order to protect coil in test and application(eg.Connect diodes in parallel).



HONGFA RELAY

ISO9001, IATF16949, ISO14001, ISO45001, IECQ QC 080000 CERTIFIED

2023 Rev. 1.00

## SAFETY APPROVAL RATINGS

<b>UL/CUL</b> (AgNi,AgSnO <sub>2</sub> )	version1,5	NO: 8A 250VAC at 85°C NO/NC: 8A 250VAC at 85°C B300 AgNi: R300
<b>VDE</b> (AgSnO <sub>2</sub> ,AgSnO <sub>2</sub> +Au)	H5T.(-;G)	8A 250VAC at 85°C
	Z1T.(-;G)	8A 250VAC at 85°C
	H5T.(-;G)	AC-15(Make: 15A 250VAC COS φ = 0.7 at 85°C Break: 1.5A 250VAC COS φ =0.4 at 85°C)
<b>VDE</b> (AgNi,AgNi+Au)	H53.(-;G)	8A 250VAC at 85°C
	Z13.(-;G)	8A 250VAC at 85°C
	H53.(-;G)	AC-15(Make: 30A 250VAC COS φ =0.7 at 85°C Break: 3A 250VAC COS φ =0.4 at 85°C)
	Z13.(-;G)	NO: AC-15(Make: 30A 250VAC COS φ =0.7 at 85°C Break: 3A 250VAC COS φ =0.4 at 85°C)

Notes: 1) All values unspecified are at room temperature.

2) Only typical loads are listed above. Other load specifications can be available upon request.

## ORDERING INFORMATION

<b>Type</b>	HF118FK / 12 -Z 1 T G (XXX)
<b>Coil voltage</b>	5, 6, 9, 12, 18, 24, 48, 60VDC
<b>Contact arrangement</b>	H: 1 Form A Z: 1 Form C
<b>Version</b> (See Wiring Diagram below)	1: 3.2mm 1 pole 8A, only 1 Form C 5: 5mm 8A, only 1 Form A
<b>Contact material</b>	T: AgSnO <sub>2</sub> 3:AgNi
<b>Contact plating</b>	G: Gold plated Nil: Standard
<b>Customer special code</b>	XXX:Customer special requirement Nil: Standard

Notes: 1)Flux proof relays cannot be used in polluted environment (with contaminations like H<sub>2</sub>S,SO<sub>2</sub>,NO<sub>2</sub>,dust,etc.).

2)Water cleaning or surface process is not allowed in assembling relays on PCB.

3)For gold plated type,the min. switching current and min. switching voltage is 10mA 5VDC.

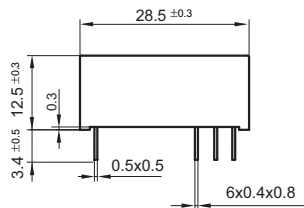
4)The customer special requirement express as special code evaluating by Hongfa. E.g.(335) standards for product in accordance to IEC 60335-1(GWT);e.g.(253) means Through-Hole Reflow Version(valid for Flux proofed only).

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

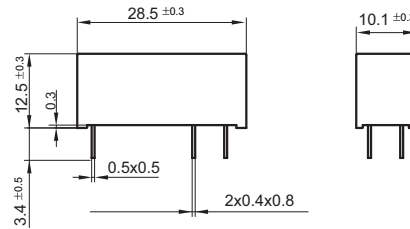
Unit: mm

### Outline Dimensions

3.2mm pinning



5mm pinning



### Wiring Diagram (Bottom view)

Version 1



Version 5

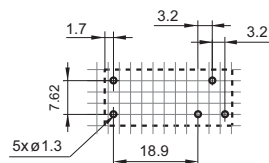


## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

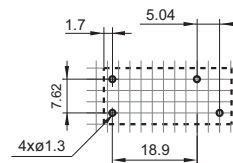
Unit: mm

### PCB Layout (Bottom view)

Version 1



Version 5



Remark: 1) The pin dimension of the product outline drawing is the size before tinning (it will become larger after tinning), and the mounting hole size is the recommended design size of the PCB board hole. The specific PCB board hole design size can be mapped and adjusted according to the actual product.

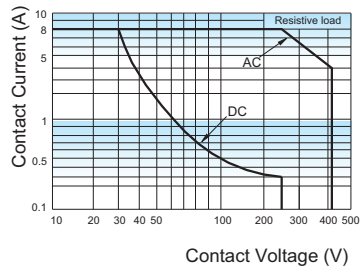
2) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be  $\pm 0.4\text{mm}$ .

3) The tolerance without indicating for PCB layout is always  $\pm 0.1\text{mm}$ .

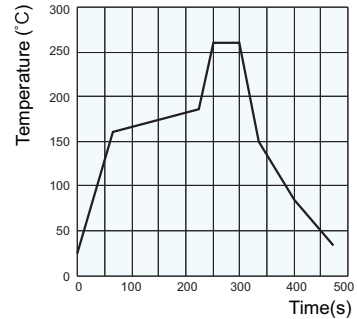
4) The width of the gridding is 2.54mm.

## CHARACTERISTIC CURVES

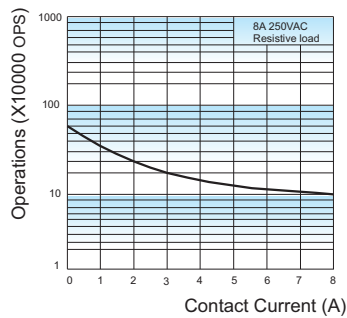
MAXIMUM SWITCHING POWER



REFLOW WELDING TEMPERATURE  
(Reflow soldering version)

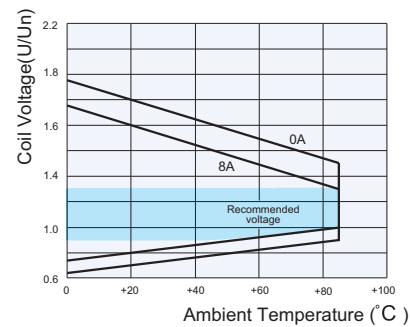


ENDURANCE CURVE



**Note:**  
Test conditions:  
NO, Resistive load, 250VAC  
Flux proofed, 85°C, 5s on 5s off.

COIL OPERATING RANGE (DC) \*



**Notes:** \* The use of a relay with an energising voltage other than the rated coil voltage may lead to reduced electrical life. An energising voltage over the above range may damage the insulation of relay coil.

### Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications 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.