

# HF118FK

# MINIATURE HIGH POWER RELAY



File No.: E134517



File No.: Pending



## 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
- The product is dust protected type
- UL insulation system: Class F
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (28.5 x 10.1 x 12.5) mm

## CONTACT DATA

|                            |  |
|----------------------------|--|
| Contact arrangement        | 1A, 1B, 1C<br>(special:1A(5 version), 1B(6 version))               |
| Contact material           | AgSnO <sub>2</sub>   |
| 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       | 1 x 10 <sup>5</sup> OPS<br>(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><br>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                            | Dust protected          |  |

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(Pending)

|        |  |
|--------|--|
| UL/CUL | NO: 8A 125VAC at 85°C<br>NO/NC: 8A 125VAC at 85°C                          |
| VDE    | NO: 8A 250VAC at 85°C<br>AC-15 15A/1.5A 230VAC<br>NO/NC: 8A 250VAC at 85°C |

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



HONGFA RELAY

ISO9001, ISO/TS16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

2013 Rev. 1.01T

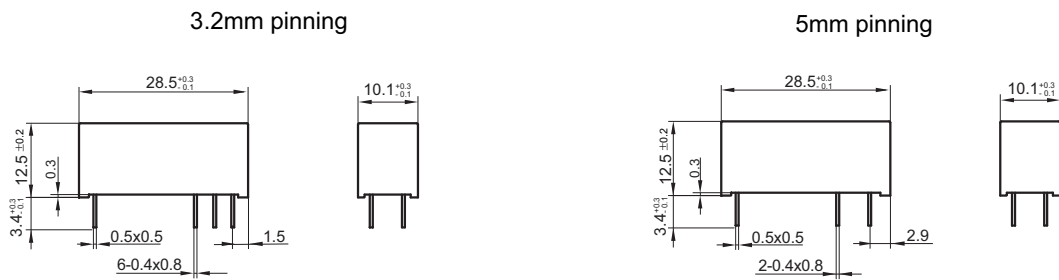
## ORDERING INFORMATION

|                       |   |    |    |   |   |       |
|-----------------------|---|----|----|---|---|-------|
| Type                  | HF118FK /   | 12 | -H | 1 | T | (XXX) |
| Coil voltage          | 5, 6, 9, 12, 18, 24, 48, 60VDC  |    |    |   |   |       |
| Contact arrangement   | H: 1 Form A D: 1 Form B Z: 1 Form C   |    |    |   |   |       |
| Version               | 1: 3.2mm 1 pole 8A<br>(See Wiring Diagram below) 5: 5mm 8A, only 1 Form A<br>6: 5mm 8A, only 1 Form B |    |    |   |   |       |
| Contact material      | T: AgSnO <sub>2</sub>   |    |    |   |   |       |
| Customer special code | e.g. (335) stands for product in accordance to IEC 60335-1 (GWT).                                     |    |    |   |   |       |

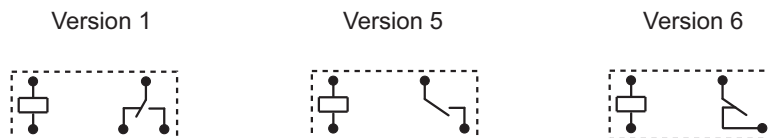
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

### Outline Dimensions



### Wiring Diagram (Bottom view)

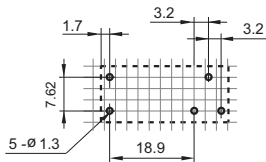


# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

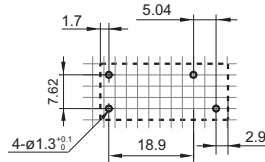
Unit: mm

## PCB Layout (Bottom view)

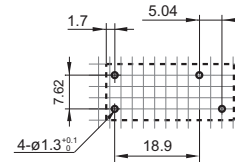
Version 1



Version 5



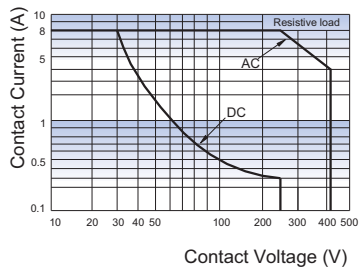
Version 6



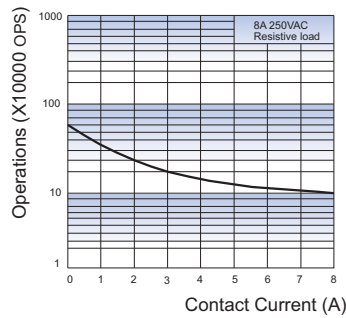
- Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should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

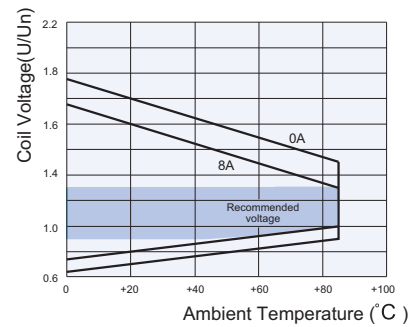
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



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 abover range may damage the insulation of relay coil.

### 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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