

# HF115FK

# MINIATURE HIGH POWER RELAY



File No.:E134517



File No.:116934



File No.:CQC13002103948



## Features

- Low height: 15.7 mm
- 16A switching capability
- 5kV dielectric strength (between coil and contacts)
- Creepage distance: 10mm
- Meeting reinforce insulation
- Product in accordance to IEC 60335-1 available
- Dust protected and flux proofed types available
- UL insulation system: Class F
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (29.0 x 12.7 x 15.7) mm

## CONTACT DATA

|                            |  |           |
|----------------------------|--|-----------|
| Contact arrangement        | 1A, 1C   | 2A, 2C    |
| Contact resistance         | 100mΩ max.(at 1A 6VDC)   |           |
| Contact material           | AgSnO <sub>2</sub>   |           |
| Contact rating (Res. load) | 12A/16A 250VAC   | 8A 250VAC |
| Max. switching voltage     | 400VAC   |           |
| Max. switching current     | 12A / 16A  | 8A        |
| Max. switching power       | 3000VA / 4000VA  | 2000VA    |
| Mechanical endurance       | 1 x 10 <sup>7</sup> OPS  |           |
| Electrical endurance       | 5 x 10 <sup>4</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        |
|   | Between contact sets            | 2500VAC 1min        |
| Surge voltage (between coil & contacts) | 10kV (1.2 / 50μs)               |                     |
| Operate time (at nomi. volt.)           | 10ms max.                       |                     |
| Release time (at nomi. volt.)           | 5ms max.                        |                     |
| Shock resistance *                      | Functional                      | 98m/s <sup>2</sup>  |
|   | Destructive                     | 980m/s <sup>2</sup> |
| Vibration resistance *                  | 10Hz to 150Hz 10g/5g            |                     |
| Humidity                                | 5% to 85% RH                    |                     |
| Ambient temperature                     | -40°C to 85°C                   |                     |
| Termination                             | PCB                             |                     |
| Unit weight                             | Approx. 13g                     |                     |
| Construction                            | Dust protected,<br>Flux proofed |                     |

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

## COIL

|            |               |
|------------|---------------|
| Coil power | Approx. 400mW |
|------------|---------------|

## 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                          | 62 x (1±10%)      |
| 6                   | 4.20                     | 0.6                       | 9.0                          | 90 x (1±10%)      |
| 9                   | 6.30                     | 0.9                       | 13.5                         | 202 x (1±10%)     |
| 12                  | 8.40                     | 1.2                       | 18                           | 360 x (1±10%)     |
| 18                  | 12.60                    | 1.8                       | 27                           | 810 x (1±10%)     |
| 24                  | 16.80                    | 2.4                       | 36                           | 1440 x (1±10%)    |
| 48                  | 33.60                    | 4.8                       | 72                           | 5760 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 | 2Z4T: 8A 250VAC at 85°C |
|        | Z1T: 12A 250VAC at 85°C |
|        | Z2T: 12A 250VAC at 85°C |
|        | Z3T: 16A 250VAC at 85°C |
| VDE    | 2Z4T: 8A 250VAC at 85°C |
|        | Z1T: 12A 250VAC at 85°C |
|        | Z2T: 12A 250VAC at 85°C |
|        | Z3T: 16A 250VAC at 85°C |
|        | H3T: 10A 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

2014 Rev. 1.00T

## ORDERING INFORMATION

|                                |   |    |   |   |   |       |
|--------------------------------|---|----|---|---|---|-------|
| Type                           | HF115FK /   | 12 | -H  | 3 | T | (XXX) |
| Coil voltage                   | 5, 6, 9, 12, 18, 24, 48 VDC   |    |   |   |   |       |
| Contact arrangement            | H: 1 Form A<br>2H: 2 Form A   |    | Z: 1 Form C<br>2Z: 2 Form C               |   |   |       |
| Version                        | 1: 3.5mm 1 pole 12A<br>3: 5.0mm 1 pole 16A  |    | 2: 5.0mm 1 pole 12A<br>4: 5.0mm 2 pole 8A |   |   |       |
| Contact material <sup>1)</sup> | T: AgSnO <sub>2</sub>   |    | TG: AgSnO <sub>2</sub> + Au plated        |   |   |       |
| Customer special code          | e.g. (528) stands for flux proofed type;<br>(335) stands for product in accordance to IEC 60335-1 (GWT) |    |   |   |   |       |

Notes: 1) For gold plated type, the min. switching current and min. switching voltage is 10mA 5VDC;

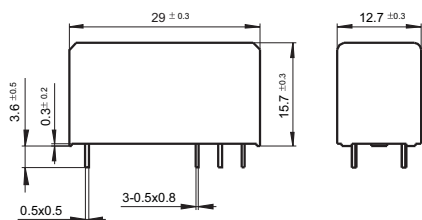
2) We recommend dust protected and plux proofed types for a clean environment (free from contamination like H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, dust, etc.). Especially, avoiding flux and pollutant ingress into relay for dust protected type.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

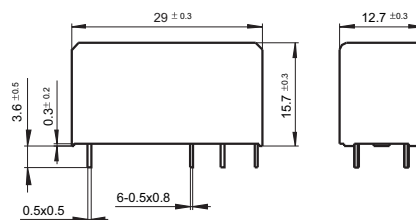
Unit: mm

### Outline Dimensions

3.5mm Pinning (HF115FK/ □□ -□ -1 -□)

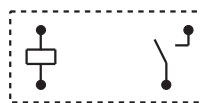


5mm Pinning (HF115FK/ □□ -□ □ -2/3/4 -□)

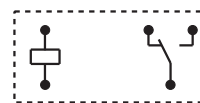


### Wiring Diagram (Bottom view)

3.5/5mm Pinning, 1 Pole, 12A, HF115FK/ □□ -□ -1/2 -□



1 Form A

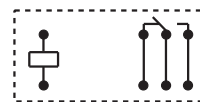


1 Form C

5mm Pinning, 1 Pole, 16A, HF115FK/ □□ -□ -3 -□

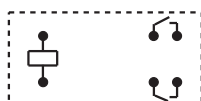


1 Form A

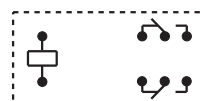


1 Form C

5mm Pinning, 2 Pole, 8A, HF115FK/ □□ -2 □ -4 -□

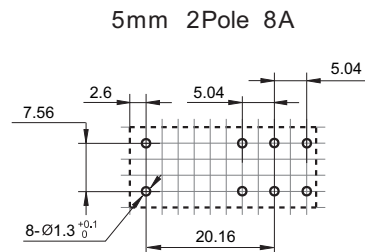
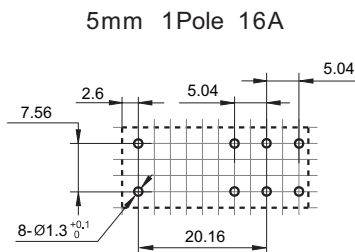
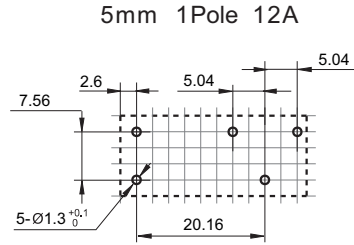
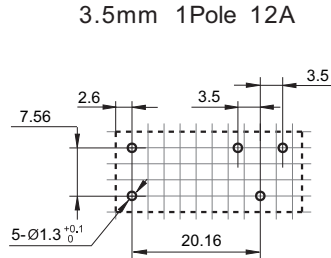


2 Form A



2 Form C

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 2.52mm.

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.