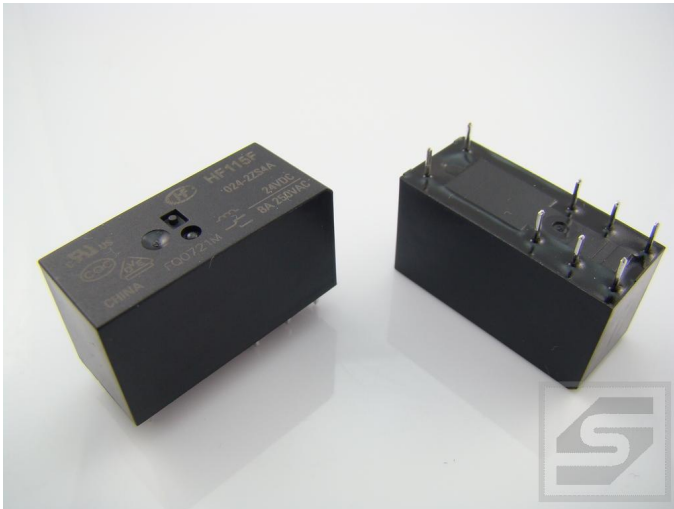




# Przełącznik JQX/HF115F-024-2ZS4A Hongfa odp.RM84P-24VDC 2P;8A;druk



## Dane techniczne:

Nazwa: JQX/HF115F-024-2ZS4A

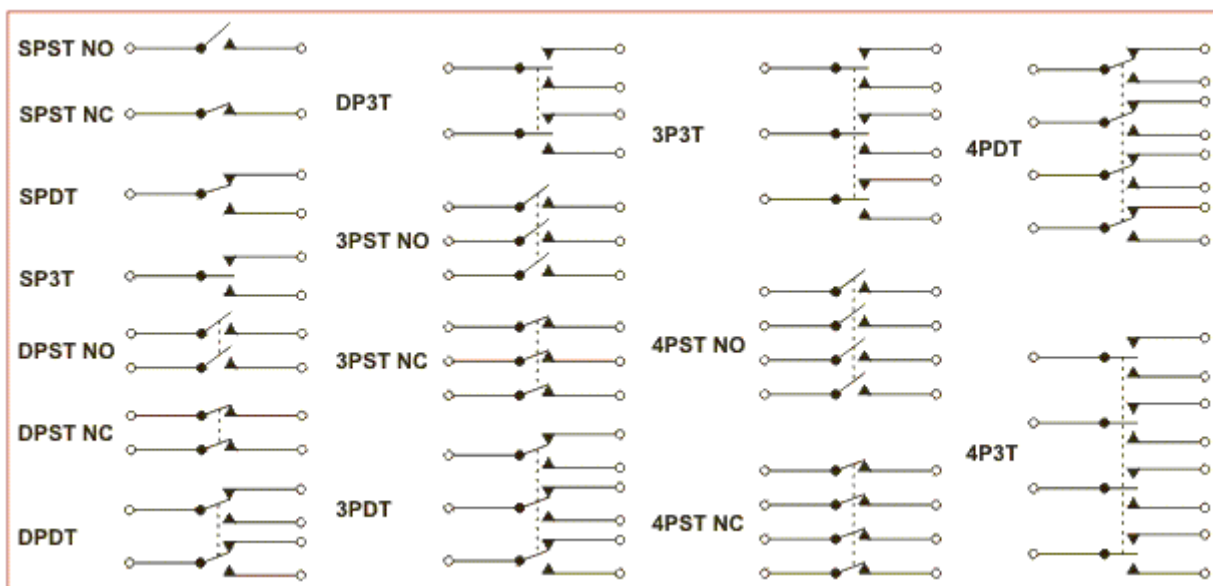
Obciążalność prądowa: 8A

Napięcie cewki: 24V

Konfiguracja styków: podwójny przełączny (DPDT)

Montaż: THT

Producent: HONGFA



# HF115F

# MINIATURE HIGH POWER RELAY



File No.:E134517



File No.:116934



File No.:CQC02001001951



## Features

- Low height: 15.7 mm
- 16A switching capability
- 5kV dielectric strength (between coil and contacts)
- Creepage distance: 10mm
- VDE0435 / 0631 / 0700
- Product in accordance to IEC 60335-1 available
- Sockets available
- Wash tight and flux proofed types available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (29.0 x 12.7 x 15.7) mm

## CONTACT DATA

|                            |  |            |
|----------------------------|--|------------|
| Contact arrangement        | 1A, 1B, 1C   | 2A, 2B, 2C |
| Contact resistance         | 100mΩ (at 1A 6VDC)   |            |
| Contact material           | See ordering info.   |            |
| Contact rating (Res. load) | 12A/16A 250VAC   | 8A 250VAC  |
| Max. switching voltage     | 440VAC / 125VDC  |            |
| Max. switching current     | 12A / 16A  | 8A         |
| Max. switching power       | 3000VA / 4000VA  | 2000VA     |
| 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        |
|   | Between contact sets        | 2500VAC 1min        |
| Surge voltage (between coil & contacts) | 10kV (1.2X50μs)             |                     |
| Operate time (at nomi. volt.)           | 15ms max.                   |                     |
| Release time (at nomi. volt.)           | 8ms max.                    |                     |
| Temperature rise (at nomi. volt.)       | 55K max.                    |                     |
| Shock resistance                        | Functional                  | 98m/s <sup>2</sup>  |
|   | Destructive                 | 980m/s <sup>2</sup> |
| Vibration resistance                    | 10Hz to 150 Hz 10g/5g       |                     |
| Humidity                                | 35% to 85% RH               |                     |
| Ambient temperature                     | -40°C to 85°C               |                     |
| Termination                             | PCB                         |                     |
| Unit weight                             | Approx. 13.5g               |                     |
| Construction                            | Wash tight,<br>Flux proofed |                     |

Notes: The data shown above are initial values.

## COIL

|            |       |
|------------|-------|
| Coil power | 400mW |
|------------|-------|

## 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                  | 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%)    |
| 60                  | 42.00               | 6.0                  | 90                         | 7500 x (1±15%)    |
| 110                 | 77.00               | 11.0                 | 165                        | 25200 x (1±15%)   |

## ELECTRICAL LIFE DATA

| Configuration         | Contact Rating            | Minimum Operation                 |
|-----------------------|---------------------------|-----------------------------------|
| SPST Special code:105 | Pilot duty (A300), 250VAC | 250,000min.<br>(1sec ON/9sec OFF) |

### Notes:

1. Test conditions: ON:30A/250VAC cosφ=0.35, OFF:3A/250VAC cosφ=0.35;at room temperature;
2. The tests were performed by Hongfa laboratory (VDE approved as TDAP laboratory).



HONGFA RELAY

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

2008 Rev. 1.00

## SAFETY APPROVAL RATINGS

### VDE

| Contact material        | Specifications                  | Ratings                       | Ambient Temperature |
|-------------------------|---------------------------------|-------------------------------|---------------------|
| AgCdO                   | HF115F....2(H;Z)(S)4(G)(F)      | 8A 250VAC                     | at 70°C             |
|                         | HF115F....1H(S)(1;2)(G)(F)      | 12A 250VAC                    | at 70°C             |
|                         |                                 | 10A 250VAC                    | at 70°C             |
|                         | HF115F....1Z(S)(1;2)(G)(F)      | 12A 250VAC                    | at 70°C             |
|                         | HF115F....1H(S)3(G)(F)          | 16A 250VAC                    | at 70°C             |
|                         |                                 | 10A 250VAC                    | at 70°C             |
| 9A 250VAC COSØ =0.4     |                                 | at 70°C                       |                     |
| HF115F....1Z(S)3(G)(F)  | 16A 250VAC                      | at 70°C                       |                     |
|                         | 9A 250VAC COSØ =0.4             | at 70°C                       |                     |
| AgNi                    | HF115F....2(H;Z)(S)4B(G)(F)     | 5A 400VAC                     | at 85°C             |
|                         |                                 | 8A 250VAC                     | at 85°C             |
|                         | HF115F....1H(S)(1;2)B(G)(F)     | 12A 250VAC                    | at 85°C             |
|                         | HF115F....1Z(S)(1;2)B(G)(F)     | 12A 250VAC                    | at 85°C             |
|                         | HF115F....1H(S)3B(G)(F)         | 16A 250VAC                    | at 85°C             |
|                         |                                 | 12A 250VAC                    | at 85°C             |
|                         |                                 | 9A 250VAC COSØ =0.4           | at 85°C             |
|                         | HF115F....1Z(S)3B(G)(F)         | 16A 250VAC (NO only)          | at 85°C             |
|                         |                                 | 12A 250VAC                    | at 85°C             |
|                         |                                 | 9A 250VAC COSØ =0.4 (NO only) | at 70°C             |
| 10(4)A 250VAC (NO only) |                                 | at 65°C                       |                     |
|                         | 12(2)A 250VAC (NO only)         | at 65°C                       |                     |
| AgSnO <sub>2</sub>      | HF115F....2(H;Z)(S)4A(G)(F)     | 8A 250VAC                     | at 85°C             |
|                         | HF115F....1(H;Z)(S)(1;2)A(G)(F) | 12A 250VAC                    | at 85°C             |
|                         | HF115F....1H(S)3A(G)(F)         | 16A 250VAC                    | at 85°C             |
|                         |                                 | 9A 250VAC COSØ =0.4           | at 70°C             |
|                         | HF115F....1Z(S)3B(G)(F)         | 16A 250VAC                    | at 85°C             |
|                         |                                 | 9A 250VAC COSØ =0.4 (NO only) | at 70°C             |

### UL&CUL

|                                      |                    |                                 |                    |
|--------------------------------------|--------------------|---------------------------------|--------------------|
| Version 1 or 2 (AgCdO)               | 12A 277VAC         | Version 3 (AgSnO <sub>2</sub> ) | 16A 277 VAC        |
|                                      | 1/2HP 250VAC       |                                 | 1/3HP 125VAC       |
|                                      | 1/3HP 125VAC       |                                 | 1/2HP 250VAC       |
| Version 1 or 2 (AgSnO <sub>2</sub> ) | 12A/ 277VAC        | Version 3 (AgNi)                | B300               |
|                                      | B300               |                                 | R300               |
|                                      | R300               |                                 | 16A 277VAC         |
| Version 1 or 2 (AgNi)                | 12A 277VAC         | Version 4 (AgCdO)               | 5FLA, 30LRA 250VAC |
| Version 3 (AgCdO)                    | 16A 277 VAC        |                                 | 10A 250VAC         |
|                                      | 9A 250VAC at 105°C |                                 | 8A 277VAC          |
|                                      | 1HP 250VAC         |                                 | 1/2HP 250VAC       |
|                                      | 1/2HP 125VAC       |                                 | 1/4HP 125VAC       |
| Version 3 (AgNi)                     | TV-5 125VAC        | Version 4 (AgSnO <sub>2</sub> ) | 8A 277VAC          |
|                                      |                    | Version 4 (AgNi)                | 8A 277VAC          |

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

## ORDERING INFORMATION

|                                   |  |                                |                     |  |                     |  |                     |                    |  |
|-----------------------------------|--|--------------------------------|---------------------|--|---------------------|--|---------------------|--------------------|--|
| <b>Type</b>                       |  | HF115F / 012 -1H S 1 A F (XXX) |                     |  |                     |  |                     |                    |  |
| <b>Coil voltage</b>               | 5, 6, 9, 12, 18, 24, 48, 60, 110VDC  |                                |                     |  |                     |  |                     |                    |  |
| <b>Contact arrangement</b>        | 1H: 1 Form A 1D: 1 Form B 1Z: 1 Form C<br>2H: 2 Form A 2D: 2 Form B 2Z: 2 Form C |                                |                     |  |                     |  |                     |                    |  |
| <b>Construction</b> <sup>1)</sup> | S: Wash tight  |                                | Nil: Flux proofed   |  |                     |  |                     |                    |  |
| <b>Version</b>                    | 1: 3.5mm 1 pole 12A  |                                | 2: 5.0mm 1 pole 12A |  | 3: 5.0mm 1 pole 16A |  |                     | 4: 5.0mm 2 pole 8A |  |
| <b>Contact material</b>           | A: AgSnO <sub>2</sub>  |                                | B: AgNi             |  | Nil: AgCdO          |  | G: AgCdO+ Au plated |                    |  |
|                                   | AG: AgSnO <sub>2</sub> + Au plated   |                                | BG: AgNi+ Au plated |  |                     |  |                     |                    |  |
| <b>Insulation standard</b>        | F: Class F   |                                | Nil: Class B        |  |                     |  |                     |                    |  |
| <b>Customer special code</b>      |  |                                |                     |  |                     |  |                     |                    |  |

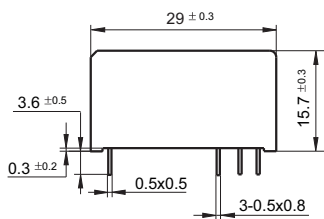
Notes: 1) Under the ambience with dangerous gas like H<sub>2</sub>S, SO<sub>2</sub> or NO<sub>2</sub>, wash tight type is recommended; please test the relay in real applications. If the ambience allows, flux proofed is preferentially recommended.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

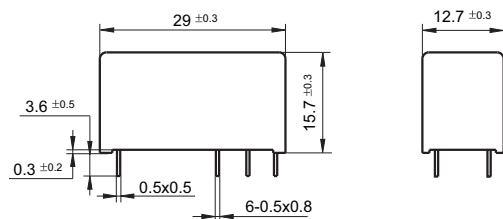
Unit: mm

### Outline Dimensions

3.5mm Pinning (HF115F/ □□□ -□□ -□ -1 -□□)



5mm Pinning (HF115F/ □□□ -□□ -□ -2/3/4 -□□)



### Wiring Diagram (Bottom view)

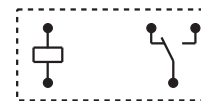
3.5/5mm Pinning, 1 Pole, 12A, HF115F/ □□□ -□□ -□ -1/2-□□



1 Form A



1 Form B



1 Form C

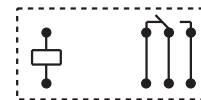
5mm Pinning, 1 Pole, 16A, HF115F/ □□□ -□□ -□ -3-□□



1 Form A

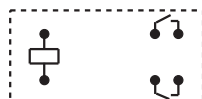


1 Form B

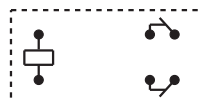


1 Form C

5mm Pinning, 2 Pole, 8A, HF115F/ □□□ -□□ -□ -4-□□



2 Form A

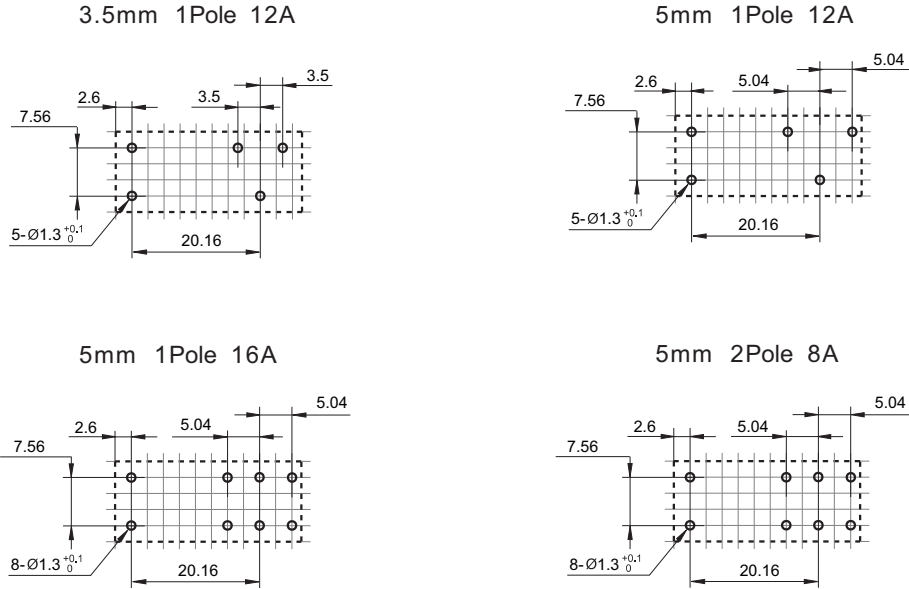


2 Form B



2 Form C

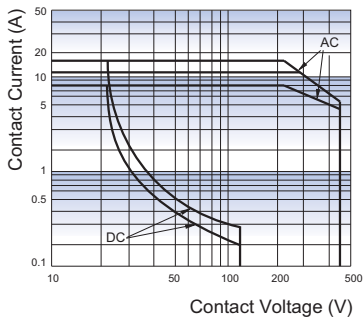
**PCB Layout (Bottom view)**



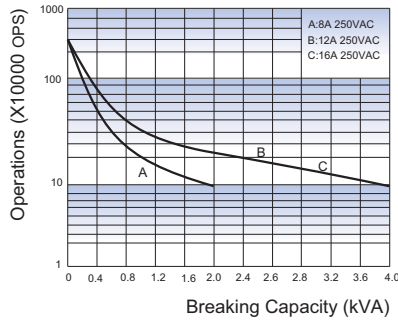
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be  $\pm 0.4\text{mm}$ .  
 2) The tolerance without indicating for PCB layout is always  $\pm 0.1\text{mm}$ .  
 3) The width of the gridding is 2.52mm.

**CHARACTERISTIC CURVES**

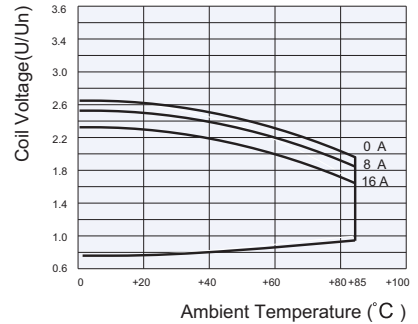
**MAXIMUM SWITCHING POWER (23°C )**



**ENDURANCE CURVE**



**COIL OPERATING RANGE (DC)**



**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.