

# HF102F

# MINIATURE HIGH POWER RELAY



File No.:E134517



File No.:40024142



File No.:CQC08002028081



## Features

- 4.5kV dielectric strength (between coil and contacts)
- Heavy load up to 5000VA
- Ideal for motor switching
- PCB & QC layouts available
- UL insulation system: Class F
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (30.5 x 16.0 x 23.5) mm

## CONTACT DATA

|                        |                                                                                    |
|------------------------|------------------------------------------------------------------------------------|
| Contact arrangement    | 1A                                                                                 |
| Contact resistance     | 100mΩ max.(at 1A 6VDC)                                                             |
| Contact material       | AgSnO <sub>2</sub> , AgCdO                                                         |
| Contact rating         | Resistive: 20A 250VAC<br>Motor: 2HP 240VAC                                         |
| Max. switching voltage | 250VAC                                                                             |
| Max. switching current | Resistive: 25A                                                                     |
| Max. switching power   | 6250VA                                                                             |
| Mechanical endurance   | 2 x 10 <sup>6</sup> ops                                                            |
| Electrical endurance   | 1 x 10 <sup>5</sup> ops (20A 250VAC,<br>Resistive load, at 85°C, 1.5s on 1.5s off) |

## COIL

|            |               |
|------------|---------------|
| Coil power | Approx. 900mW |
|------------|---------------|

## COIL DATA

at 23°C

| Nominal Voltage VDC | Pick-up Voltage VDC max. | Drop-out Voltage VDC min. | Max. Voltage VDC * | Coil Resistance Ω |
|---------------------|--------------------------|---------------------------|--------------------|-------------------|
| 5                   | 3.5                      | 0.5                       | 6.0                | 27.8 x (1±10%)    |
| 12                  | 8.4                      | 1.2                       | 14.4               | 160 x (1±10%)     |
| 24                  | 16.8                     | 2.4                       | 28.8               | 640 x (1±10%)     |
| 48                  | 33.6                     | 4.8                       | 57.6               | 2560 x (1±10%)    |

**Notes:** \*Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

## CHARACTERISTICS

|                                   |                         |                                   |
|-----------------------------------|-------------------------|-----------------------------------|
| Insulation resistance             |                         | 1000MΩ (at 500VDC)                |
| Dielectric strength               | Between coil & contacts | 4500VAC 1min                      |
|                                   | Between open contacts   | 1000VAC 1min                      |
| Operate time (at nomi. volt.)     |                         | 20ms max.                         |
| Release time (at nomi. volt.)     |                         | 10ms max.                         |
| Temperature rise (at nomi. volt.) |                         | 60K max.                          |
| Shock resistance                  | Functional              | 196m/s²                           |
|                                   | Destructive             | 980m/s²                           |
| Vibration resistance              |                         | 10Hz to 55Hz 1.5mm DA             |
| Ambient temperature               |                         | -25°C to 85°C                     |
| Humidity                          |                         | 5% to 85% RH                      |
| Termination                       |                         | HF102F: PCB & QC<br>HF102F-P: PCB |
| Unit weight                       |                         | Approx. 23g                       |
| Construction                      |                         | Dust protected                    |

**Notes:** The data shown above are initial values.

## SAFETY APPROVAL RATINGS

|        |                    |
|--------|--------------------|
| UL/CUL | 25A 250VAC         |
|        | 20A 250VAC         |
|        | 1HP 120VAC         |
|        | 2HP 240VAC         |
| VDE    | 25A 250VAC at 55°C |
|        | 20A 250VAC 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.



HONGFA RELAY

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

2014 Rev. 1.01

## ORDERING INFORMATION

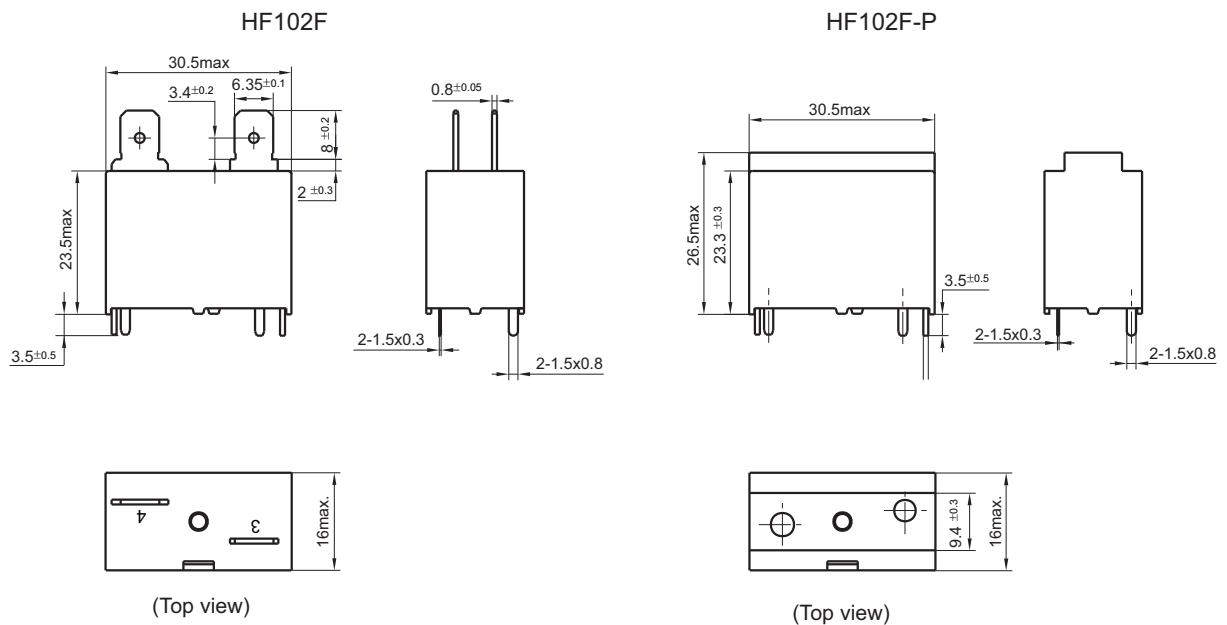
|                       |                                   |   |       |       |
|-----------------------|-----------------------------------|---|-------|-------|
| HF102F /              |                                   | T | 12VDC | (XXX) |
| Type                  | HF102F-P: PCB<br>HF102F: PCB & QC |   |       |       |
| Contact matcrial      | T: AgSnO <sub>2</sub> Nil: AgCdO  |   |       |       |
| Coil voltage          | 5, 12, 24, 48VDC                  |   |       |       |
| Customer special code |                                   |   |       |       |

Notes: HF102F is dust protected version which cannot be washed.

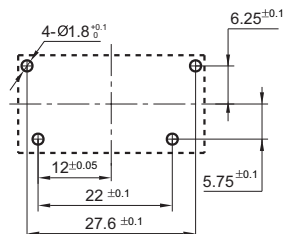
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

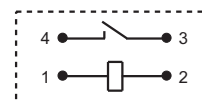
### Outline Dimensions



### PCB Layout (Bottom view)



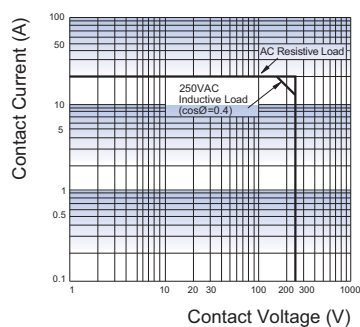
### Wiring Diagram



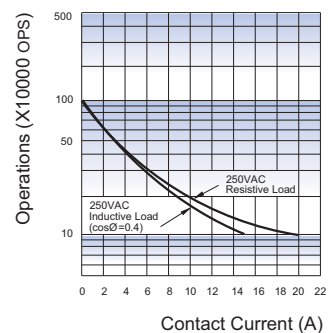
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.  
2) The tolerance without indicating for PCB layout is always ±0.1mm.

## CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER



ENDURANCE CURVE



**Test conditions:**

Room temp. 1s on 9s off

### 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.

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