

# HF18FH

## MINIATURE INTERMEDIATE POWER RELAY



File No.:E133481



File No.: 40010932



File No.:CQC02001002553



### Features

- 7A switching capability
- 1.5kV dielectric strength (between coil and contacts)
- 2 to 4 pole configurations
- Various terminals, test button available
- Gold plated contact available
- Sockets available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (28.0 x 21.5 x 36.0) mm

### CONTACT DATA

|                            |  |                 |
|----------------------------|--|-----------------|
| Contact arrangement        | 2C, 3C   | 4C              |
| Contact resistance         | 100mΩ (at 1A 6VDC)   |                 |
| Contact material           | Silver alloy   |                 |
| Contact rating (Res. load) | 7A 250VAC/30VDC  | 5A 250VAC/30VDC |
| Max. switching voltage     | 250VAC / 30VDC   |                 |
| Max. switching current     | 7A   | 5A              |
| Max. switching power       | 210W / 1750VA  | 150W / 1250VA   |
| Mechanical endurance       | 2 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 500VAC)      |                     |
| Dielectric strength                       | Between coil & contacts | 1500VAC 1min        |
|   | Between open contacts   | 1000VAC 1min        |
|   | Between contact sets    | 1500VAC 1min        |
| Operate time (at nomi. volt.)             | 25ms max.               |                     |
| Release time (at nomi. volt.)             | 25ms max.               |                     |
| Temperature rise (no-load, at nomi.volt.) | 60K max.                |                     |
| Shock resistance                          | Functional              | 98m/s <sup>2</sup>  |
|   | Destructive             | 980m/s <sup>2</sup> |
| Vibration resistance                      | 10Hz to 55Hz 1mm DA     |                     |
| Humidity                                  | 95% RH, 40°C            |                     |
| Ambient temperature                       | -40°C to 70°C           |                     |
| Termination                               | PCB, Plug-in            |                     |
| Unit weight                               | Approx. 37g             |                     |
| Construction                              | Dust protected          |                     |

Notes: The data shown above are initial values.

### COIL

|            |   |
|------------|---|
| Coil power | DC type: 0.9 to 1.1W; AC type: 1.2 to 1.8VA |
|------------|---|

### COIL DATA

at 23°C

| Nominal Voltage VDC | Pick-up Voltage VDC | Drop-out Voltage VDC | Max. Allowable Voltage VDC | Coil Resistance Ω |
|---------------------|---------------------|----------------------|----------------------------|-------------------|
| 5                   | 4.0                 | 0.50                 | 5.5                        | 27.5 x (1±10%)    |
| 6                   | 4.8                 | 0.60                 | 6.6                        | 40 x (1±10%)      |
| 12                  | 9.6                 | 1.20                 | 13.2                       | 160 x (1±10%)     |
| 24                  | 19.2                | 2.40                 | 26.4                       | 650 x (1±10%)     |
| 48                  | 38.4                | 4.80                 | 52.8                       | 2600 x (1±15%)    |
| 110                 | 88.0                | 11.0                 | 121                        | 11000 x (1±15%)   |

| Nominal Voltage VAC | Pick-up Voltage VAC | Drop-out Voltage VAC | Max. Allowable Voltage VAC | Coil Resistance Ω |
|---------------------|---------------------|----------------------|----------------------------|-------------------|
| 6                   | 4.80                | 1.80                 | 6.6                        | 11.5 x (1±10%)    |
| 12                  | 9.60                | 3.60                 | 13.2                       | 46 x (1±10%)      |
| 24                  | 19.2                | 7.20                 | 26.4                       | 184 x (1±10%)     |
| 48                  | 38.4                | 14.4                 | 52.8                       | 735 x (1±10%)     |
| 120                 | 96.0                | 36.0                 | 132                        | 4550 x (1±15%)    |
| 220/240             | 176.0               | 66.0                 | 264                        | 14400 x (1±15%)   |

### SAFETY APPROVAL RATINGS

|        |                         |
|--------|-------------------------|
| UL&CUL | 2C: 7A 250VAC/30VDC     |
|        | 4C: 5A 250VAC/30VDC     |
| TÜV    | 2C, 3C: 7A 250VAC/30VDC |
|        | 4C: 5A 250VAC/30VDC     |

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

2008 Rev. 1.00

## ORDERING INFORMATION

|   |   |  |   |     |     |   |   |   |       |
|---|---|--|---|-----|-----|---|---|---|-------|
| Type  | HF18FH /                                      |  | A | 012 | -2Z | 1 | G | D | (XXX) |
| Coil voltage form                             | A: AC Nil: DC                                 |  |   |     |     |   |   |   |       |
| Coil voltage                                  | DC: 5 to 110VDC AC: 6 to 240VAC               |  |   |     |     |   |   |   |       |
| Contact arrangement                           | 2Z: 2 Form C 3Z: 3 Form C 4Z: 4 Form C        |  |   |     |     |   |   |   |       |
| Mounting Termination<br>( See the Following ) | 1: Socket 2: PCB                              |  |   |     |     |   |   |   |       |
| Contact material                              | G: Silver alloy + Au plated Nil: Silver alloy |  |   |     |     |   |   |   |       |
| LED   | D: With LED Nil: Without LED                  |  |   |     |     |   |   |   |       |
| Customer special code                         |   |  |   |     |     |   |   |   |       |

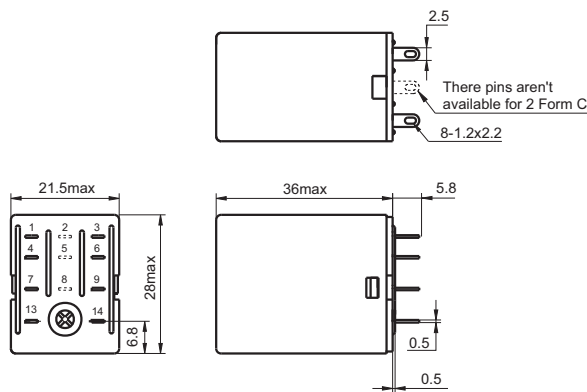
Notes: We also can supply the special type with terminals numbered 1,4,5,8,9,12,13,14 for 2 poles.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

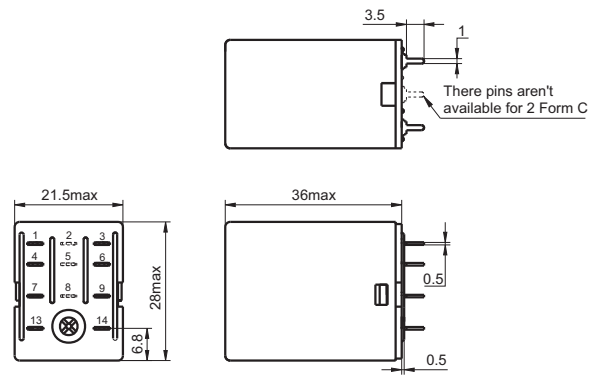
Unit: mm

### Outline Dimensions

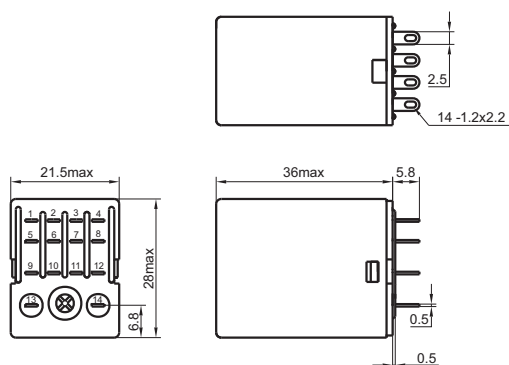
HF18FH/□□□□-2Z1□□/3Z1□□



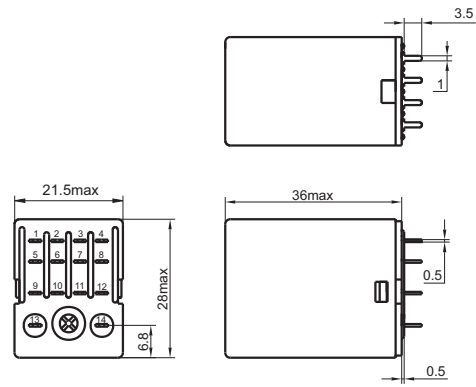
HF18FH/□□□□-2Z2□□/3Z2□□



HF18FH/□□□□-4Z1□□



HF18FH/□□□□-4Z2□□

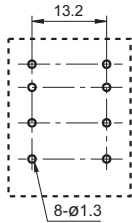


# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

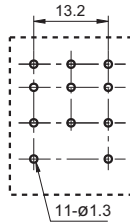
Unit: mm

## PCB Layout (Bottom view)

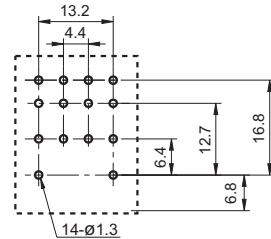
2 From C



3 From C

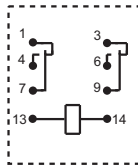


4 From C

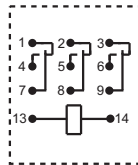


## Wiring Diagram (Bottom view)

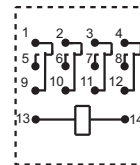
2 From C



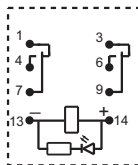
3 From C



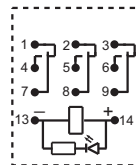
4 From C



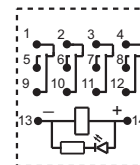
2 From C (With LED)



3 From C (With LED)

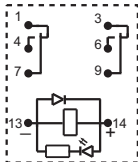


4 From C (With LED)

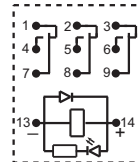


Remark: For AC parts with diode, the positive and negative pole markings on wiring diagram are not applicable.

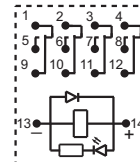
2 From C  
(DC, With fly-wheel diode)



3 From C  
(DC, With fly-wheel diode)



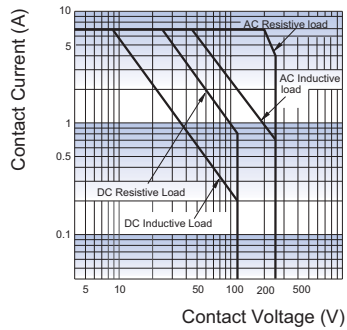
4 From C  
(DC, With fly-wheel diode)



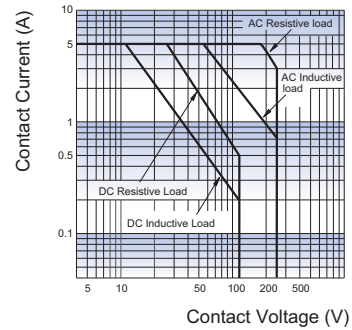
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be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

## CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER  
(2, 3 Form C)



MAXIMUM SWITCHING POWER  
(4 Form C)



### 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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