

HF13F

MINIATURE INTERMEDIATE POWER RELAY



File No.:E133481



File No.:R50154518



File No.:CQC09002030028 (DC type)
CQC09002030029 (AC type)



Features

- 1C: 15A; 2C:10A switching capability
- Various terminals available
- Sockets available
- Conform to the CE low voltage directive
- 1 & 2 pole configurations
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (28.0 x 21.5 x 35.0)mm

CONTACT DATA

| | | |
|----------------------------|---|---------------------|
| Contact arrangement | 1A,1C | 2A,2C |
| Contact resistance | 100mΩ max.(at 1A 6VDC) | |
| Contact material | See ordering info. | |
| Contact rating (Res. load) | 15A 250VAC/30VDC | 10A 250VAC/30VDC |
| Max. switching voltage | 250VAC / 30VDC | |
| Max. switching current | 15A | 10A |
| Max. switching power | 3750VA/450W | 2500VA/300W |
| Mechanical endurance | 1 x 10 ⁷ OPS | |
| Electrical endurance | 1Z type: 1 x 10 ⁵ OPS (15A 250VAC, Resistive load, Room temp., 1s on 9s off) | |
| | 1Z type: 1 x 10 ⁵ OPS (15A 30VDC, Resistive load, Room temp., 1s on 9s off) | |
| | 2Z type: 1 x 10 ⁵ OPS (10A 250VAC, Resistive load, Room temp., 1s on 9s off) | |
| | 2Z type: 1 x 10 ⁵ OPS (10A 30VDC, Resistive load, Room temp., 1s on 9s off) | |

CHARACTERISTICS

| | | |
|---|-------------------------|---------------------|
| Insulation resistance | | 500MΩ (at 500VDC) |
| 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 ² |
| | Destructive | 980m/s ² |
| Vibration resistance | | 10Hz to 55Hz 1mm DA |
| Humidity | | 5% to 85% RH |
| 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: Approx. 0.9W to 1.1W AC type: Approx. 1.2VA to 1.8VA |
|------------|--|

COIL DATA

at 23°C

| Nominal Voltage VDC | Pick-up Voltage VDC max. ¹⁾ | Drop-out Voltage VDC min. | Max. Voltage VDC ²⁾ | Coil Resistance Ω |
|---------------------|--|---------------------------|--------------------------------|-------------------|
| 5 | 4.0 | 0.5 | 5.5 | 27.5 x (1±10%) |
| 6 | 4.8 | 0.6 | 6.6 | 40 x (1±10%) |
| 12 | 9.6 | 1.2 | 13.2 | 160 x (1±10%) |
| 24 | 19.2 | 2.4 | 26.4 | 650 x (1±10%) |
| 48 | 38.4 | 4.8 | 52.8 | 2600 x (1±10%) |
| 110 | 88.0 | 11.0 | 121 | 11000 x (1±10%) |
| 125 | 100 | 12.5 | 137.5 | 14000 x (1±10%) |
| 220 | 176 | 22.0 | 242 | 53750 x (1±10%) |

| Nominal Voltage VAC | Pick-up Voltage VAC max. ¹⁾ | Drop-out Voltage VAC min. | Max. Voltage VAC ²⁾ | Coil Resistance Ω |
|---------------------|--|---------------------------|--------------------------------|-------------------|
| 6 | 4.80 | 1.8 | 6.6 | 11.5 x (1±10%) |
| 12 | 9.60 | 3.6 | 13.2 | 46 x (1±10%) |
| 24 | 19.2 | 7.2 | 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±10%) |
| 220/240 | 176.0 | 72.0 | 264 | 14400 x (1±10%) |

Notes: 1) Under ambient temperature, applying more than 80% of rating voltage to coil, relay will take action accordingly. But in order to meet the stated product performance, please apply rated voltage to coil.

2) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.

SAFETY APPROVAL RATINGS

| | | | |
|--------|---------------|----------|--|
| UL/CUL | AgCdO | 1 Form C | 15A 250VAC/30VDC |
| | AgCe | 1 Form C | 15A 250VAC/30VDC |
| | | 2 Form C | 10A 250VAC/30VDC 1/3 HP 240VAC/120VAC |
| TÜV | AgCdO AgCe | 2 Form C | 10A 250VAC/30VDC |

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

2016 Rev. 1.10

ORDERING INFORMATION

| | |
|----------------------------|--|
| Type | HF13F / A 012 -2Z 1 1 D (XXX) |
| Coil voltage form | A: AC Nil: DC |
| Coil voltage | DC: 5VDC to 220VDC AC: 6VAC to 240VAC |
| Contact arrangement | 1H: 1 Form A 2H: 2 Form A 1Z: 1 Form C 2Z: 2 Form C |
| Mounting termination | 1: Socket 2: PCB 5: Flange-Mounting |
| Contact material | 1: AgCe Nil: AgCdO |
| LED | D: With LED Nil: Without LED |
| Special code ²⁾ | XXX: Customer special requirement Nil: Standard |

Notes: 1) We also can supply the special type with terminals numbered 1,2,3,4,5,6,7,8.

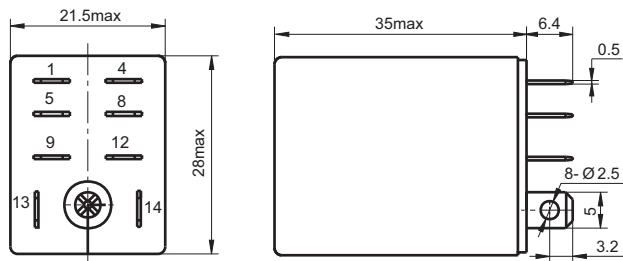
2) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

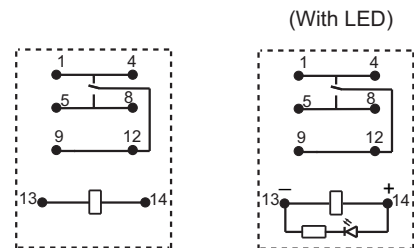
Unit: mm

HF13F/□□□□-1Z1□

Outline Dimensions



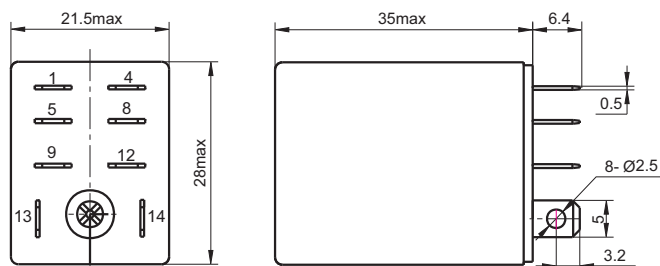
Wiring Diagram
(Bottom view)



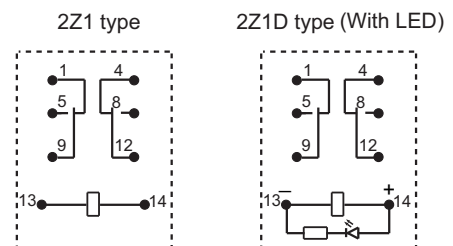
Remark: For AC parts with diode, the positive and negative pole markings on wiring diagram are not applicable.

HF13F/□□□□-2Z1□

Outline Dimensions



Wiring Diagram
(Bottom view)



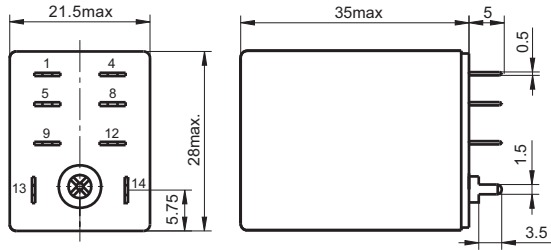
Remark: For AC parts with diode, the positive and negative pole markings on wiring diagram are not applicable.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

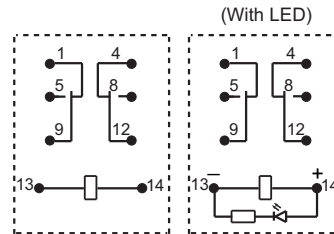
Unit: mm

HF13F/□□□□-2Z2□

Outline Dimensions

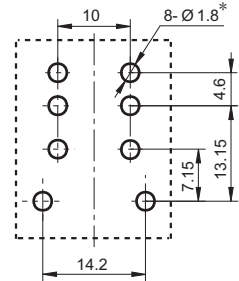


Wiring Diagram
(Bottom view)



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

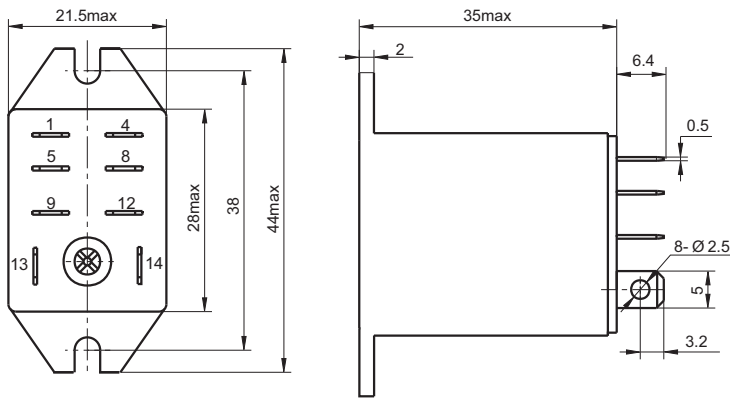
PCB Layout
(Bottom view)



*: Please adjust the site of this diameter according to the actual application.

HF13F/□□□□-2Z5□

Outline Dimensions



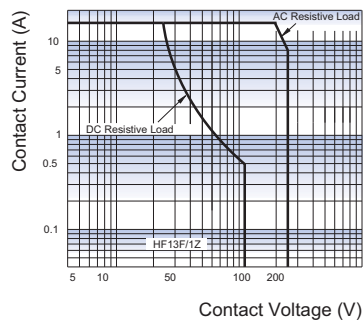
Mounting holes



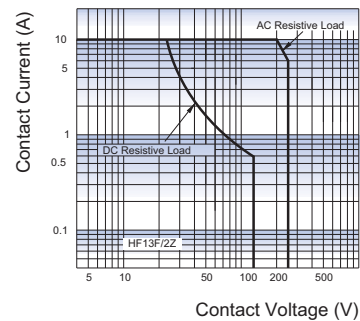
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$; outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 5\text{mm}$, tolerance should be $\pm 0.4\text{mm}$.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

CHARACTERISTIC CURVES

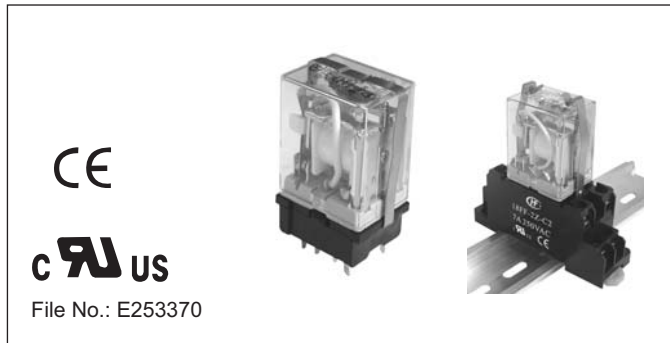
MAXIMUM SWITCHING POWER(1C)



MAXIMUM SWITCHING POWER(2C)



Relay Sockets



Features


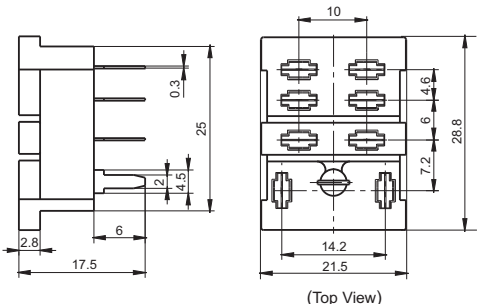
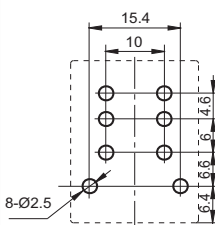

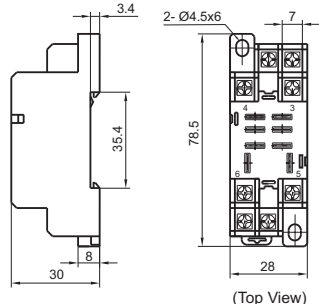
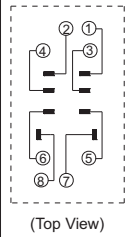
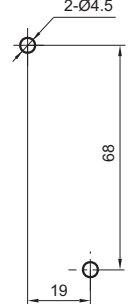

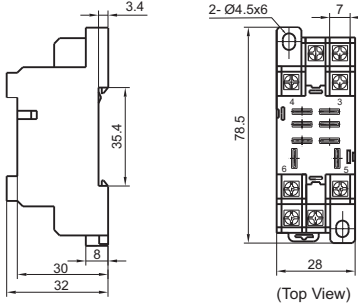
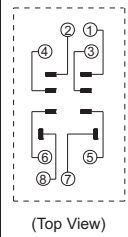
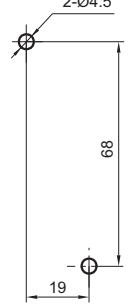
- The dielectric strength can reach 2000VAC and the insulation resistance is 1000 MΩ
- Three mounting types are available: PCB mounting, screw mounting and DIN rail mounting.
- With finger protection device
- Components available: metallic retainer
- Environmental friendly product (RoHS compliant)

CHARACTERISTICS

| Type | Nominal Voltage | Nominal Current | Ambient Temperature | Dielectric Strength min. | Screw Torque | Wire Strip Length |
|-----------|-----------------|-----------------|---------------------|--------------------------|--------------|-------------------|
| 13F-2Z-A2 | 250VAC | 10A | -40 °C to 70°C | 2000VAC | — | — |
| 13F-2Z-C1 | 250VAC | 10A | -40 °C to 70°C | 2000VAC | 1.0N · m | 7mm |
| 13F-2Z-C2 | 250VAC | 10A | -40 °C to 70°C | 2000VAC | 1.0N · m | 7mm |

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

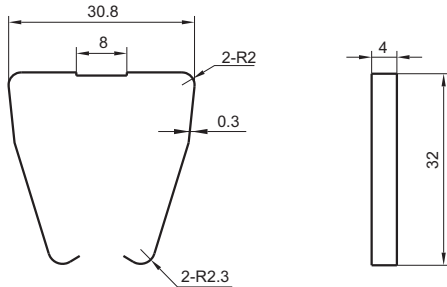
| Socket | Outline Dimensions | Wiring Diagram | PCB Layout | Components Available |
|---|---|--|---|---|
| 13F-2Z-A2  PCB terminal, PCB mounting |  (Top View) | |  | metallic retainer 18FF-H1 |
| 13F-2Z-C1  Screw terminal, DIN rail or Screw mounting, Without finger protection device |  (Top View) |  (Top View) |  | metallic retainer 18FF-H2 (be used in sets) |
| 13F-2Z-C2  Screw terminal, DIN rail or Screw mounting, With finger protection device |  (Top View) |  (Top View) |  | metallic retainer 18FF-H2 (be used in sets) |

DIMENSION OF RELATED COMPONENT (AVAILABLE)

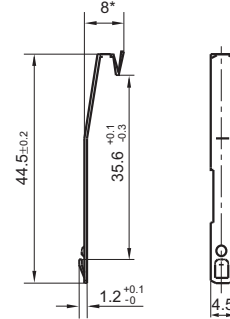
Unit: mm

Retainer

18FF-H1 (Metallic retainer)



18FF-H2 (Metallic retainer)



Note: 18FF-H2 retainer has to be used in sets, please pay special attention while placing the order.

Things to be noticed when selecting sockets:

1. Please choose suitable relay socket according to the actual mounting environment, relay contact poles and terminal layout. If there is any query on selection, please contact Hongfa for the technical service.
2. As for other related components, they should be selected separately. Please do give clear indication of the types of relay sockets and related components you choose while placing order.
3. The above is only an example of typical socket and related component type which is suitable to HF13F relay. If you have any special requirements, please contact us.
4. Main outline dimension(L, W, H) ≥ 50 mm, tolerance should be ± 1 mm; outline dimension > 20 mm and < 50 mm, tolerance should be ± 0.5 mm; outline dimension ≤ 20 mm, tolerance should be ± 0.3 mm.

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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