

# HF14FF

## MINIATURE HIGH POWER RELAY



File No.:E134517



File No.:R50140759



File No.:CQC10002046169



### Features

- 10A switching capability
- 5kV dielectric strength  
(between coil and contacts)
- Sockets available
- Plastic sealed and flux proofed types available
- UL insulation system: Class F available

**RoHS compliant**

### CONTACT DATA

Contact arrangement	1A, 1C
Contact resistance <sup>1)</sup>	50mΩ max.(at 1A 24VDC)
Contact material	AgSnO <sub>2</sub> , AgNi
Contact rating	Resistive: 10A 277VAC/30VDC TV-5 120VAC
Max. switching voltage	277VAC / 30VDC
Max. switching current	10A
Max. switching power	2770VA / 300W
Mechanical endurance	5 × 10 <sup>6</sup> OPS
Electrical endurance	1 × 10 <sup>5</sup> OPS (10A 277VAC, Resistive load, Room temp., 1s on 9s off) 1 × 10 <sup>5</sup> OPS (10A 30VDC, Resistive load, Room temp., 1s on 9s off)

**Notes:** 1) The data shown above are initial values.

2) For plastic sealed type, the venting-hole should be excised in electrical endurance test.

### COIL

Coil power	Approx. 530mW
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### COIL DATA

at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC, max. <sup>2)</sup>	Drop-out Voltage VDC, min. <sup>2)</sup>	Max. Voltage VDC <sup>3)</sup>	Coil Resistance Ω
3	2.25	0.3	4.2	17 x (1±10%)
5	3.75	0.5	7.0	47 x (1±10%)
6	4.50	0.6	8.4	68 x (1±10%)
9	6.75	0.9	12.6	160 x (1±10%)
12	9.00	1.2	16.8	275 x (1±10%)
18	13.5	1.8	25.2	620 x (1±10%)
24	18.0	2.4	33.6	1100 x (1±10%)
48	36.0	4.8	67.2	4170 x (1±10%)
60	45.0	6.0	84.0	7000 x (1±10%)

**Notes:** 1) When requiring pick-up voltage < 75% of nominal voltage, special order allowed.

2) The data shown above are initial values.

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

4) 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.

### CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts 5000VAC 1min
	Between open contacts 1000VAC 1min
Operate time (at nomi. volt.)	15ms max.
Release time (at nomi. volt.)	5ms max.
Vibration resistance	10Hz to 55Hz 1.5mm DA
Shock resistance	Functional 98m/s <sup>2</sup>
	Destructive 980m/s <sup>2</sup>
Humidity	5% to 85% RH
Ambient temperature	-40°C to 70°C
Termination	PCB
Unit weight	Approx. 18g
Construction	Plastic sealed, Flux proofed

**Notes:** 1) The data shown above are initial values.

2) Please find coil temperature curve in the characteristic curves below.

3) UL insulation system: Class F, Class B.

### SAFETY APPROVAL RATINGS

UL/CUL	AgSnO <sub>2</sub> AgNi	10A 277VAC General purpose 10A 30VDC Resistive 1/3HP 250VAC 1/4HP 125VAC TV-5 120VAC
TÜV	AgSnO <sub>2</sub>	10A 250VAC 10A 30VDC
CQC	AgSnO <sub>2</sub> AgNi	10A 250VAC 10A 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, IATF16949, ISO14001, ISO45001, IECQ QC 080000, ISO/IEC 27001 CERTIFIED

2025 Rev. 1.00

## ORDERING INFORMATION

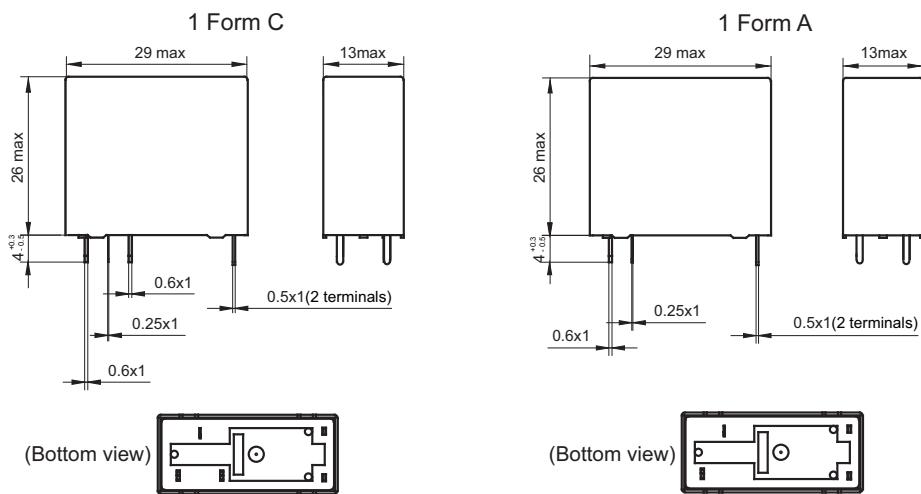
	HF14FF /	012	-1H	S	T	F	(XXX)
Type							
Coil voltage	3, 5, 6, 9, 12, 18, 24, 48, 60VDC						
Contact arrangement	1H: 1 Form A    1Z: 1 Form C						
Construction <sup>1)</sup>	S: Plastic sealed(No smoky-gray cover) Nil: Flux proofed						
Contact material	T: AgSnO <sub>2</sub> 3: AgNi						
Insulation standard	F: Class F    Nil: Class B						
Special code <sup>4)</sup>	XXX: Customer special requirement    Nil: Standard						

- Notes:**
- 1) We recommend flux proofed types for a clean environment (free from contaminations like H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, dust, etc.). We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, dust, etc.).
  - 2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
  - 3) The standard type is made of black cover. If smoke cover is required, please add a special suffix (611) when ordering. Please take note that smoke cover is only available for flux proofed type.
  - 4) The customer special requirement express as special code after evaluating by Hongfa.
  - 5) For products that should meet the explosion-proof requirements of "IEC 60079 series", please note [Ex] after the specification while placing orders. Not all products have explosion-proof certification, so please contact us if necessary, in order to select the suitable products.

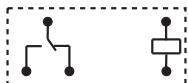
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Outline Dimensions



Wiring Diagram  
(Bottom view)



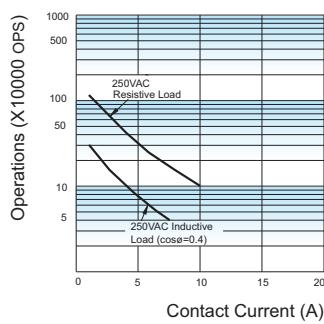
PCB Layout  
(Bottom view)



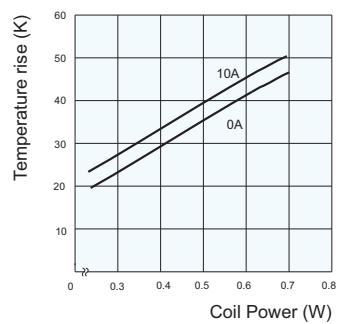
- Remark:**
- 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be  $\pm 0.4\text{mm}$ .
  - 2) The tolerance without indicating for PCB layout and pin size is always  $\pm 0.1\text{mm}$ .
  - 3) The width of the gridding is 2.5mm.

## CHARACTERISTIC CURVES

ENDURANCE CURVE



COIL TEMPERATURE RISE



**Test conditions:**

NO, Resistive load,  
Flux proofed, 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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