

# HF7FF

# SUBMINIATURE INTERMEDIATE POWER RELAY



File No.:E134517



File No.:CQC09002028260



## Features

- 10A switching capability
- 1 Form A and 1 Form C configurations
- Plastic sealed and flux proofed types available

## CONTACT DATA

Contact arrangement	1A, 1C
Contact resistance <sup>1)</sup>	100mΩ max.(at 1A 6VDC)
Contact material	AgSnO <sub>2</sub> , AgCe
Contact rating (Res. load)	5A 250VAC/30VDC 10A 250VAC/28VDC
Max. switching voltage	250VAC / 30VDC
Max. switching current	10A
Max. switching power	2400VA / 280W
Mechanical endurance	1 x 10 <sup>7</sup> OPS
Electrical endurance	1HT, 1ZT type: 1 x 10 <sup>4</sup> OPS (10A 250VAC, Resistive load, Room temp., 1s on 9s off) 1H, 1Z type: 1 x 10 <sup>4</sup> OPS (5A 250VAC, Resistive load, Room temp., 1s on 9s off)

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

## CHARACTERISTICS

Insulation resistance	100MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	1500VAC 1min
	Between open contacts	750VAC 1min
Operate time (at rated. volt.)	10ms max.	
Release time (at rated. volt.)	5ms max.	
Shock resistance	Functional	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance	10Hz to 55Hz 1.5mm DA	
Humidity	5% to 85% RH	
Ambient temperature	-40°C to 70°C	
Termination	PCB	
Unit weight	Approx. 9.5g	
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, Class A.

## COIL

Coil power	5VDC to 24VDC: Approx. 360mW 48VDC: Approx. 510mW
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## COIL DATA

at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max. <sup>1)</sup>	Drop-out Voltage VDC min. <sup>1)</sup>	Max. Voltage VDC *2)	Coil Resistance Ω
3	2.40	0.3	3.6	25 x (1±10%)
5	4.00	0.5	6.0	70 x (1±10%)
6	4.80	0.6	7.2	100 x (1±10%)
9	7.20	0.9	10.8	225 x (1±10%)
12	9.60	1.2	14.4	400 x (1±10%)
18	14.4	1.8	21.6	900 x (1±10%)
24	19.2	2.4	28.8	1600 x (1±10%)
48	38.4	4.8	57.6	4500 x (1±10%)

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

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

## SAFETY APPROVAL RATINGS

UL/CUL (AgCe)	1 Form C	NO: 10A 277VAC NO/NC: 5A 277VAC NO: 5A 30VDC NC: 2FLA 4LRA 120VAC
	1 Form A	10A 277VAC 6A 30VDC
UL/CUL (AgSnO <sub>2</sub> )	1 Form C	12A 277VAC 12A 28VDC
	1 Form A	12A 277VAC 12A 28VDC

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

2019 Rev. 1.00

## ORDERING INFORMATION

Type	HF7FF / 012 -1H T S F (XXX)					
Coil voltage	3, 5, 6, 9, 12, 18, 24, 48VDC					
Contact arrangement	1H: 1 Form A		1Z: 1 Form C			
Contact material	T: AgSnO <sub>2</sub> (10A)		Nil: AgCe (5A)			
Construction <sup>1)</sup>	S: Plastic sealed		Nil: Flux proofed			
Insulation standard	F: Class F		B: Class B		Nil: Class A	
Special code <sup>4)</sup>	XXX: Customer special requirement			Nil: Standard		

- Notes:** 1) Under the ambience with dangerous gas like H<sub>2</sub>S, SO<sub>2</sub> or NO<sub>2</sub>, plastic sealed type is recommended; Please test the relay in real applications.  
If the ambience allows, flux proofed type is preferentially recommended.
- 2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
- 3) If the application belongs to inductive load, AgSnO<sub>2</sub>In<sub>2</sub>O<sub>3</sub> contact material is recommended. Please add a special suffix (325) to stand for this special contact material in the ordering information.
- 4) The customer special requirement express as special code after evaluating by Hongfa.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

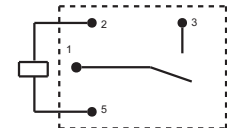
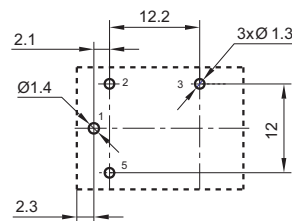
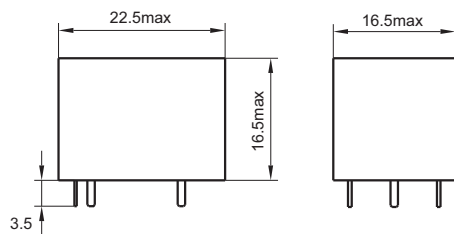
Unit: mm

### Outline Dimensions

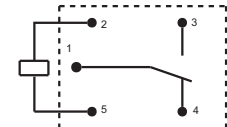
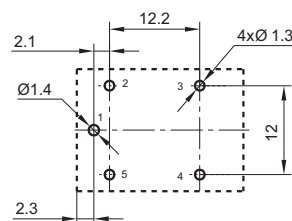
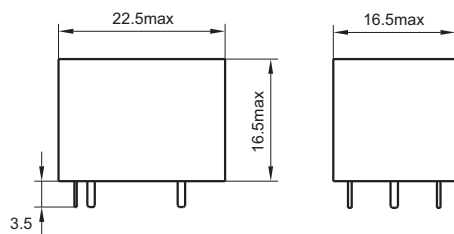
### PCB Layout (Bottom view)

### Wiring Diagram (Bottom view)

#### 1 Form A



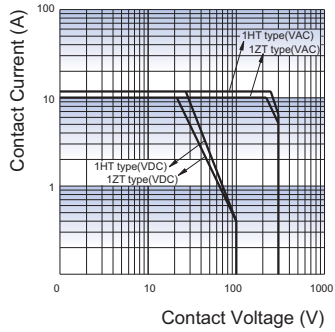
#### 1 Form C



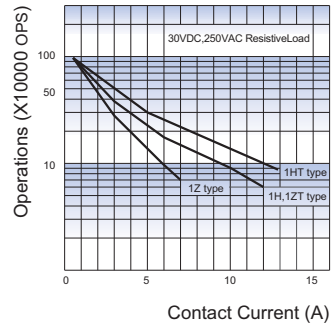
- Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1$ mm, tolerance should be  $\pm 0.2$ mm; outline dimension  $> 1$ mm and  $\leq 5$ mm, tolerance should be  $\pm 0.3$ mm; outline dimension  $> 5$ mm, tolerance should be  $\pm 0.4$ mm.
- 2) The tolerance without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

## CHARACTERISTIC CURVES

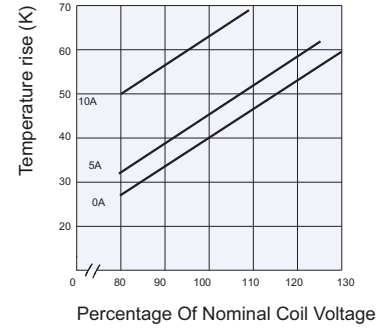
MAXIMUM SWITCHING POWER



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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