

**HF2110/HF2120****MINIATURE HIGH POWER RELAY****cRU**

File No.:E134517



File No.:CQC02001001955

**Features**

- 30A switching capability
- PCB coil terminals, ideal for heavy duty load
- 2.5kV dielectric strength (between coil and contacts)
- Unenclosed type available
- Class F insulation available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (30.5 x 24.6 x 15.7) mm

**CONTACT DATA**

Contact arrangement	1A	1B	1C(NO)	1C(NC)
Contact resistance	50mΩ (at 1A 6VDC)			
Contact material	AgCdO			
Contact rating (Res. load)	30A 240VAC	15A 240VAC	20A 240VAC	10A 240VAC
	20A 30VDC	10A 30VDC	20A 30VDC	10A 30VDC
Max. switching capacity	7200VA	3600VA	4800VA	2400VA
	600W	300W	600W	300W
Max. switching voltage	277VAC / 30VDC			
Max. switching current	40A	15A	20A	10A
Mechanical endurance	1 x 10 <sup>7</sup> OPS			
Electrical endurance	1 x 10 <sup>5</sup> OPS			

**CHARACTERISTICS**

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	2500VAC 1min
	Between open contacts	1500VAC 1min
Operate time (at nomi. volt.)	15ms max.	
Release time (at nomi. volt.)	10ms max.	
Ambient temperature	Class B	-55°C to 100°C
	Class F	-55°C to 125°C
Shock resistance	Functional	100m/s <sup>2</sup> (10g)
	Destructive	1000m/s <sup>2</sup> (100g)
Vibration resistance	10Hz to 55Hz 1mm DA	
Humidity	95% RH, 40°C	
Termination	HF2110/2111: PCB HF2120/2121: PCB & QC	
Unit weight	Approx. 35g	
Construction	Unenclosed	

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

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

**COIL**

Coil power	900mW
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**COIL DATA**

at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance Ω
5	3.75	0.5	6.5	27 x (1±10%)
6	4.50	0.6	7.8	40 x (1±10%)
9	6.75	0.9	11.7	97 x (1±10%)
12	9.00	1.2	15.6	155 x (1±10%)
15	11.25	1.5	19.5	256 x (1±10%)
18	13.50	1.8	23.4	380 x (1±10%)
24	18.00	2.4	31.2	660 x (1±10%)
48	36.00	4.8	62.4	2560 x (1±10%)
70	52.50	7.0	91.0	5500 x (1±10%)
110	82.50	11.0	143.0	13450 x (1±10%)



HONGFA RELAY

ISO9001、ISO/TS16949、ISO14001、OHSAS18001 CERTIFIED

2007 Rev. 2.00

## SAFETY APPROVAL RATINGS

### UL&CUR

Load type	Volts	1 Form A	1 Form B	1 Form C (NO)	1 Form C (NO)
General purpose	125/240VAC	30A	15A	--	15A
	277VAC	30A	30A	30A	30A
Resistive	125/240VAC	30A	15A	--	--
	30VDC	20A	10A	20A	10A
	277VAC	20A	--	--	--
	240VAC	15A	--	--	--
Ballast	125/240/277VAC	6A	3A	6A	3A
Pilot duty	125VAC	800VA	290VA	800VA	290VA
	125VAC	690VA	--	690VA	--
	125VAC	800VA	--	800VA	--
	240VAC	1152VA	768VA	1152VA	768VA
	277VAC	764VA	--	764VA	--
Motor load	125VAC	1HP	1/4HP	1HP	1/4HP
	240VAC	2HP	1HP	2HP	1HP
	125VAC	1HP	--	1HP	--
	125/277VAC	3/4HP	--	3/4HP	--
Definite purpose (LRA-loaded rotor) (FLA-full load)	120VAC	82.8LRA, 13.8FLA	--	82.8LRA, 13.8FLA	--
	125VAC	96LRA, 30FLA	33LRA, 10FLA	60LRA, 20FLA	33LRA, 10FLA
	125VAC	60LRA, 20FLA	30LRA, 12FLA	60LRA, 20FLA	30LRA, 12FLA
	125VAC	82.8LRA, 27FLA	--	82.8LRA, 27FLA	--
	240VAC	80LRA, 30FLA	33LRA, 10FLA	80LRA, 20FLA	33LRA, 10FLA
	240VAC	41.4LRA, 6.9FLA	--	41.48LRA, 6.9FLA	--
Tungsten	277VAC	60LRA, 20FLA	--	60LRA, 20FLA	--
	125VAC	15A	--	15A	--
	240VAC	5A	--	5A	3A
	120VAC	--	3A	--	--
	240VAC	--	3A	--	--

**Notes:** Only some typical ratings are listed above. If more details are required, please contact us.

## ORDERING INFORMATION

<b>Type</b>	HF2110 HF2120	-1A	-12D	F	(XXX)
<b>Contact arrangement</b>	<b>1A:</b> 1 Form A <b>1B:</b> 1 Form B <b>1C:</b> 1 Form C				
<b>Coil voltage</b>	5, 6, 9, 12, 15, 18, 24, 48, 70, 110VDC				
<b>Insulation standard</b>	<b>F:</b> Class F <b>Nil:</b> Class B				
<b>Customer special code</b> <sup>1)</sup> (Only for special requirements)	e.g. (551) stands for RoHS compliant (Cadmium containing contacts) (555) stands for RoHS compliant (Cadmium-free contacts)				

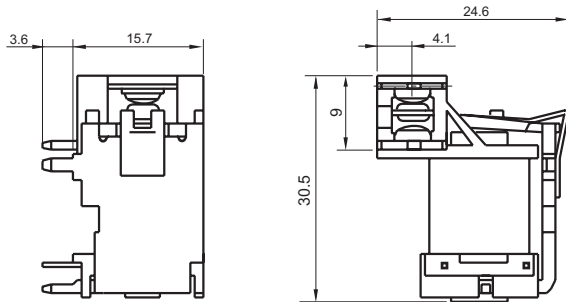
**Notes:** 1) HF2110/HF2120 is an environmental friendly product. Please mark a special code (555) or (551) when ordering. (551) stands RoHS compliant with Cadmium contact; (555) stands for RoHS compliant with Cadmium-free contact.

**OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT**

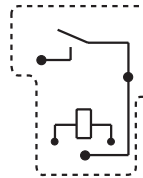
Unit: mm

**1 Form A**

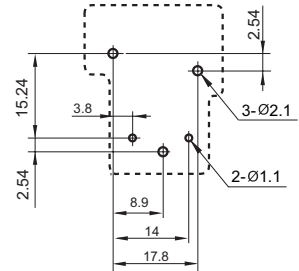
**HF2111** Outline Dimensions



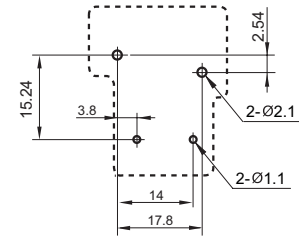
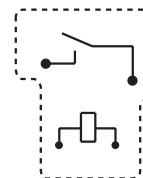
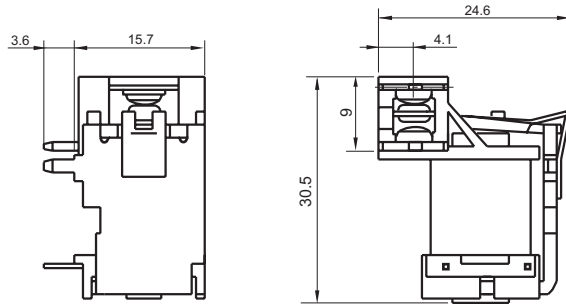
**Wiring Diagram**  
(Bottom view)



**PCB Layout**  
(Bottom view)

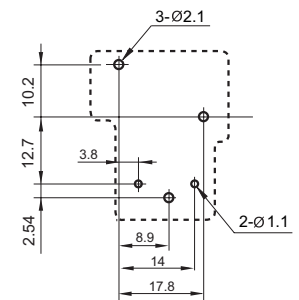
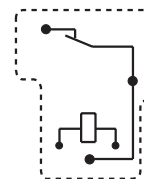
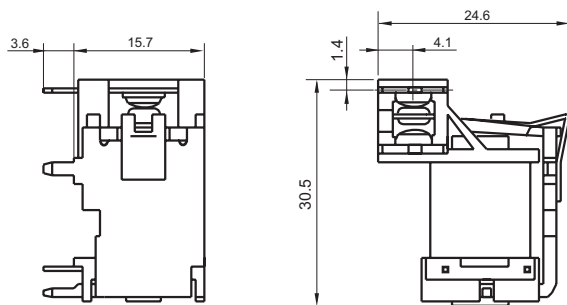


**HF2110**

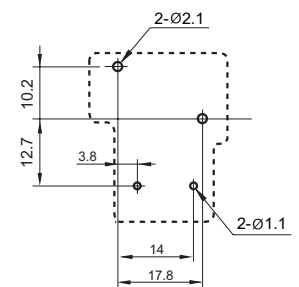
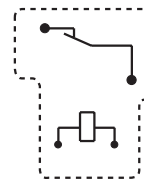
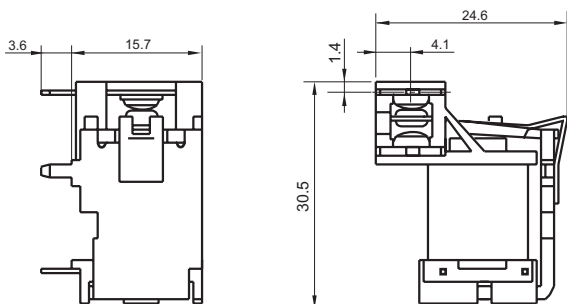


**1 Form B**

**HF2111**



**HF2110**



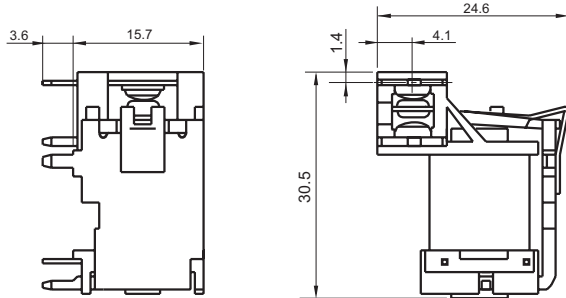
**OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT**

Unit: mm

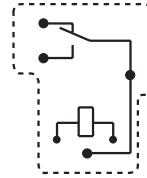
**1 Form C**

**Outline Dimensions**

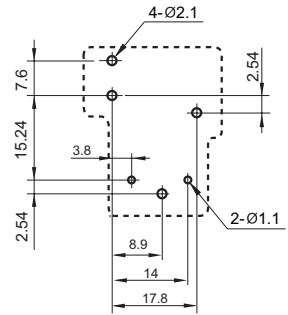
HF2111



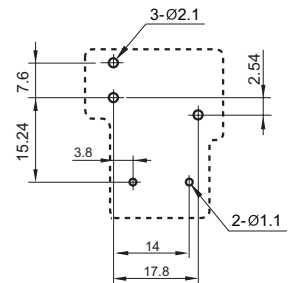
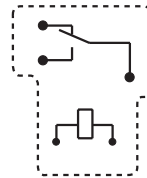
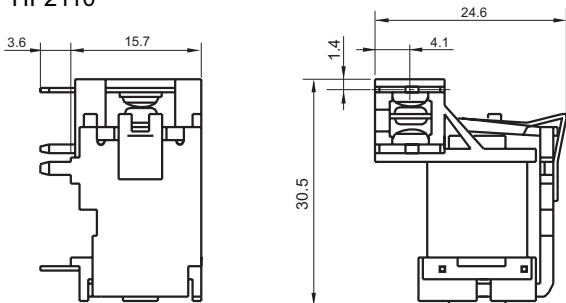
**Wiring Diagram  
(Bottom view)**



**PCB Layout  
(Bottom view)**

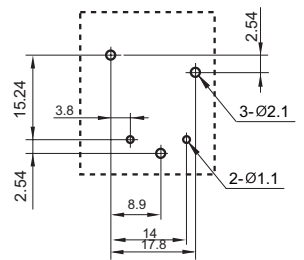
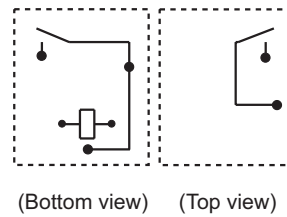
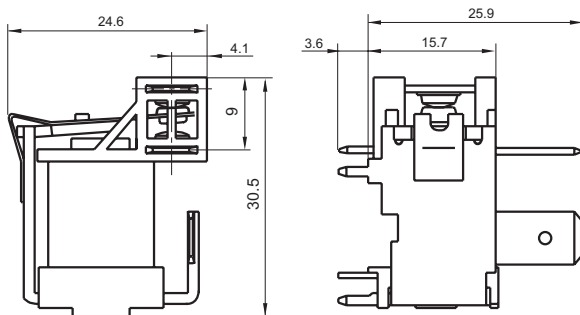


HF2110

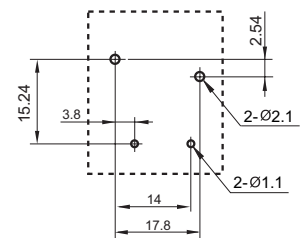
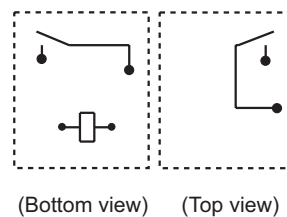
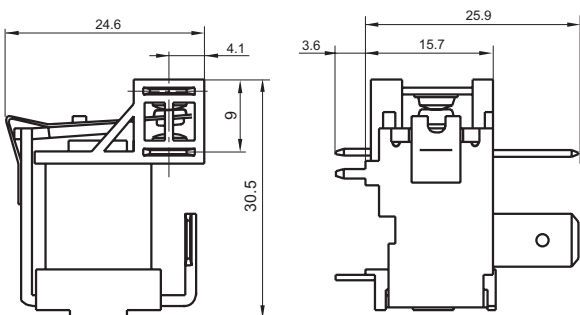


**1 Form A**

HF2121



HF2120



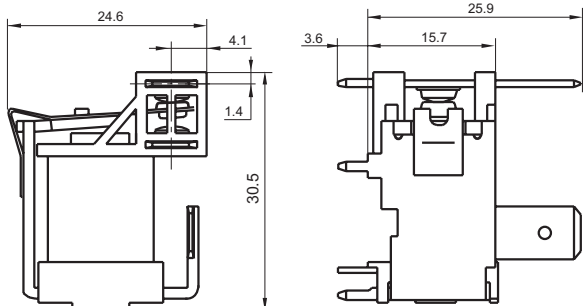
**OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT**

Unit: mm

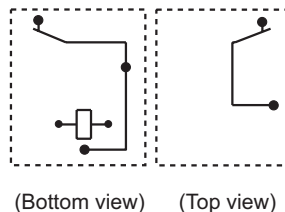
**1 Form B**

**Outline Dimensions**

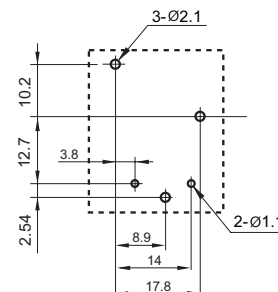
HF2121



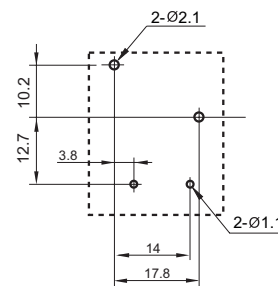
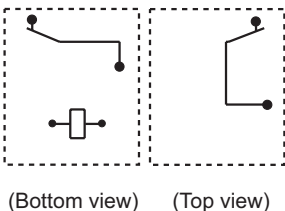
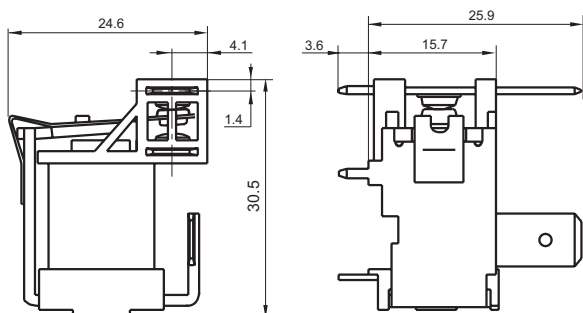
**Wiring Diagram  
(Bottom view)**



**PCB Layout  
(Bottom view)**

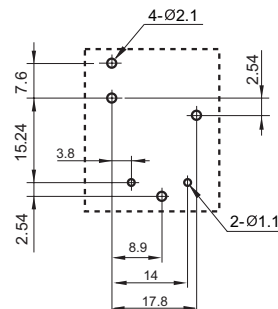
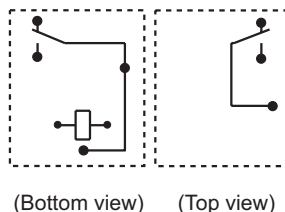
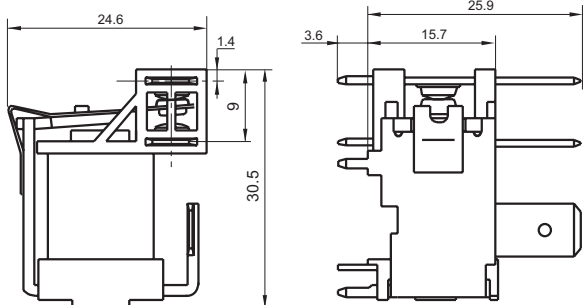


HF2120

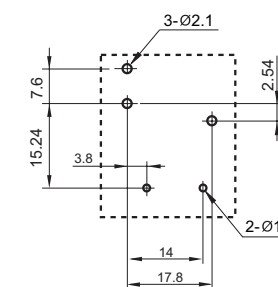
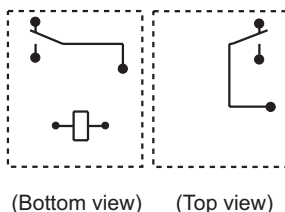
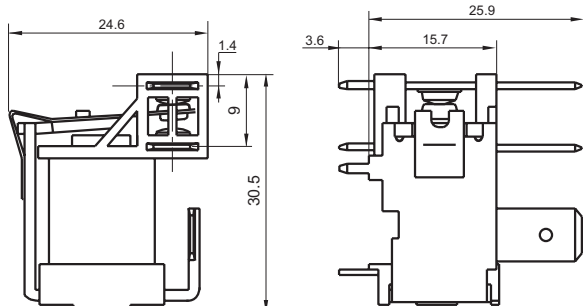


**1 Form C**

HF2121



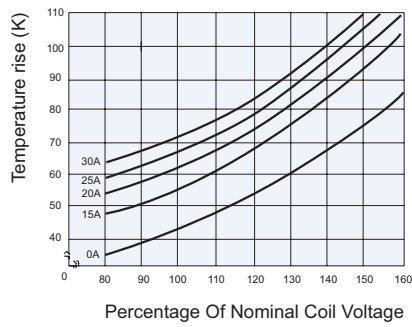
HF2120



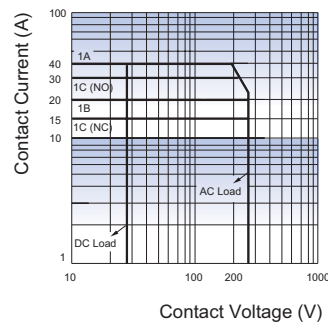
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be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

## CHARACTERISTIC CURVES

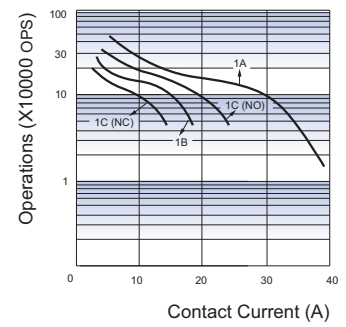
COIL TEMPERATURE RISE



MAXIMUM SWITCHING POWER



ENDURANCE CURVE



### 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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