

# HF13F (JQX-13F)

## MINIATURE INTERMEDIATE POWER RELAY



File No.:E133481



File No.:R50065101



File No.:CQC02001001941



### Features

- 15A switching capability
- 1.5kV dielectric strength (between coil and contacts)
- 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	1C	2C
Contact resistance	100mΩ (at 1A 6VDC)	
Contact material	Silver alloy	
Contact rating (Res. load)	1C: 15A 250VAC/30VDC 2C: 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 <sup>7</sup> OPS	
Electrical endurance	1 x 10 <sup>5</sup> OPS (See approval reports for more details)	

### COIL

Coil power DC type: 0.9 to1.1W; 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	0.5	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±15%)
110	88.0	11.0	121	11000 x (1±15%)

### 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	100m/s <sup>2</sup> (10g)
	Destructive	1000m/s <sup>2</sup> (100g)
Vibration resistance		10Hz to 55Hz 1mm DA
Humidity		98% 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.

Nominal Voltage VAC	Pick-up Voltage VAC	Drop-out Voltage VAC	Max. Allowable Voltage VAC	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±15%)
220/240	176.0	72.0	264	14400 x (1±15%)

### SAFETY APPROVAL RATINGS

UL&CUR	1 Form C	15A 250VAC/30VDC
	2 Form C	10A 250VAC/30VDC 1/3 HP 240VAC/120VAC
TÜV	2C: 10A 250VAC/30VDC	

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

## ORDERING INFORMATION

	HF13F	/	A	012	-2Z	1	D	(XXX)
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<b>Type</b> <sup>1)</sup>	HF13F JQX-13F (Old type)
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**Coil voltage form**      **A:** AC    **Nil:** DC

**Coil voltage**                      **DC:** 5 to 110VDC    **AC:** 6 to 240VAC

<b>Contact arrangement</b>	<b>1Z:</b> 1 Form C	<b>2Z:</b> 2 Form C
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Mounting termination (See the following)	1: Socket	2: PCB	5: Flange-Mounting
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**LED**

D: With LED Nil: Without LED

**Customer special code <sup>2)</sup>** e.g. (551) stands for RoHS compliant (Cadmium containing contacts)  
(Only for special requirements) (555) stands for RoHS compliant (Cadmium-free contacts)

**Notes:** 1) We have now gradually updated our ordering information. We suggest new type should be selected. If necessary, old type can be kept for some period for the old customers.

2) HF13F 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.

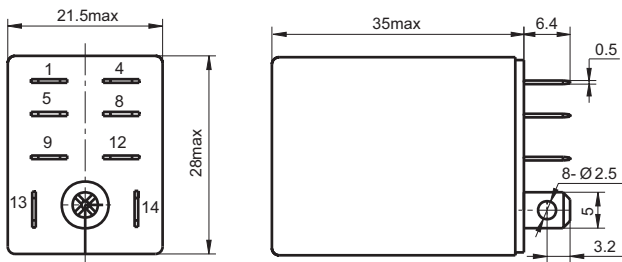
3) please add a suffix (016) after the part number for the special type with terminals numbered 1,2,3,4,5,6,7,8.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT Unit: mm

Unit: mm

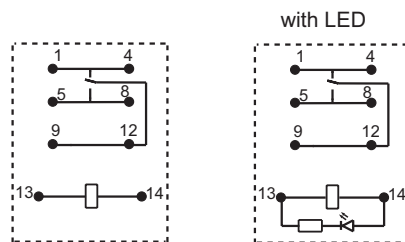
HF13F/□□□□ -1Z1□

## Outline Dimensions



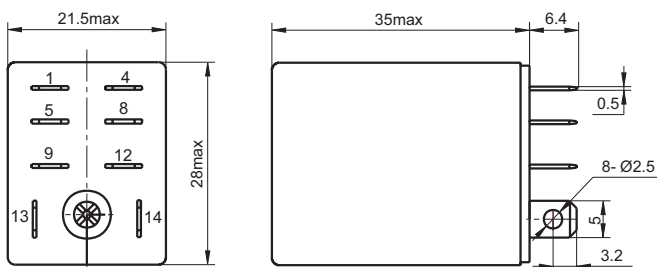
## Wiring Diagram

(Bottom view)



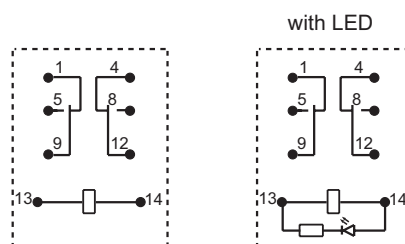
HF13F/□□□□ -2Z1□

## Outline Dimensions



## Wiring Diagram

(Bottom view)

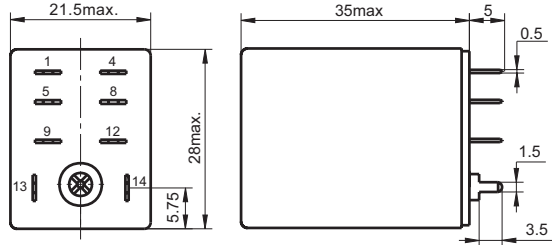


## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

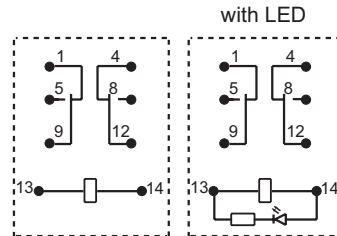
Unit: mm

HF13F/□□□□-2Z2□

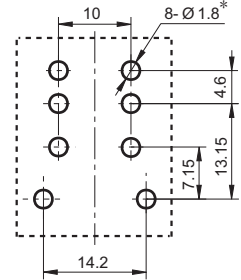
Outline Dimensions



Wiring Diagram  
(Bottom view)



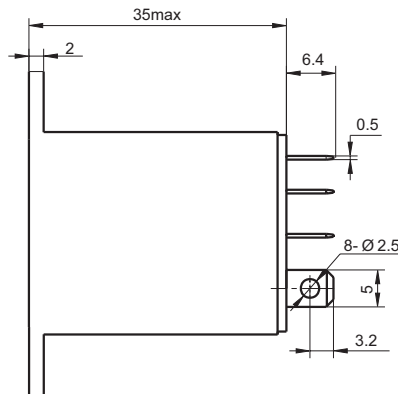
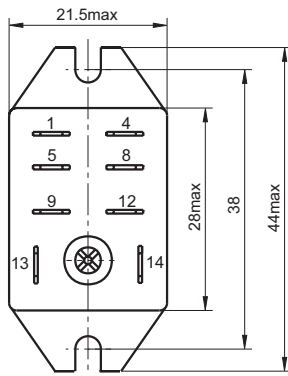
PCB Layout  
(Bottom view)



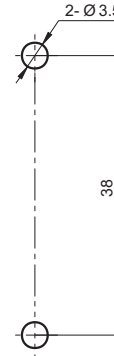
\*: Please adjust the site of this diameter according to the actual application.

HF13F/□□□□-2Z5□

Outline Dimensions



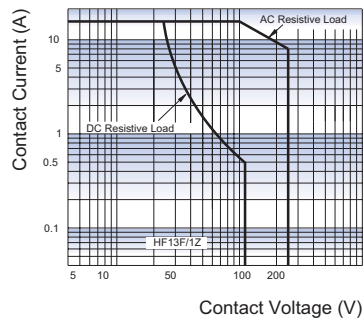
Mounting holes



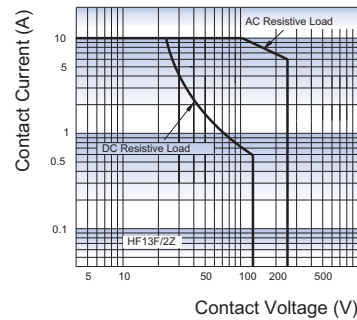
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be  $\pm 0.4\text{mm}$ .  
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)



### 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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