# HF25F (JQC-25F) SUBMINIATURE HIGH POWER RELAY

c UL us
File No.:E134517

File No.:R50055985

CQC
File No.:CQC06001016263


## Features

- Small and for microwave oven
- 20A switching capability
- 1.5HP 250VAC approved by UL standard
- 5kV impulse withstand voltage (between coil and contacts)
- PCB & QC layouts
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (22.8 x 12.3 x 24.4) mm

## CONTACT DATA

| | |
|---|---|
| Contact arrangement | 1A |
| Contact resistance | 100mΩ (at 1A 6VDC) |
| Contact material | $AgSnO_2$ |
| Contact rating | 1.5HP 250VAC<br>20A 250VAC |
| Max. switching voltage | 30VDC / 250VAC |
| Max. switching current | 20A |
| Max. switching power | 5000VA / 480W |
| Mechanical endurance | $2 \times 10^6$ OPS |
| Electrical endurance | $1 \times 10^5$ OPS |

## 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. |
| Humidity | | 35% to 85% RH |
| Shock resistance | Functional | 100m/s$^2$ (10g) |
| | Destructive | 1000m/s$^2$ (100g) |
| Ambient temperature | | -40˚C to 85˚C |
| Vibration resistance | | 10Hz to 55Hz 1.5mm DA |
| Termination | | PCB & QC |
| Unit weight | | Approx. 16.5g |
| Construction | | Wash tight, Flux proofed |

**Notes:** 1) The data shown above are initial values.
2) Please find coil temperature curve in the characteristic curves below.

## COIL

| | |
|---|---|
| Coil power | 500mW |

## 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 | 0.25 | 6.50 | 50 x (1±10%) |
| 6 | 4.50 | 0.30 | 7.80 | 72 x (1±10%) |
| 9 | 6.75 | 0.45 | 11.7 | 162 x (1±10%) |
| 12 | 9.00 | 0.60 | 15.6 | 288 x (1±10%) |
| 18 | 13.5 | 0.90 | 23.4 | 648 x (1±10%) |
| 24 | 18.0 | 1.20 | 31.2 | 1152 x (1±10%) |

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

## SAFETY APPROVAL RATINGS

| | |
|---|---|
| UL&CUR | 20A 250VAC<br>16A 30VDC<br>1.5HP 250VAC |
| TÜV | 20A 250VAC COSØ =1<br>16A 30VDC |

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

## ORDERING INFORMATION

| | HF25F / | 012 | -H | S | 1 | (XXX) |
|---|---|---|---|---|---|---|
| **Type** [1] | HF25F<br>JQC-25F (Old type) | | | | | |
| **Coil voltage** | 5, 6, 9, 12, 18, 24VDC | | | | | |
| **Contact arrangement** | **H**: 1 Form A | | | | | |
| **Construction** [2] | **S** : Wash tight | **Nil** : Flux proofed | | | | |
| **Version** | **1:** 1 type | **2:** 2 type | **3:** 3 type | **4:** 4 type | Nil**:** Standard | |
| **Customer special code** [3] | Only for special requirements, e.g. (555) stands for RoHS compliant | | | | | |

**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) Under the ambience with dangerous gas like $H_2S$, $SO_2$ or $NO_2$, wash tight type is recommended; please test the relay in real applications. If the ambience allows, flux proofed is preferentially recommended.

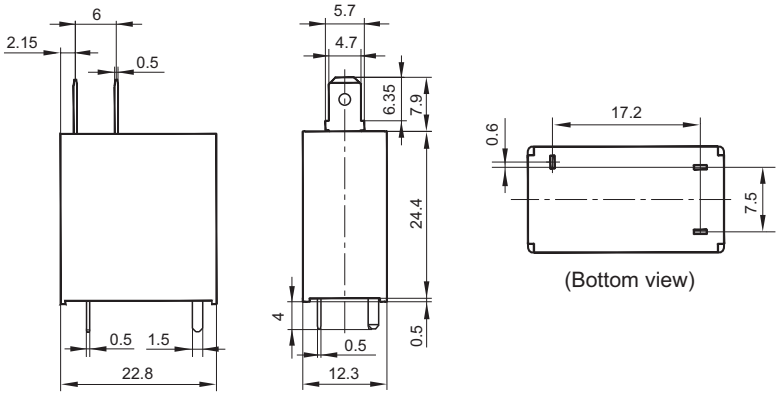
3) HF25F is an environmental friendly product. Please mark a special code (555) when ordering.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

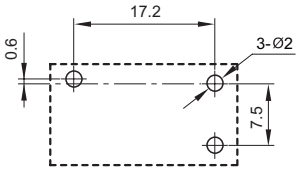
Unit: mm

Standard:

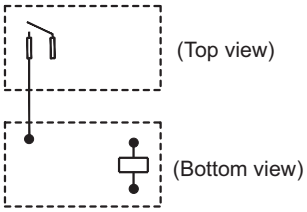
Outline Dimensions




PCB Layout (Bottom view)

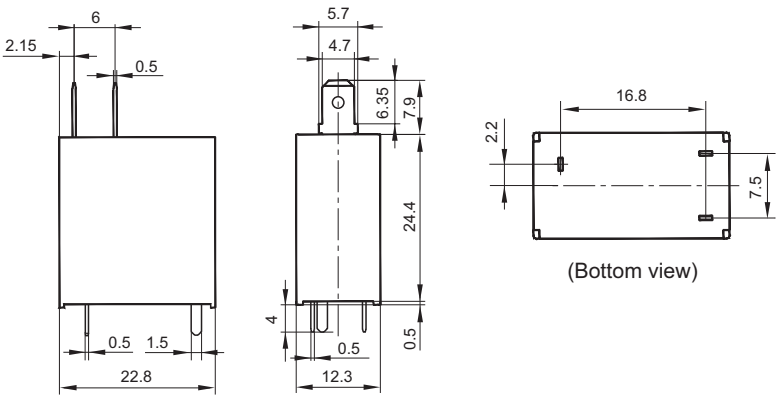



Wiring Diagram

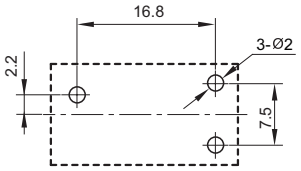



1 type:

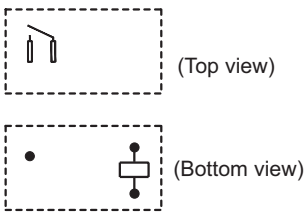
Outline Dimensions




PCB Layout (Bottom view)




Wiring Diagram

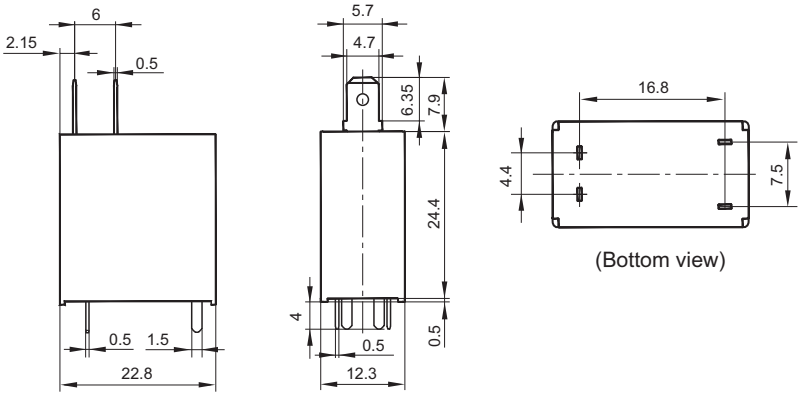


## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

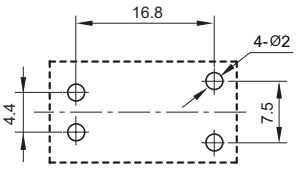
Unit: mm

2 type:

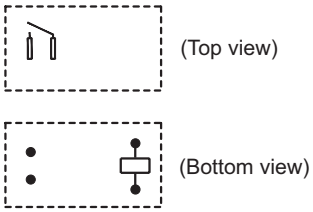
Outline Dimensions




PCB Layout (Bottom view)

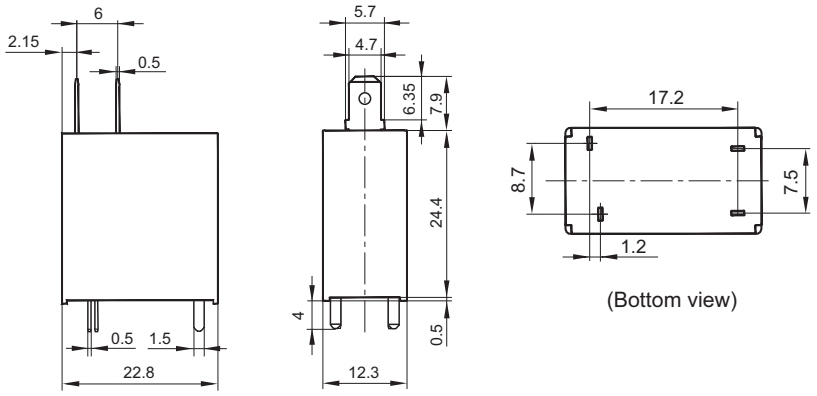



Wiring Diagram

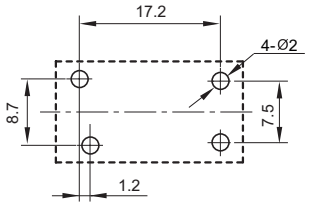



3 type:

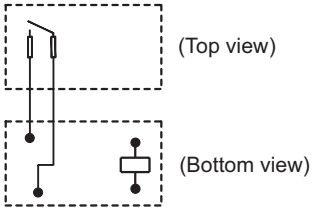
Outline Dimensions




PCB Layout (Bottom view)




Wiring Diagram

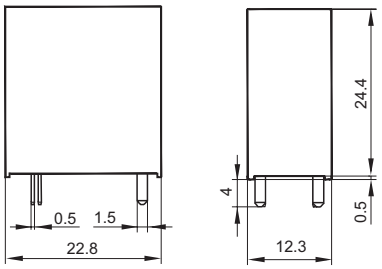


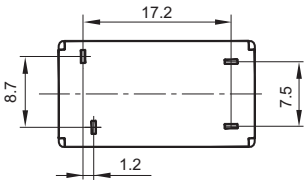
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

4 type:

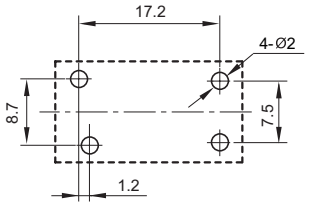
Outline Dimensions




(Bottom view)

PCB Layout (Bottom view)




Wiring Diagram

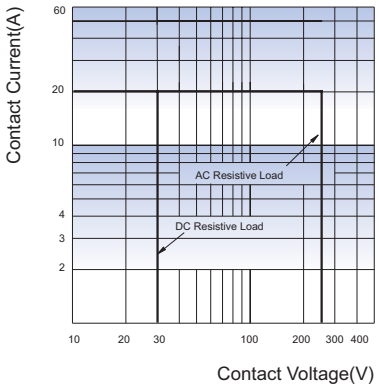
(Bottom view)

Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

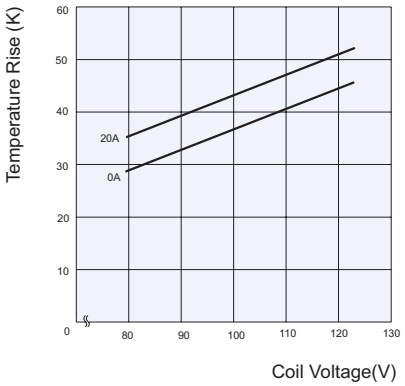
2) The tolerance without indicating for PCB layout is always ±0.1mm.

## CHARACTERISTIC CURVES

MAXIMUM SWITCHING POWER




COIL TEMPERATURE RISE




### 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.