

# JQC-3FF

# SUBMINIATURE HIGH POWER RELAY



File No:E319069



File No:R 50265555



File No:CQC07001021474



## Features

- 15A switching capability
- 1Form A and 1Form C configurations
- Subminiature, standard PCB layout
- Plastic sealed and flux proofed types available
- UL insulation system: Class F
- Environmental friendly product (RoHS compliant)
- Outline Dimensions:(19.0 x 15.2 x 15.5)mm

## CONTACT DATA

Contact arrangement	1A	1C	
		NO	NC
Contact resistance <sup>1)</sup>	100mΩ max.(at 1A 6VDC)		
Contact material	AgSnO <sub>2</sub> , AgCdO		
Contact rating (Res.load)	10A 277VAC	10A 277VAC <sup>(2)</sup>	5A 250VAC
Max.switching voltage	277VAC/28VDC		250VAC
Max.switching current	15A	10A	5A
Max.switching power	2770VA/280W		1250VA
Mechanical endurance	1 x 10 <sup>7</sup> ops		
Electrical endurance <sup>3)</sup>	1H type:1 x 10 <sup>5</sup> ops(10A 250VAC, Resistive load, Room temp., 1s on 9s off) 1Z type:5 x 10 <sup>4</sup> ops (NO/NC:5A 250VAC, Resistive load, Room temp., 5s on 5s off)		

- Notes:** 1) The data shown above are initial values.  
2) Applicable when NC is not energized with load.  
3) For plastic sealed type, the venting-hole should be opened in electrical endurance test.

## CHARACTERISTICS

Insulation resistance	100MΩ(at 500VDC)	
Dielectric strength	Between coil&contacts	1500VAC 1min
	Between open contacts	750VAC 1min
Operate time(at nomi.volt.)	10ms max.	
Release time(at nomi.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 85°C	
Termination	PCB	
Unit weight	Approx. 10g	
Construction	Plastic sealed, Dust protected	

- Notes:** 1) The data shown above are initial values.  
2) If the ambient temperature is higher than 85°C, please contact with JINTIAN.

## 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 <sup>(1)</sup>	Drop-out Voltage VDC <sup>(1)</sup>	Max. Voltage VDC <sup>(3)</sup>	Coil Resistance Ω
5	≤3.80	≥0.5	6.5	70 x (1±10%)
6	≤4.50	≥0.6	7.8	100 x (1±10%)
9	≤6.80	≥0.9	11.7	225 x (1±10%)
12	≤9.00	≥1.2	15.6	400 x (1±10%)
18	≤13.5	≥1.8	23.4	900 x (1±10%)
24	≤18.0	≥2.4	31.2	1600 x (1±10%)
48	≤36.0	≥4.8	62.4	4500 x (1±10%)
48 <sup>(2)</sup>	≤36.0	≥4.8	62.4	6400 x (1±10%)

- Notes:** 1) The data shown above are initial values.  
2) There are 2 types for 48V--510mW and 360mW. The coil resistance for 510mW type is 4500ohm while for that for 360mW type is 6400ohm. If 360mW type is required, please add a special suffix(068) in the ordering information.  
3) \*Maximum Voltage refers to the maximum voltage which relay coil could endure in a short period of time.

## SAFETY APPROVAL RATINGS

UL/ CUL	1 Form A	10A 277VAC 15A 125VAC 1/2HP 125VAC(AgSnO <sub>2</sub> )
	1 Form C	NO:10A 277VAC NO:10A 120VAC NC:10A 120VAC

- Notes:** 1) For sealed type, the vent-hole cover should be excised.  
2) Only typical loads are listed above. Other load specifications can be available upon request.



JINTIAN RELAY

ISO9001、ISO14001、OHSAS18001 CERTIFIED

## ORDERING INFORMATION

**JQC-3FF 012 -1H S T F (XXX)**

**Type**

**Coil voltage** 5, 6, 9, 12, 18, 24, 48VDC

**Contact arrangement** H:1Form A D:1Form B Z:1Form C

**Construction**<sup>1)2)</sup> S: Plastic sealed Nil: Flux proofed

**Contact material**<sup>3)</sup> T: AgSnO<sub>2</sub> Nil: AgCdO

**Insulation standard** F: Class F Nil: Class B

**Special code**<sup>4)</sup> XXX: Customer special requirement Nil: Standrad

- 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) AgSnO<sub>2</sub> contact can be represented as "(T)" after periodic code.  
 4) The customer special requirement express as special code after evaluating by JINTIAN. e.g. (335) stand for product in accordance to IEC 60335-1 (GWT).

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

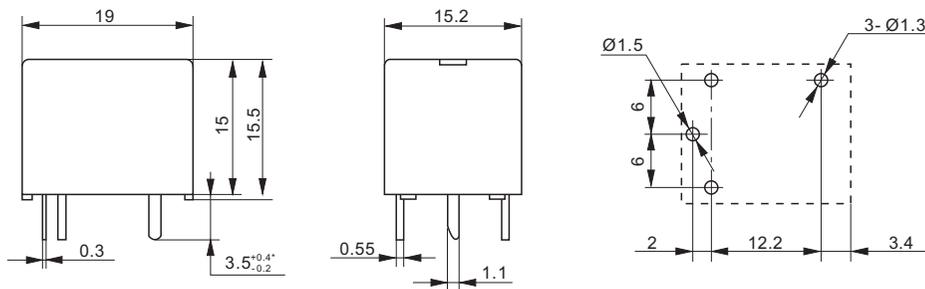
Unit: mm

Outline Dimensions

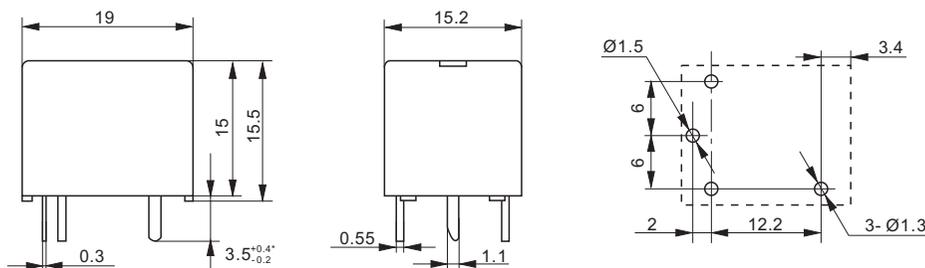
Wiring Diagram  
(Bottom view)

PCB Layout  
(Bottom view)

1 Form A



1 Form B



# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

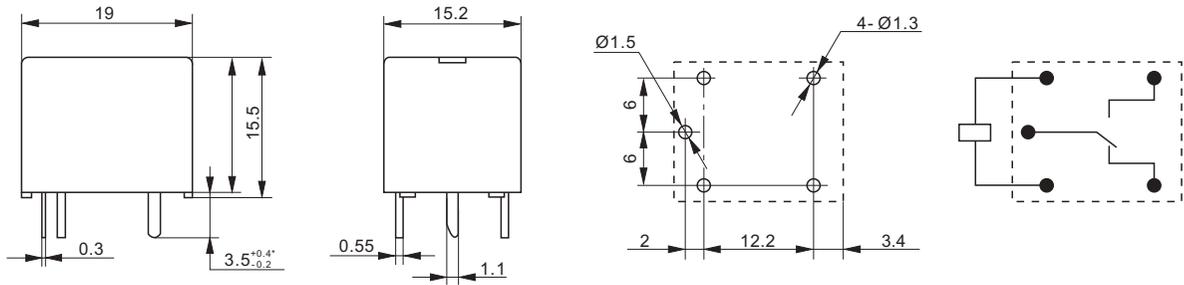
Unit: mm

## Outline Dimensions

## Wiring Diagram (Bottom view)

## PCB Layout (Bottom view)

### 1 Form C



Remark: 1) The pin dimension of the product outline drawing is the size before tinning (it will become larger after tinning), and the mounting hole size is the recommended design size of the PCB board hole. The specific PCB board hole design size can be mapped and adjusted according to the actual product.

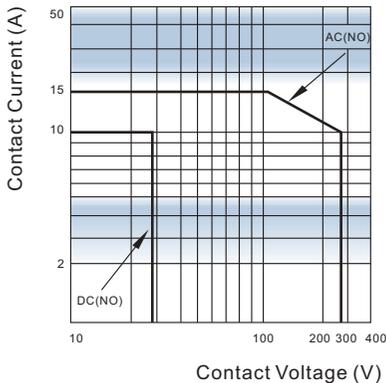
2) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1$ mm, tolerance should be  $\pm 0.2$ mm; outline dimension  $> 1$ mm and  $\leq 5$ mm, tolerance should be  $\pm 0.3$ mm; outline dimension  $> 5$ mm, tolerance should be  $\pm 0.4$ mm.

3) The tolerance without indicating for PCB layout is always  $\pm 0.1$ mm.

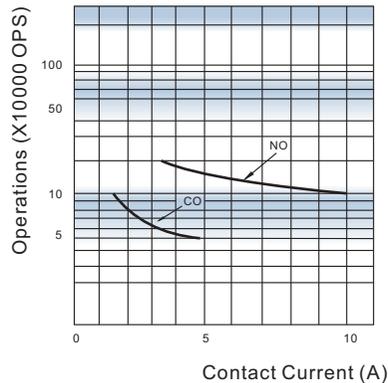
4) The additional tin top is max. 1mm.

## CHARACTERISTIC CURVES

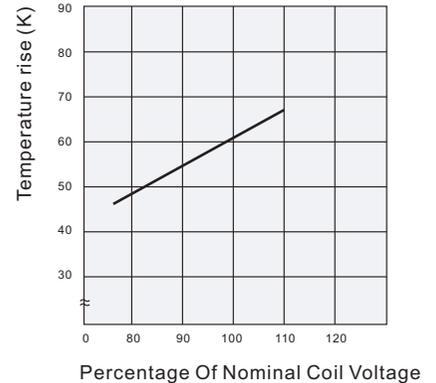
### MAXIMUM SWITCHING POWER



### ENDURANCE CURVE



### COIL TEMPERATURE RISE



#### Test conditions:

NO, Resistive load, 277VAC/28VDC,  
Flux proofed, Room temp., 1s on 9s off  
CO, Resistive load, 250VAC,  
Flux proofed, Room temp., 5s on 5s off.

**Notes:** For plastic sealed type, the venting-hole should be opened in electrical endurance test.

#### Test conditions:

10A at 85°C  
Mounting distance: 10mm

#### 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 JINTIAN for the technical service. However, it is the user's responsibility to determine which product should be used only.