

# JT105F-5

# SUBMINIATURE HIGH POWER RELAY


  
 File No:E319069


  
 File No:40038813(DC type)


  
 File No:CQC13002100204(DC type)



## Features

- 40A switching capability
- 2.5kV dielectric strength(between coil and contacts)  
4kV dielectric strength for type T
- PCB & QC types available
- Plastic sealed and flux proofed types available
- UL insulation system:Class F available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions:(32.4 x 27.3 x 27.8)mm

## CONTACT DATA

Contact arrangement	1A	1B	1C(NO)	1C(NC)
Contact resistance <sup>1)</sup>	50mΩ max.(at 1A 24VDC)			
Contact material	AgCdO,AgSnO <sub>2</sub>			
Max.switching voltage	277VAC/28VDC			
Max.switching current	40A <sup>2)</sup>	15A	30A	20A
Max.switching capacity	11080VA 1120W	4155VA 420W	8310VA 840W	5540VA 560W
JT105F-5 rating	30A 240VAC 30A 28VDC	15A 240VAC 10A 28VDC	20A 240VAC 20A 28VDC	10A 240VAC 10A 28VAC
JT105F-5L rating	25A 240VAC 20A 28VDC	15A 240VAC 10A 28VDC	20A 240VAC 20A 28VDC	10A 240VAC 10A 28VAC
Mechanical endurance	1 x 10 <sup>7</sup> ops			
Electrical endurance	1H type(Flux proofed):1 x 10 <sup>5</sup> ops (28A 277VAC, Resistive load, Room temp., 1s on 9s off)			

**Notes:** 1) The data shown above are initial values.  
 2) Long time current-carrying under 40A condition is prohibited.

## CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil&contacts	2500VAC/4000VAC 1min
	Between open contacts	1500VAC 1min
Operate time(at nomi.volt.)		DC type:15ms max.
Release time(at nomi.volt.)		DC type:10ms max.
Ambient temperature		DC:-55°C to 85°C AC:-55°C to 60°C
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
Termination		PCB&QC
Unit weight		Approx. 36g
Construction		Plastic sealed Flux proofed

**Notes:** 1) For plastic sealed type,the venting-hole should be opened in test.  
 2) The data shown above are initial values.  
 3) Please find coil temperature curve in the characteristic curves below.  
 4) UL insulation system:Class F,Class B.

## COIL

Coil power	DC type:Approx. 900mW; AC type:Approx. 2VA
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## SAFETY APPROVAL RATINGS

UL/ CUL	1 Form A	AgSnO <sub>2</sub>	40A 277VAC 30A 277VAC 2HP 250VAC 1HP 125VAC
		AgCdO	30A 28VDC 28A 277VAC 277VAC(FLA=20)(LRA=60)
	1 Form B	AgCdO	15A 277VAC 10A 28VDC 1/2HP 250VAC 1/4HP 125VAC 277VAC(FLA=10)(LRA=33)
		NO	30A 277VAC 2HP 250VAC 1HP 125VAC
	1 Form C	AgCdO	20A 277VAC 20A 28VDC 277VAC(FLA=20)(LRA=60)
		NC	20A 277VAC 1/2HP 250VAC 1/4HP 125VAC
		AgCdO	10A 277VAC 10A 28VDC 277VAC(FLA=10)(LRA=33)

**Notes:** 1) All values unspecified are at room temperature.  
 2) Only typical loads are listed above.Other load specifications can be available upon request.



JINTIAN RELAY

ISO9001、ISO14001、OHSAS18001 CERTIFIED

## COIL DATA

at 23°C

### DC type

Nominal Voltage VDC	Pick-up Voltage VDC <sup>3)</sup>	Drop-out Voltage VDC <sup>3)</sup>	Max. Voltage VDC <sup>*4)</sup>	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%)

### AC type

Nominal Voltage VAC	Pick-up Voltage VAC <sup>3)</sup>	Drop-out Voltage VAC <sup>3)</sup>	Max. Voltage VAC <sup>*4)</sup>	Coil Resistance Ω
12	≤9.6	≥2.4	15.6	25 x (1±10%)
24	≤19.2	≥4.8	31.2	100 x (1±10%)
120	≤96.0	≥24.0	156.0	2500 x (1±10%)
208	≤166.4	≥41.0	270.4	11000 x (1±10%)
220	≤176.0	≥44.0	286.0	13490 x (1±10%)
240	≤192.0	≥48.0	286.0	13490 x (1±10%)
277	≤220.0	≥54.0	360.1	15000 x (1±10%)

- Notes:** 1) When requiring pick-up voltage<80% of nominal voltage, special order allowed.  
 2) The data shown above are initial values at 50Hz. When requiring 60Hz, special order allowed.  
 3) The data shown above are initial values.  
 4) \*Maximum Voltage refers to the maximum voltage which relay coil could endure in a short period of time.

## ORDERING INFORMATION

**JT105F-5 012 D T-1H S T F (XXX)**

### Type

JT105F-5: 30A  
 JT105F-5L: 25A

### Coil voltage

**DC:** 5VDC to 110VDC  
**AC:** 12VAC to 277VAC

### Coil voltage form

**D:** DC      **A:** AC

### Dielectric strength

(between coil&cintacts) **T:** 4000VAC    **Nil:** 2500VAC

### Contact arrangement

**1H:** 1 Form A    **1D:** 1 Form B    **Z:** 1 Form 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> or NO<sub>2</sub> dust, ect.). 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> or No<sub>2</sub>, dust, ect.).  
 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.

# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PCB BOARD LAYOUT

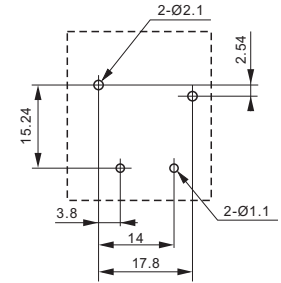
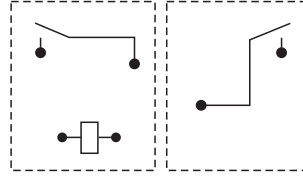
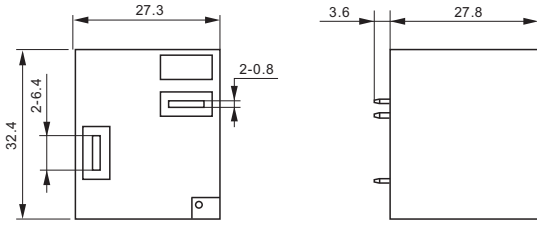
Unit: mm

## Outline Dimensions

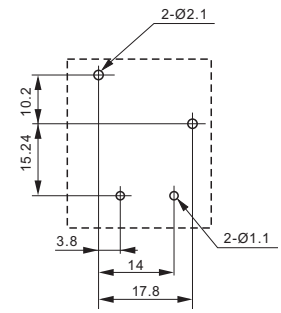
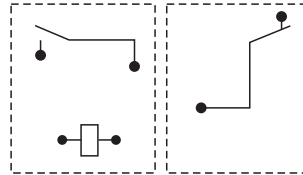
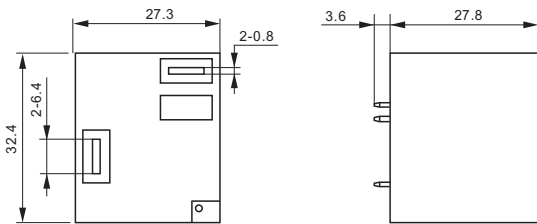
## Wiring Diagram (Bottom view)

## PCB Layout (Bottom view)

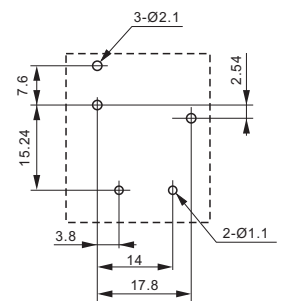
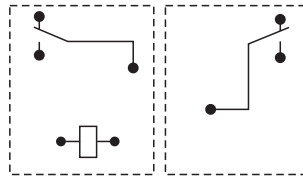
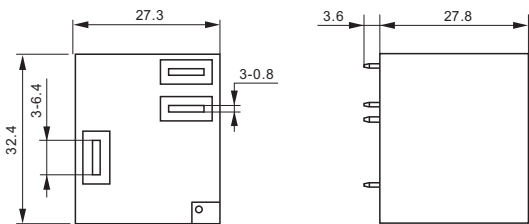
### 1 Form A



### 1 Form B



### 1 Form C



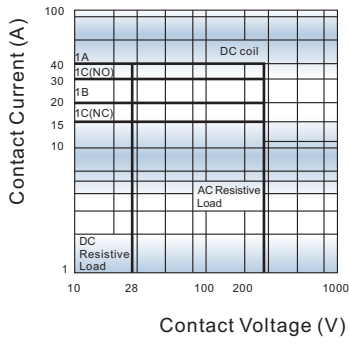
Remark: 1) The pin dimension of the product outline drawing is the size before tinning (it will become larger after tinning), and the mounting hole size is the recommended design size of the PCB board hole. The specific PCB board hole design size can be mapped and adjusted according to the actual product.

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.

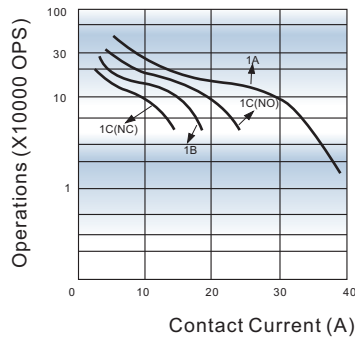
3) The tolerance without indicating for PCB layout is always  $\pm 0.1$ mm.

# CHARACTERISTIC CURVES

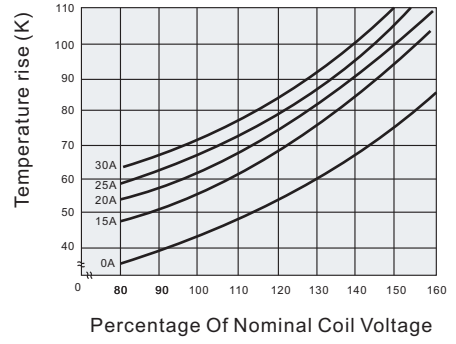
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



**Test conditions:**  
Resistive load, Dust protected,  
AgCdO, 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 JINTIAN for the technical service. However, it is the user's responsibility to determine which product should be used only.