

# JT33F

# SUBMINIATURE HIGH POWER RELAY


  
 File No:E319069


  
 File No:40048367


  
 File No:CQC17002173824



## Features

- 10A switching capability
- Creepage distance:8mm(coil&contacts)
- Creepage distance:NO type 4.5mm,CO type 4mm
- 1Form A and 1Form C configurations
- Standard PCB layout
- Plastic sealed and flux proofed types available
- UL insulation system:Class F
- Environmental friendly product (RoHS compliant)
- Outline Dimensions:(20.5 x 10.2 x 15.3)mm
- Product in accordance to IEC 60335-1 available

## CONTACT DATA

Contact arrangement	1A,1C		
Contact resistance <sup>1)</sup>	100mΩ max.(at 1A 6VDC)		
Contact material	AgSnO <sub>2</sub>		
Contact rating (Res.load)	1A	1C	
		NO	NC
	5A 277VAC	5A 277VAC	3A 277VAC
	5A 30VDC 10A 125VAC	5A 30VDC 10A 125VAC	3A 30VDC
Max.switching voltage	277VAC/30VDC		
Max.switching current	10A	3A	
Max.switching power	1385VA/150W	831VA/90W	
Mechanical endurance	1 x 10 <sup>6</sup> ops		
Electrical endurance	1H type:1 x 10 <sup>5</sup> ops(5A 277VAC, General load, Room temp, 1s on 9s off) 1Z type:1 x 10 <sup>5</sup> ops (NO:5A/NC:3A 277VAC, General load, Room temp, 1s on 9s off)		

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

## CHARACTERISTICS

Insulation resistance	1000MΩ(at 500VDC)	
Dielectric strength	Between coil&contacts	4000VAC 1min
	Between open contacts	1000VAC 1min
Operate time(at nomi.volt.)	8ms 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. 7g	
Construction	Plastic sealed	
	Flux proofed	

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

## COIL

Coil power	Standard:Approx. 450mW
	Sensitive:Approx. 200mW

## COIL DATA

at 23°C

### Standard type

Nominal Voltage VDC	Pick-up Voltage VDC <sup>1)</sup>	Drop-out Voltage VDC <sup>1)</sup>	Max. Voltage VDC <sup>*2)</sup>	Coil Resistance Ω
3	≤2.25	≥0.15	3.9	20 x (1±10%)
5	≤3.75	≥0.25	6.5	55 x (1±10%)
6	≤4.50	≥0.30	7.8	80 x (1±10%)
9	≤6.75	≥0.45	11.7	180 x (1±10%)
12	≤9.00	≥0.60	15.6	320 x (1±10%)
18	≤13.5	≥0.90	23.4	720 x (1±10%)
24	≤18.0	≥1.20	31.2	1280 x (1±10%)
48	≤36.0	≥2.40	62.4	5120 x (1±10%)

### Sensitive type (Only for 1 Form A)

Nominal Voltage VDC	Pick-up Voltage VDC <sup>1)</sup>	Drop-out Voltage VDC <sup>1)</sup>	Max. Voltage VDC <sup>*2)</sup>	Coil Resistance Ω
3	≤2.25	≥0.15	4.5	45 x (1±10%)
5	≤3.75	≥0.25	7.5	125 x (1±10%)
6	≤4.50	≥0.30	9.0	180 x (1±10%)
9	≤6.75	≥0.45	13.5	400 x (1±10%)
12	≤9.00	≥0.60	18.0	720 x (1±10%)
18	≤13.5	≥0.90	27.0	1600 x (1±10%)
24	≤18.0	≥1.20	36.0	2800 x (1±10%)

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

2)\*Maximum Voltage refers to the maximum voltage which relay coil could endure in a short period of time.



JINTIAN RELAY

ISO9001、ISO14001、OHSAS18001 CERTIFIED

## SAFETY APPROVAL RATINGS

UL/CUL	AgSnO <sub>2</sub>	1 Form A	5A 277VAC /30VDC 70°C 10A 125VAC 70°C 10A 120VAC 70°C 1A 120VAC 105°C 15LRA/2.5FLA 120VAC 105°C 4A 120VAC 105°C
		1 Form C	NC:3A 277VAC/30VDC 70°C
VDE	AgSnO <sub>2</sub>	1 Form A	5A 277VAC 70°C
		1 Form C	NC:3A 277VAC 70°C
CQC	AgSnO <sub>2</sub>	1 Form A	5A 277VAC /30VDC 85°C
		1 Form C	NC:3A 277VAC/30VDC 85°C

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

## ORDERING INFORMATION

<b>Type</b>	JT33F	012	-H	S	L	T	F (XXX)
<b>Coil voltage</b>	3, 5, 6, 9, 12, 18, 24, 48VDC						
<b>Contact arrangement</b>	H:1 Form A		Z:1 Form C				
<b>Construction</b> <sup>1)2)</sup>	S:Plastic sealed Nil:Flux proofed						
<b>Contact power</b>	L:Sensitive(Only for 1 Form A)			Nil:Standard			
<b>Contact material</b>	T:AgSnO <sub>2</sub>						
<b>Insulation standard</b>	F:Class F						
<b>Special code</b> <sup>3)</sup>	XXX:Customer special requirement			Nil:Standard			

**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) The customer special requirement express as special code after evaluating by JINTIAN. e.g. (335) stands for product in accordance to IEC 60335-1(GWT).

# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

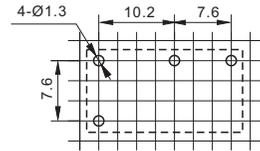
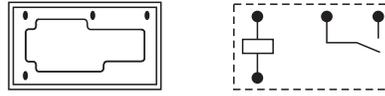
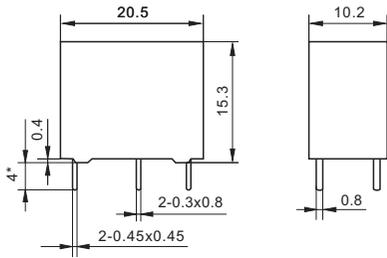
Unit: mm

## Outline Dimensions

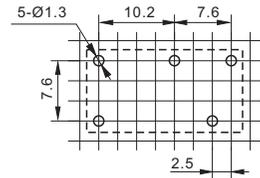
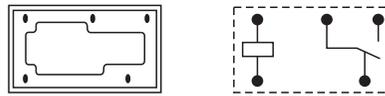
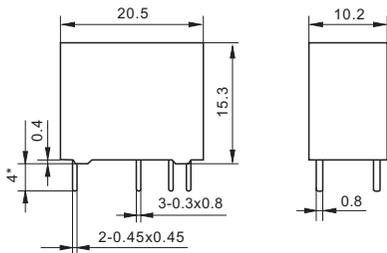
## Wiring Diagram (Bottom view)

## PCB Layout (Bottom view)

### 1 Form A



### 1 Form 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.

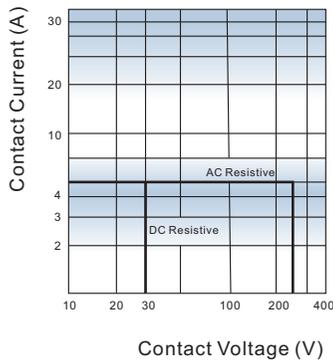
2) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be  $\pm 0.4\text{mm}$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

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

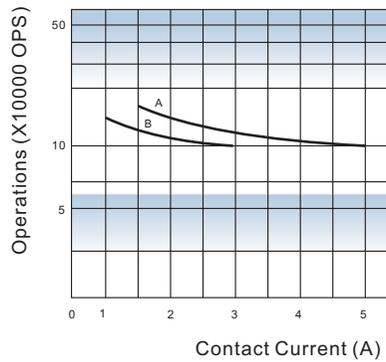
4) The width of the gridding is 2.54mm.

## CHARACTERISTIC CURVES

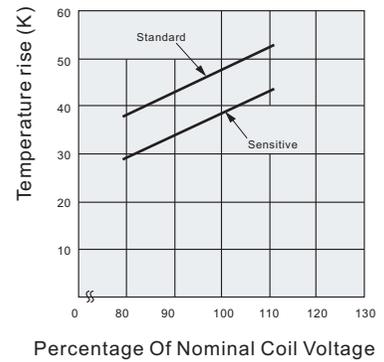
### MAXIMUM SWITCHING POWER



### ENDURANCE CURVE



### COIL TEMPERATURE RISE



#### Notes:

- Curve A: NO contact  
Curve B: NC contact

#### 2. Test conditions:

- Curve A: NO, Resistive load, Room temp., flux proofed, 277VAC/30VDC, 1s on 9s off
- Curve B: NC, Resistive load, Room temp., flux proofed, 277VAC/30VDC, 1s on 9s off

#### Test conditions:

- Standard: 5A at 70°C
- Sensitive: 5A at 70°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.