

# HF197F-110

# MINIATURE HIGH POWER RELAY



File No.: E133481



File No.: R 50591522



File No.: CQC22002364474



## Features

- Latching relay
- 110A switching capability
- 133A loading current capability
- No polarity on the load terminal
- Main contact gap  $\geq 1.5\text{mm}$
- 3kV dielectric strength (between coil and contacts)

RoHS compliant

## CONTACT DATA

Type	HF197F-110	HF197F(954)
Contact arrangement	1H/1H+1A	
Contact voltage drop(initial)	Main contact: $\leq 20\text{mV}$ (6VDC 20A)	
Contact material	AgSnO <sub>2</sub>	
Contact rating (Res. load)	Main contact: 110A 60VDC, Auxiliary contact: 1A 6VDC	Main contact: Making 50A, Loading 133A, Breaking 50A, 277VAC, Auxiliary contact: 1A 6VDC
Max. switching voltage	Main contact: 60VDC, Auxiliary contact: 6VDC	Main contact: 277VAC, Auxiliary contact: 6VDC
Max. Switching current	Main contact: 110A, Auxiliary contact: 1A	Main contact: 50A, Auxiliary contact: 1A
Max. Switching power	Main contact: 6600W, Auxiliary contact: 6W	Main contact: 13850W, Auxiliary contact: 6W
Mechanical endurance	$1 \times 10^5$ OPS	
Electrical endurance	Main contact: $\geq 6 \times 10^3$ OPS (Room temp., 1s on 9s off, 110A 60VDC, Resistive) $\geq 6 \times 10^3$ OPS (85°C, 1s on 9s off, Making 133A, Breaking 50A 60VDC, Resistive)	Main contact: $\geq 1 \times 10^4$ OPS (85°C, 1s on 9s off, Making 50A, Loading 133A, Breaking 50A 277VAC, Resistive)

## COIL

Coil power	Approx. 7.7W
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## COIL DATA at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max.	Reset Voltage VDC max.	Pulse Duration ms	Coil Resistance $\Omega$
12	8.4	8.4	200	$18.7 \times (1 \pm 10\%)$
24	16.8	16.8	200	$74.8 \times (1 \pm 10\%)$
48	33.6	33.6	200	$299.2 \times (1 \pm 10\%)$
60	42.0	42.0	200	$467.0 \times (1 \pm 10\%)$

## SAFETY APPROVAL RATINGS

UL/CUL TÜV CQC	Standard type	110A 60VDC, 85°C, Resistive Making 133A, Breaking 50A 60VDC, 85°C, Resistive
	(954) Type	Making 50A, Loading 133A, Breaking 50A 277VAC, 85°C, Resistive

**Notes:** 1) All values unspecified are at room temperature.  
2) Only typical loads are listed above. Other load specifications can be available upon request.  
3) Suitable for overvoltage category iii, and shall provide protection for a rated impulse withstand voltage peak of 4 kv.

## CHARACTERISTICS

Insulation resistance		100M $\Omega$ (500VDC)
Dielectric strength	Between open Main contacts	3000VAC 1min
	Between coil & Main contacts	3000VAC 1min
	Between Main contact & Auxiliary contact	3000VAC 1min
	Between coil & Auxiliary contacts	2000VAC 1min
Surge Voltage (Between coil & Main contacts)		6kV(1.2/50 $\mu$ s)
Operate time (at nomi. volt.)		30ms max.
Release time (at nomi. volt.)		30ms max.
Shock resistance	Functional	Main contacts: 5g
	Destructive	Main contacts: 50g
Vibration resistance		10Hz to 55Hz 2g
Humidity		5% to 85%RH
Ambient temperature		-40°C to 85°C
Termination		PCB
Unit weight		Approx. 50g
Construction		Plastic sealed, Flux proofed



HONGFA RELAY

ISO9001, IATF16949, ISO14001, ISO45001, IECQ QC 080000, ISO/IEC 27001 CERTIFIED

2025 Rev. 1.00

## ORDERING INFORMATION

Type	HF197F-110	12	-H	A	S	T	F	(XXX)
Coil voltage	9,12,24,48VDC							
Contact arrangement	H: 1 Form A							
Auxiliary contact arrangement	A: 1 Form A Nil: Without auxiliary contact							
Construction	S: Plastic sealed Nil: Flux proofed							
Contact material	T: AgSnO <sub>2</sub>							
Insulation standard	F: Class F							
Special code	XXX: Customer special requiremen Nil: Standard 954: AC load							

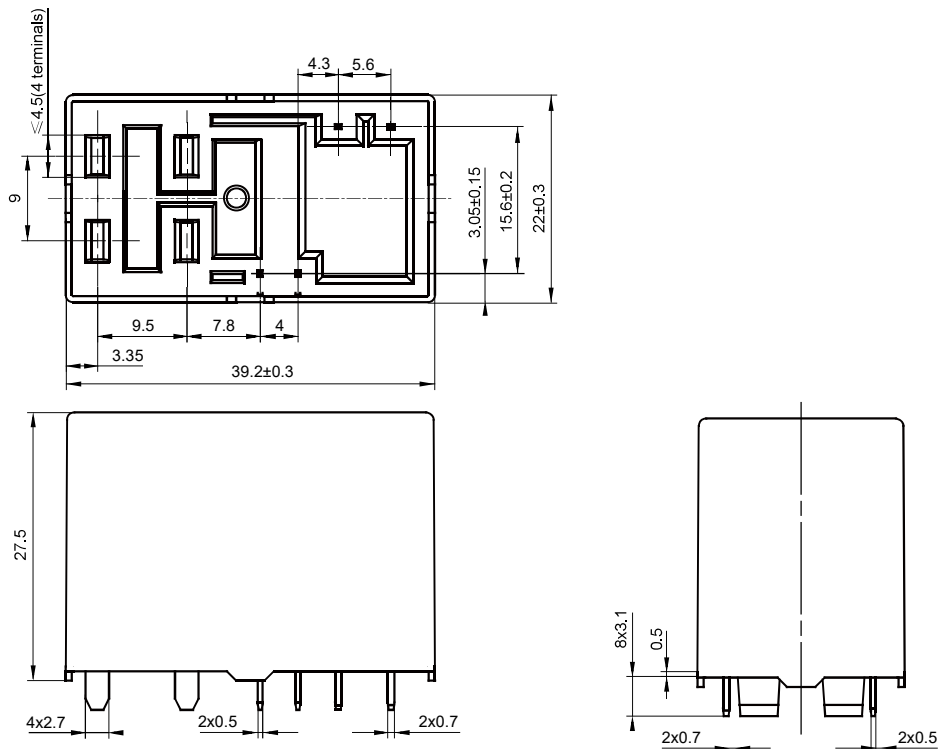
**Notes:** 1) Please avoid using the relay in an environment containing organic silicon,otherwise the entry of organic silicon into the relay may acceleration contact failure.If there are harmfu substances and elements such as water vapor, H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>,Cl,P,etc.In the use of environmental gases,it may lead to increased contact resistance and poor contact during the use of relays.In the above situations, please control the materials or use plastic sealed type and arrange relevant tests to confirm.  
2) Washing or surface cleaning process is not suggested after the flux-proofed relays are assembled on PCB.  
3) The customer special requirement express as special code after evaluating by Hongfa.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

### Outline Dimensions

With auxiliary contact

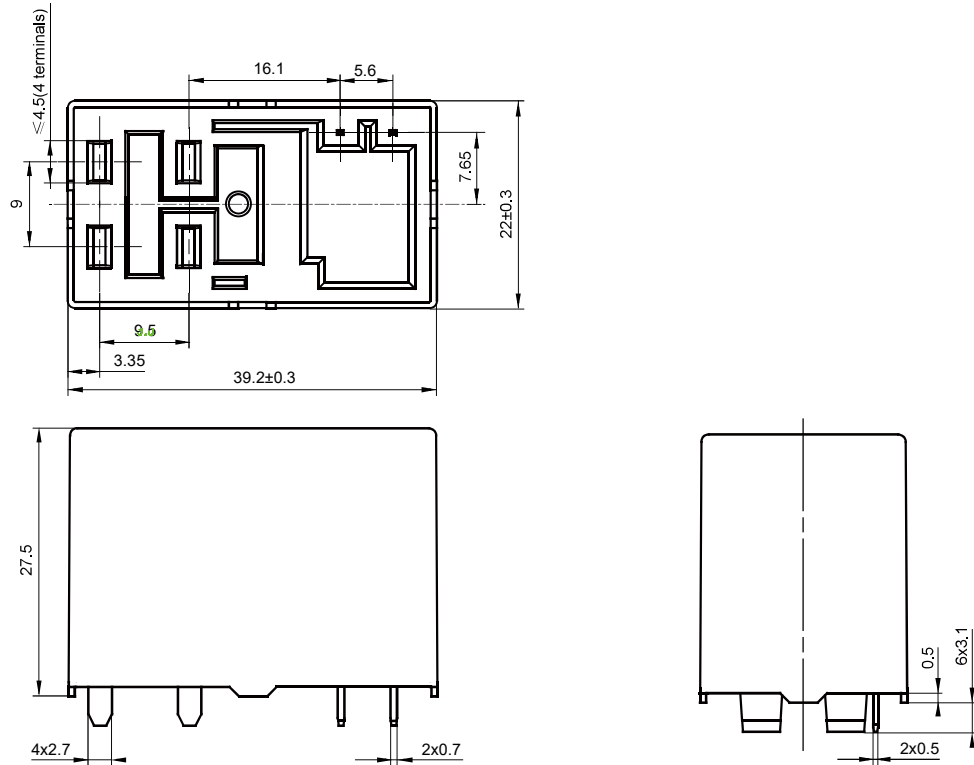


# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

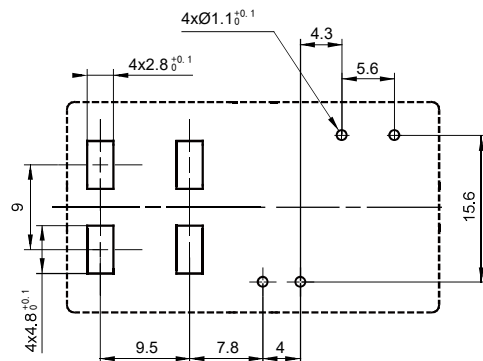
## Outline Dimensions

Without auxiliary contact

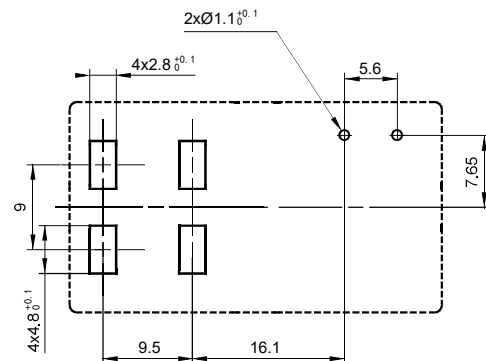


## PCB Layout (Bottom view)

With auxiliary contact



Without auxiliary contact

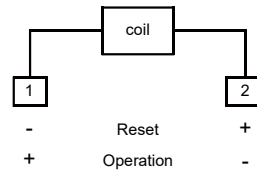
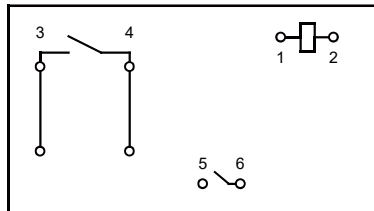


## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

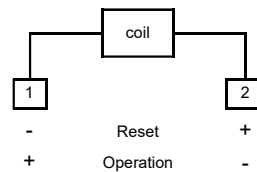
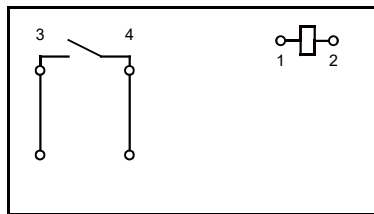
Unit: mm

### Wiring Diagram (Bottom view)

With auxiliary contact



Without auxiliary contact



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  $\pm 0.1\text{mm}$ .

#### Notice:

- 1) Relay is on the "reset" status when being released from stock, with the consideration of shock risen from transit and relay mounting, relay would be changed to "set" or "reset" status, therefore, when application (connecting the power supply), please reset the relay to "set" or "reset" status on request.
- 2) In order to maintain "set" or "reset" status, energized voltage to coil should reach the rated voltage. And also long energized time (more than 1 min) should be avoided.
- 3) Keep the product away from strong magnetic field during transportation, storage and application, to avoid change of set/reset voltage.

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