

# HFE10-50

# MINIATURE HIGH POWER LATCHING RELAY



### Features

- Magnetic blow-out arc latching relay
- 50A 60VDC switching Capacity
- Contact gap  $\geq 1.45\text{mm}$

RoHS compliant

### CONTACT DATA

Contact arrangement	1A,1B
Contact resistance <sup>1)</sup>	Typical value: <sup>2)</sup> $\leq 10\text{m}\Omega(50\text{A})$
Contact material	AgSnO <sub>2</sub>
Contact rating	50A 60VDC(DC. load) 5x10 <sup>4</sup> ops
Max. switching voltage	440VAC
Max. switching current	50A
Max. switching power	22000W
Mechanical endurance	1 X 10 <sup>5</sup> ops
Electrical endurance	See "contact rating"

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

2) Typical value: Sampling quantity for contact resistance shall not less than 20 pcs, take the average value from 5 continuous measurements for each sample.

### CHARACTERISTICS

Insulation resistance	1000M $\Omega(500\text{VDC})$
Dielectric strength	Between contact & coil 4000VAC 1min
	Between open contacts 3000VAC(50/60Hz, 1min)
Creepage distance	>8mm
Contact gap	$\geq 1.45\text{mm}$
Operate time	$\leq 15\text{ms}$
Release time	$\leq 15\text{ms}$
Shock resistance	Functional 98m/s <sup>2</sup>
	Destructive 980m/s <sup>2</sup>
Vibration resistance	10Hz ~ 55Hz 1.5mm DA
Humidity	5% ~ 85% RH
Ambient temperature	-40°C ~ 70°C
Termination	PCB
Unit weight	Approx. 40g
Construction	Plastic sealed, Flux proofed

Notes: The data shown above are initial values.

### COIL

Rated power	Single coil latching: Approx. 2.4W
	Double coils latching: Approx. 4.8W

### COIL DATA

23°C

#### Single coil latching

Nominal Voltage VDC	Set / Reset Voltage <sup>1)2)</sup> VDC	Pulse Duration ms	Coil Resistance x (1 $\pm$ 10%) $\Omega$
6	$\leq 4.8$	$\geq 50$	15
9	$\leq 7.2$	$\geq 50$	33.7
12	$\leq 9.6$	$\geq 50$	60
24	$\leq 19.2$	$\geq 50$	240
48	$\leq 38.4$	$\geq 50$	960

#### Double coils latching

Nominal Voltage VDC	Set / Reset Voltage <sup>1)2)</sup> VDC	Pulse Duration ms	Coil Resistance x (1 $\pm$ 10%) $\Omega$
6	$\leq 4.8$	$\geq 50$	7.5+7.5
9	$\leq 7.2$	$\geq 50$	16.9+16.9
12	$\leq 9.6$	$\geq 50$	30+30
24	$\leq 19.2$	$\geq 50$	120+120
48	$\leq 38.4$	$\geq 50$	480+480

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

2) The above set voltage, reset voltage are the test value for relay without load. Please use 1~1.5 times of rated voltage to drive the relay for your application.



HONGFA RELAY

ISO9001、IATF16949、ISO14001、ISO45001、IECQ QC 080000、ISO/EC 27001

2025 Rev.1.00

## ORDERING INFORMATION

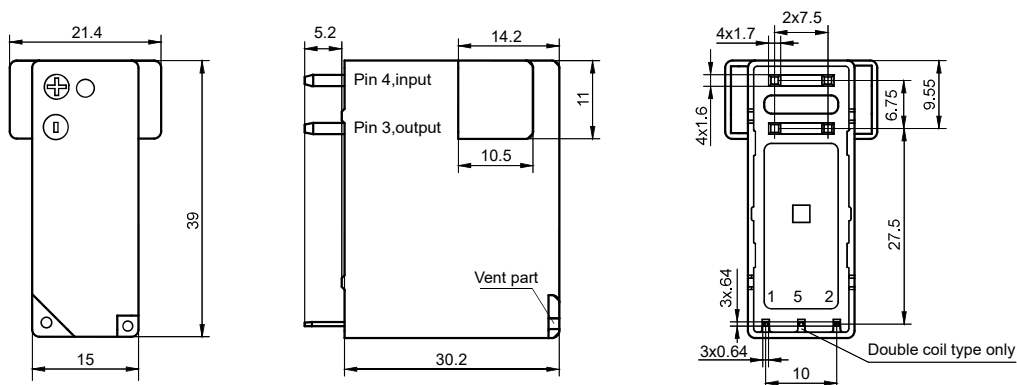
Type	HFE10-50 /12 -H S T -L1 -R (XXX)
Coil voltage	6,9,12,24,48 VDC
Contact arrangement	H: 1 Form A D: 1 Form B
Construction	S: Plastic sealed Nil: Flux proofed
Contact material	T: AgSnO <sub>2</sub>
Coil type	L1: Single coil latching L2: Double coils latching
Polarity	R: Reverse polarity Nil: Standard polarity
Special code <sup>1)</sup>	XXX:Customer special requirement

Notes: 1) The customer special requirement express as special code after evaluating by Hongfa.

## OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

### Outline Dimensions



### 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  $\pm 0.4\text{mm}$ .

### Wiring Diagram

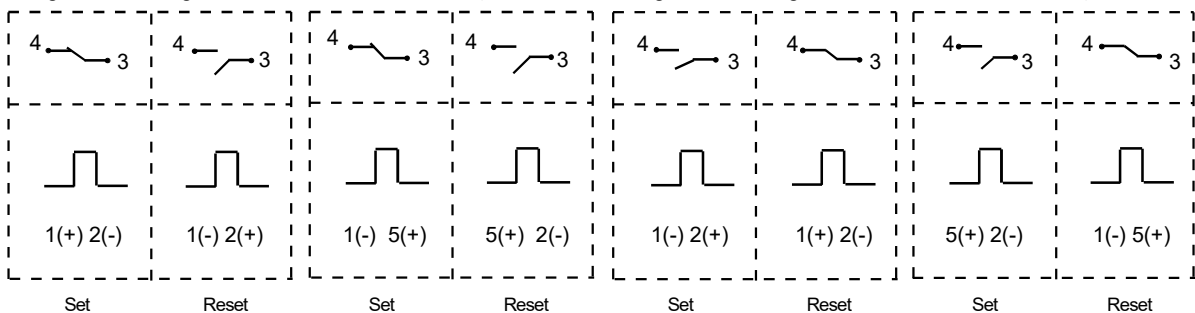
#### Standard polarity

Single coil latching, 1 Form A

Double coils latching, 1 Form A

Single coil latching, 1 Form B

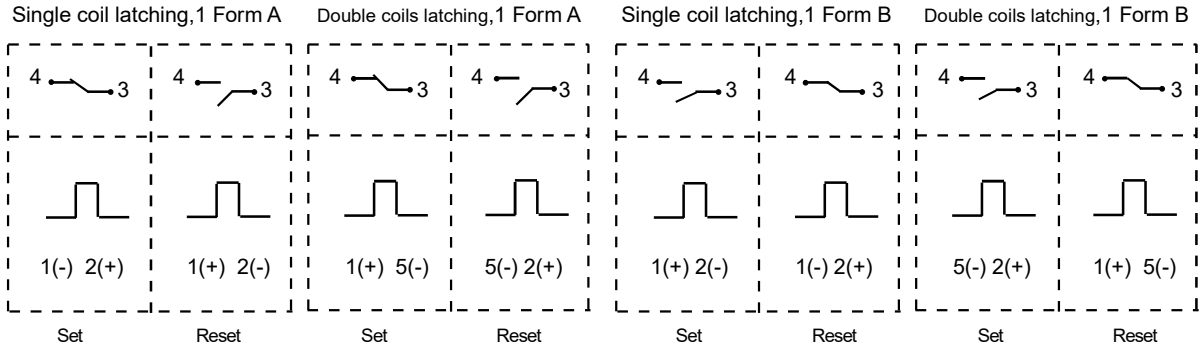
Double coils latching, 1 Form B



## OUTLINE DIMENSIONS AND WIRING DIAGRAM

### Wiring Diagram

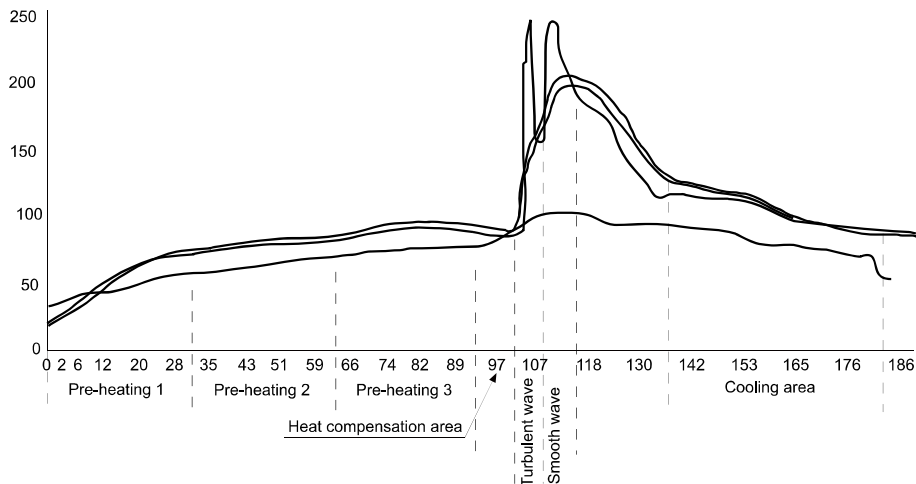
Reverse polarity



### CAUTIONS

1. Latching relay is on the "reset" or "set" status when delivery, 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 applied across the coil should reach the rated voltage, impulse width should be 5 times more than "set" or "reset" time. Do not energize voltage to "set" coil and "reset" coil simultaneously. And also long energized time (more than 1 min) should be avoided.
3. The recommended soldering temperature range is  $250 \pm 10^{\circ}\text{C}$  with the duration of 2~5s for PCB termination. It is not suggested to apply reflow soldering method, if it is required indeed, please contact with our technicians. It is general required that the wave soldering temperature at  $250^{\circ}\text{C}$  shall not more than 2s, The below chart is the wave soldering temperature distribution chart we recommended for your reference.

Wave soldering temperature distribution chart



#### Disclaimer

The specification is for reference only. 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.

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