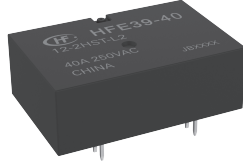


# HFE39-40

## MINIATURE HIGH POWER LATCHING RELAY



### Features

- 32A Latching relay
- Max.inrush current:320A/1.2ms
- Contact arrangement: 2 Form A, 2 Form B
- Short circuit withstand ability up to 1020A for 10ms
- Dielectric strength:  
4000VAC 1min(Between coil & contacts)  
1500VAC 1min(Between open contacts)
- (A81): Switching without load

RoHS compliant

### CONTACT DATA

Contact arrangement	2A,2B
Contact resistance <sup>1)</sup>	≤5mΩ(1A 24VDC)
Contact material	AgSnO <sub>2</sub>
Contact rating	<b>(A81): Switching without load:</b> Making at 32A 250VAC, breaking (without load): 5x10 <sup>4</sup> ops <b>Other applications:</b> 1.5P 250VA: 2x10 <sup>4</sup> ops 32A 250VAC: 6x10 <sup>3</sup> ops(Resistive)
Max. switching voltage	380VAC
Max. switching current	32A
Max. switching power	12160W
Mechanical endurance	1 x 10 <sup>6</sup> ops
Electrical endurance	See "contact rating"

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

### CHARACTERISTICS

Insulation resistance		1000MΩ(500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1500VAC 1min
	Between contact sets	4000VAC 1min
Creepage distance		>8mm
Operate time		≤10ms
Release time		≤10ms
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 ~ 85°C
Termination		PCB
Unit weight		Approx. 12.5g
Construction		Plastic sealed,Flux proofed

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

2)The cross-sectional area of cable(copper wire) in actual application shall be more than 6mm<sup>2</sup>.

### COIL

Rated power	Single coil latching:Approx.1.5W Double coils latching: Approx.3.0W
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### 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±10%) Ω
3	≤2.4	≥50	6
5	≤4.0	≥50	16.7
6	≤4.8	≥50	24
9	≤7.2	≥50	54
12	≤9.6	≥50	96
24	≤19.2	≥50	384
48	≤38.4	≥50	1536

#### Double coils latching

Nominal Voltage VDC	Set / Reset Voltage <sup>1)2)</sup> VDC	Pulse Duration ms	Coil Resistance x (1±10%) Ω
3	≤2.4	≥50	3+3
5	≤4.0	≥50	8.3+8.3
6	≤4.8	≥50	12+12
9	≤7.2	≥50	27+27
12	≤9.6	≥50	48+48
24	≤19.2	≥50	192+192
48	≤38.4	≥50	768+768

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、ISO/TS16949、ISO14001、OHSAS18001、IECQ QC 080000 CERTIFIED

2023 Rev.1.00

## ORDERING INFORMATION

Type	HFE39-40	/12	-2D	S	T	-L1	-R	(XXX)
Coil voltage	3,5,6,9,12,24,48 VDC							
Contact arrangement	2D:2 Form B 2H: 2 Form A							
Construction <sup>1)</sup>	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>2)</sup>	XXX: Customer special requirement (A81): Switching without load							

Notes: 1) 2H means that relay is on the "reset" status when delivery; 2D means that relay is on the "set" status when delivery. If no special required by customer, we will keep the relay on the "set" status when delivery.

2) If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.

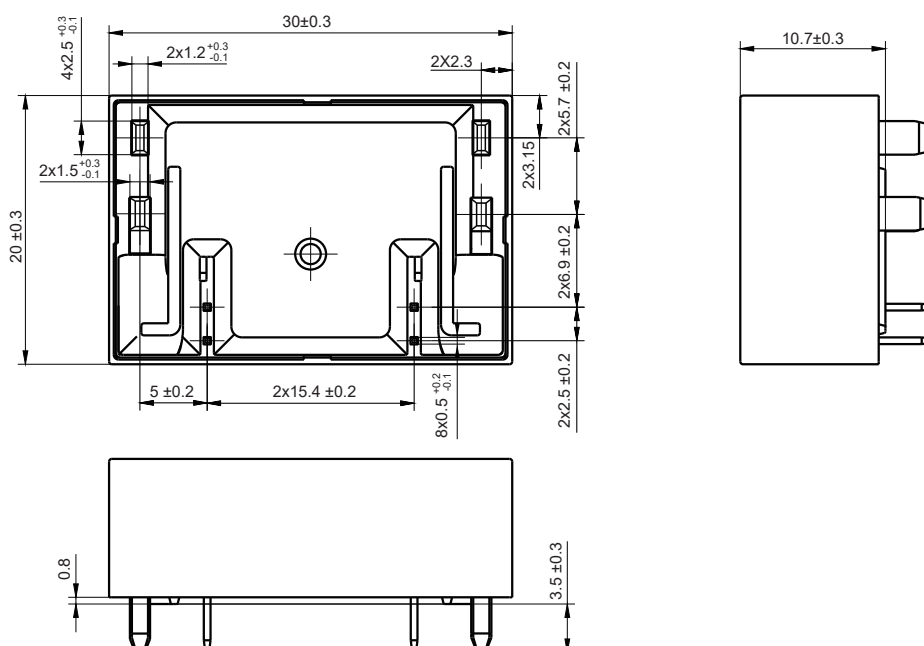
3) The customer special requirement express as special code after evaluating by Hongfa.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

### Outline Dimensions

HFE39-40



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 dimension is for reference only. Please contact us to determine the suitable dimension if any special requirement.

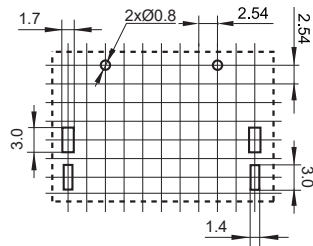
# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

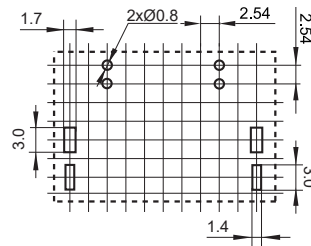
## PCB Layout

(Bottom view)

Single coil latching, 2 Form A, 2 Form B



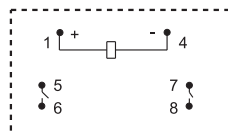
Double coils latching, 2 Form A, 2 Form B



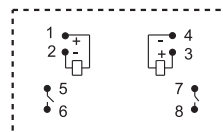
## Wiring Diagram

(Bottom view)

Single coil latching



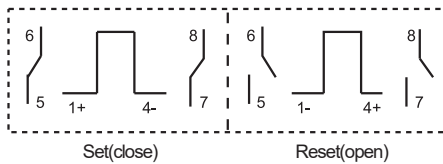
Double coils latching



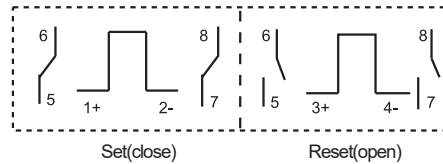
## 2 Form A

### Standard polarity

Single coil latching

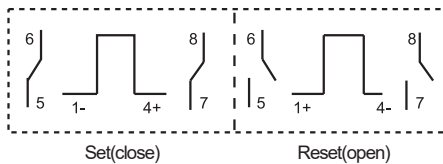


Double coils latching

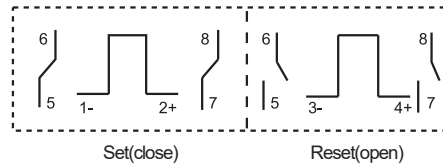


### Reverse polarity

Single coil latching



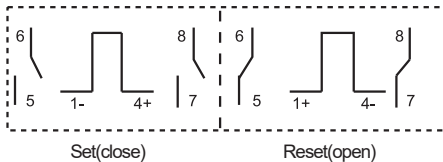
Double coils latching



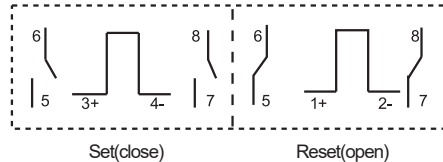
## 2 Form B

### Standard polarity

Single coil latching

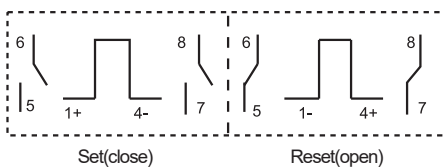


Double coils latching

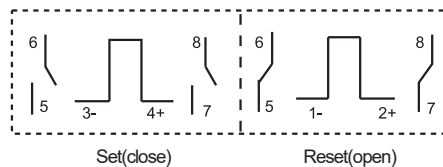


### Reverse polarity

Single coil latching



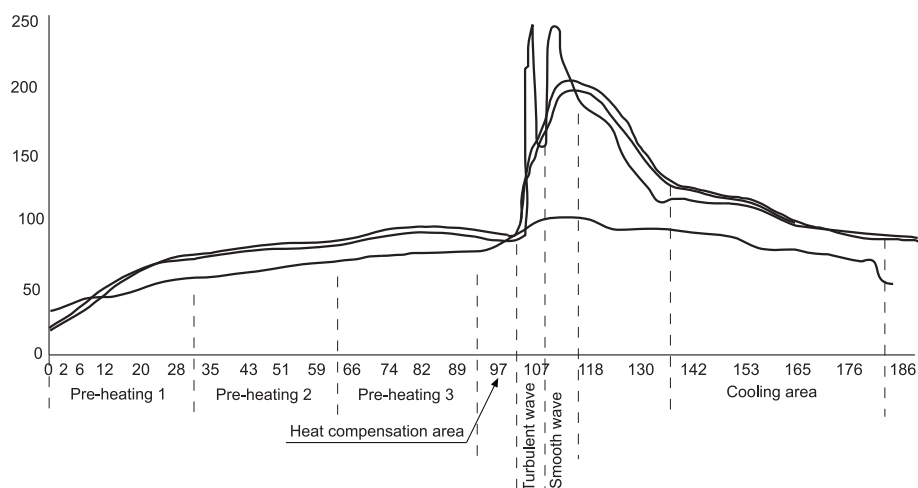
Double coils latching



## CAUTIONS

1. The recommended soldering temperature range is  $250\pm 10^{\circ}\text{C}$  with the duration of 2~5s. 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.
2. 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.
3. 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.

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.