

# HFE19-60

# MINIATURE HIGH POWER LATCHING RELAY



## Features

- 60A Latching relay
- Electrical endurance 5000ops
- According to IEC62055-31:UC1
- Contact resistance  $\leq 1\text{m}\Omega$
- Outline Dimensions: 38.0mm x 30.0mm x 16.5mm

## CONTACT DATA

Contact arrangement	1A, 1B
Contact resistance 1)	1m $\Omega$ max.(at 1A 24VDC) <sup>2)</sup>
Contact material	AgSnO <sub>2</sub>
Contact rating	60A 220VAC
Max. switching voltage	253VAC
Max. switching current	60A
Rated switching power	13200VA
Mechanical endurance	Meter: 1 x 10 <sup>5</sup> ops
Electrical endurance	Meter: 5000 OPS (60A 250VAC, Resistive load, Room temp., 0.6s on 5.4s off)

**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 continous measurements for each sample.

## CHARACTERISTICS

Insulation resistance	1000M $\Omega$ (at 500VDC)	
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1500VAC 1min
Creepage distance	8mm	
Set time (at nomi. volt.)	20ms max.	
Reset time (at nomi. volt.)	20ms 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 70°C	
Termination	Coil termination	PCB&QC
	Load termination	QC
Unit weight	Approx. 50g	
Construction	Dust protected	

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

## COIL

Coil power	Single coil latching: Approx. 1.0 W
	Double coils latching: Approx. 2.0 W

## COIL DATA

at 23°C

### Single coil latching

Nominal Voltage VDC	Set / Reset Voltage VDC max. 1)	Pulse Duration (Recommended) ms	Coil Resistance x (1 $\pm$ 10%) $\Omega$
9	$\leq 6.3$	50~100	80
12	$\leq 8.4$	50~100	145
24	$\leq 16.8$	50~100	575
48	$\leq 33.6$	50~100	2270

### Double coils latching

Nominal Voltage VDC	Set / Reset Voltage VDC max. 1)	Pulse Duration (Recommended) ms.	Coil Resistance x (1 $\pm$ 10%) $\Omega$
9	$\leq 6.3$	50~100	40+40
12	$\leq 8.4$	50~100	72+72
24	$\leq 16.8$	50~100	285+285
48	$\leq 33.6$	50~100	1135+1135

**Notes:**1) The data shown above are initial values ; recommended driving voltage is 1~1.5times of rated voltage.



HONGFA RELAY

ISO9001, ISO/TS16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

2018 Rev. 1.00

## ORDERING INFORMATION

Type	HFE19	-60/	12	D	T	2	1	-R	(XXX)
Contact rating	60: 60A								
Coil voltage	9, 12, 24, 48VDC								
Contact form <sup>1)</sup>	D: 1 Form B    H: 1 Form A								
Contact material	T: AgSnO <sub>2</sub>								
Coil angle form	2: Distance 5mm; No bowleg 4: Distance 5mm; L-bowleg								
Sort	1: Single coil latching    2: Double coils latching								
Polarity	R: Negative polarity    Nil: Positive polarity								
Special code <sup>3)</sup>	XXX: Customer special requirement    Nil: Standard								

Notes: 1) H means that relay is on the "reset" status when delivery; D 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) we can make special design according to customer's requirement.

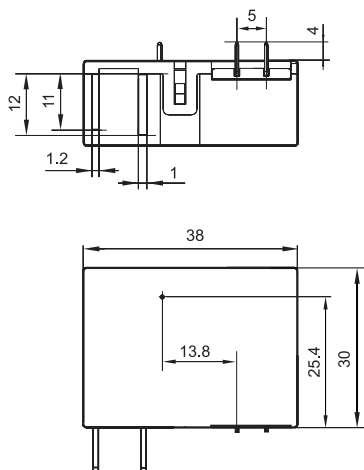
3) The customer special requirement express as special code after evaluating by Hongfa.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

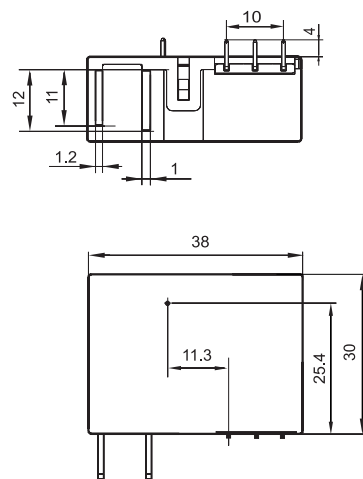
Unit: mm

### Outline Dimensions

1 coil latching



2 coils latching



Remark: 1) 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.

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

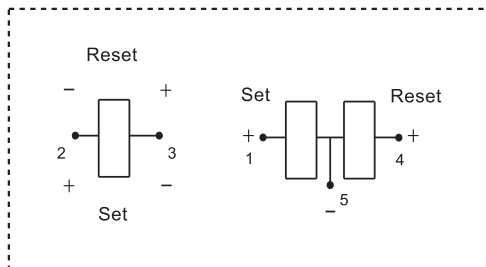
PCB Layout (Bottom view)



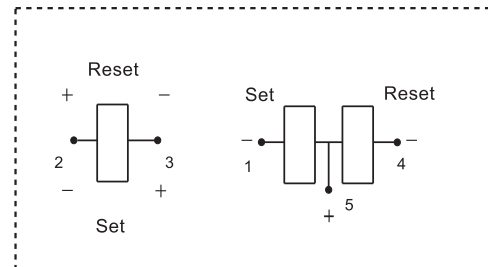
Wiring Diagram (Bottom view)



Positive polarity



Negative polarity



**Notice:**

1. Relay is on the "reset" or "set" 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. Do not energize voltage to "set" coil and "reset" coil simultaneously. And also long energized time (more than 1 min) should be avoided.
3. Normally the load terminals are not suitable for reflow solder, wave solder or tin solder, we suggest use spot welding. Load terminals shall be prevented from assembly stress, or freely move.
4. Relays used for metering measuring applications are usually made with dust proof structure, while most relays could be made specially per customer's specific requirements. No longer than 6 months' storage time is recommended for this kind of relay, and please pay attention to the storage environment. To ensure contact reliability, we will keep contact status be closed when delivery if no special required by customer.

**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.