

# HFE33

## SUBMINIATURE INTERMEDIATE POWER RELAY



### Features

- Latching relay
- 2A switching capacity
- Specific for meter application
- 2.5kV dielectric strength (between open contacts)
- 4kV dielectric strength (between coil & contacts)
- Contact gap more than 1.2mm available

**RoHS compliant**

### CONTACT DATA

Contact arrangement	2A, 2B
Contact resistance 1)	50mΩ max.(at 1A 6VDC)
Contact material	AgNi
Contact rating (Res. load)	2A 250VAC
Max. switching Voltage	440VAC
Max. switching current	2A
Max. switching power	500VA
Mechanical endurance	1 x 10 <sup>6</sup> OPS
Electrical endurance	4 x 10 <sup>4</sup> OPS (2A 250VAC, Resistive load, Room temp., 1.5s on 1.5s 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	2500VAC 1min
Electrical distance		3.2mm
Set time (at nomi. volt.)		≤20ms
Reset time (at nomi. volt.)		≤20ms
Shock Resistance	Functional	196m/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	Coil termination	PCB
	Load termination	PCB
Unit weight		Approx.7g
Construction		Flux proofed

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

### COIL

Rated power	Single coils latching: Approx. 360mW
	Double coils latching: Approx. 720mW

### COIL DATA

at 23°C

Nominal Voltage VDC	Set / Reset Voltage VDC 1)2) max.	Pulse Duration ms min.	Coil Resistance x (1±10%)Ω	
3	2.4	50	Single coil latching	25
5	4.0	50		69.4
6	4.8	50		100
9	7.2	50		225
12	9.6	50		400
24	19.2	50		1600
3	2.4	50	Double coils latching	12.5+12.5
5	4.0	50		34.7+34.7
6	4.8	50		50+50
9	7.2	50		112.5+112.5
12	9.6	50		200+200
24	19.2	50		800+800

**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, OHSAS18001, IECQ QC 080000 CERTIFIED

2021 Rev.1.00

## ORDERING INFORMATION

Type	HFE33	/ 12	-2H	S	-L2	-R	(XXX)
Coil voltage	3, 5, 6, 9, 12, 24VDC						
Contact arrangement <sup>1)</sup>	2H: 2 Form A    2D: 2 Form B						
Construction <sup>2)</sup>	S: Plastic sealed    Nil: Flux proofed						
Coil type	L1: Single coil latching    L2: Double coils latching						
Polarity	R: Reverse polarity    Nil: Standard polarity						
Special code <sup>3)</sup>	XXX: Customer special requirement						

**Notes:** 1) 2H means that relay is on the "reset" status when delivery; 2D means that relay is on the "set" status when delivery.

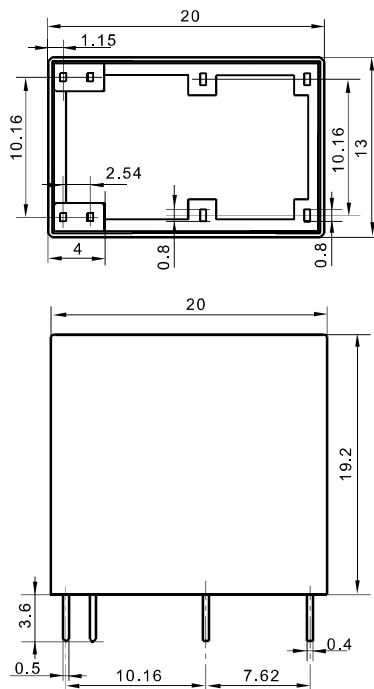
2) Under the ambience with harmful gas like H<sub>2</sub>S, SO<sub>2</sub> or NO<sub>2</sub>, plastic sealed type is recommended; Please test the relay in actual applications. If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts. If the ambience allows, flux proofed type is preferentially recommended.

3) The customer special requirement express as special code after evaluating by Hongfa, e.g. (317): Specific for meter application.

## OUTLINE DIMENSIONS AND WIRING DIAGRAM

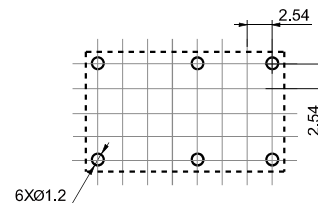
Unit: mm

Outline Dimensions

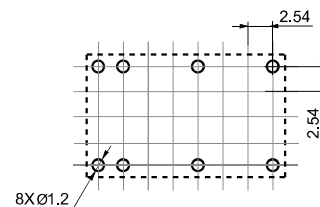


PCB Layout (Bottom view)

Single coil latching  
2 Form A, 2 Form B



Double coils latching  
2 Form A, 2 Form B



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.

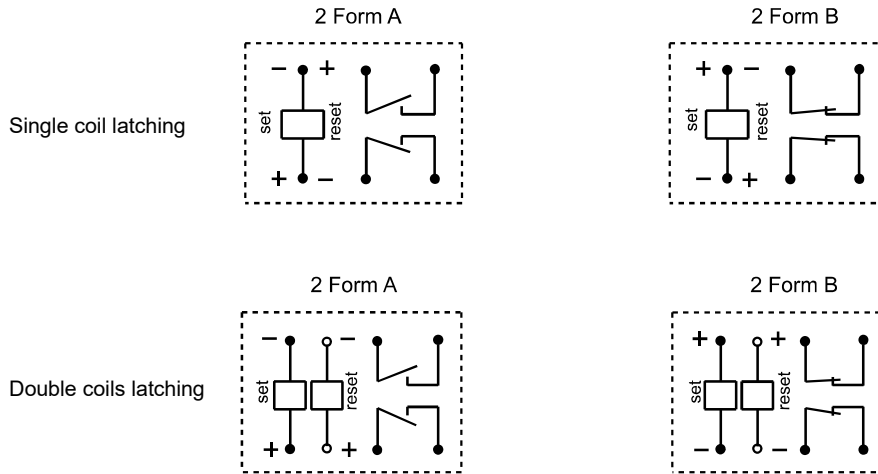
3) The width of the gridding is 2.54mm.

## OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

### Wiring Diagram

Standard polarity

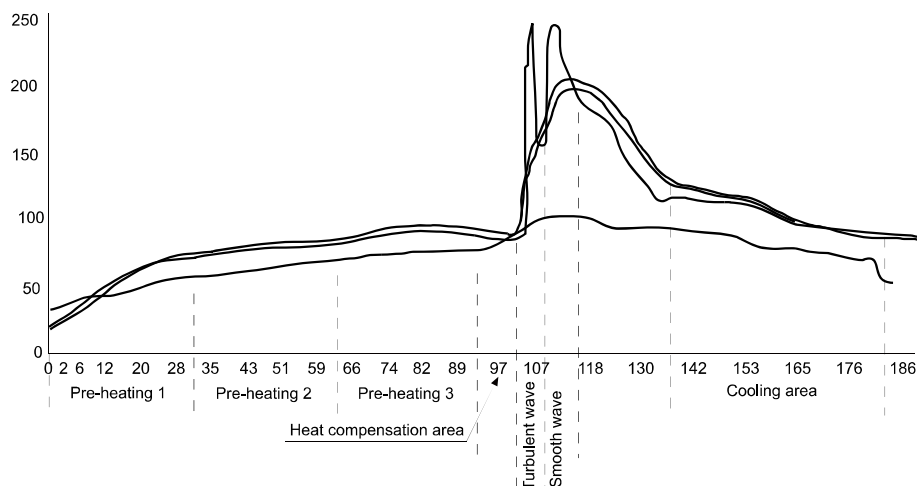


Remark: The coil polarity of reverse polarity and standard polarity is opposite.

## 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. 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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