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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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# HFE20

# MINIATURE HIGH POWER LATCHING RELAY

**US**  
File No.:E134517



## Features

- 16A switching capability
- Latching relay
- Capacitor load up to 200uF  
(Min. inrush current at 500A/10μs)
- Min. inrush current Capacitor 170A(1A,1C)
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (29.0 x 13.0 x 15.7)mm

## CONTACT DATA

Contact arrangement	1A, 1B, 1C
Contact resistance	50mΩ (at 1A 24VDC)
Contact material	AgSnO <sub>2</sub> , W+AgSnO <sub>2</sub>
Contact rating	1A,1B: 16A 250VAC, 1 x 10 <sup>5</sup> OPS(Resistive) 20A 250VAC, 3 x 10 <sup>4</sup> OPS(Resistive) 1.5HP 240VAC(Motor) 8A 220VAC COSØ=0.4, 1x10 <sup>5</sup> OPS(Inductive) HFE20-1/X-1HXD: 3000W 220VAC, 1.5 x 10 <sup>4</sup> OPS (Incandescent & fluorescent lamp) 1C: 16A 250VAC, 5 x 10 <sup>4</sup> OPS
Max. switching voltage	277VAC
Max. switching current	16A
Max. switching power	5000VA
Mechanical endurance	3 x 10 <sup>6</sup> OPS
Electrical endurance	See "Contact rating"

## CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	4400VAC 1min
	Between open contacts	1000VAC 1min
Creepage distance	8mm	
Operate time (at nomi. volt.)	15ms max.	
Release time (at nomi. volt.)	15msmax.	
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, 40°C	
Ambient temperature	PCB	
Termination	-40°C to 85°C	
Unit weight	Approx. 13g	
Construction	Plastic sealed, Flux proofed	

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

## COIL

Coil power | 1 coil latching: 400mW; 2 coils latching: 600mW

## COIL DATA

at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC	Coil Resistance x (1±10%) Ω	
3	2.4	1 coil latching	22.5
5	4.0		62.5
6	4.8		90
12	9.6		360
24	19.2		1440
3	2.4	2 coils latching	15+15
5	4.0		42+42
6	4.8		60+60
12	9.6		240+240
24	19.2		886+886



HONGFA RELAY

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

2010 Rev. 1.31

## ORDERING INFORMATION

Type	HFE20 - 3 /12 -1Z S T -L2 -R (XXX)						
Version	1: 5mm pin 2: 3.5mm pin 3: 2.5mm pin						
Coil voltage	3, 5, 6, 12, 24 VDC						
Contact form <sup>1)</sup>	1H: 1 Form A    1D: 1 Form B						
	1Z: 1 Form C (Only for HFE20-1, HFE20-2)						
Construction <sup>2)</sup>	S: Plastic sealed    Nil: Flux proofed						
Contact material	T: AgSnO <sub>2</sub> D: W+AgSnO <sub>2</sub> (Only for HFE20-1/XX-1H)		Nil:AgNi				
Sort	L1: 1 coil latching		L2: 2 coils latching				
Polarity	R: Reverse polarity		Nil: Positive polarity				
Customer special code							

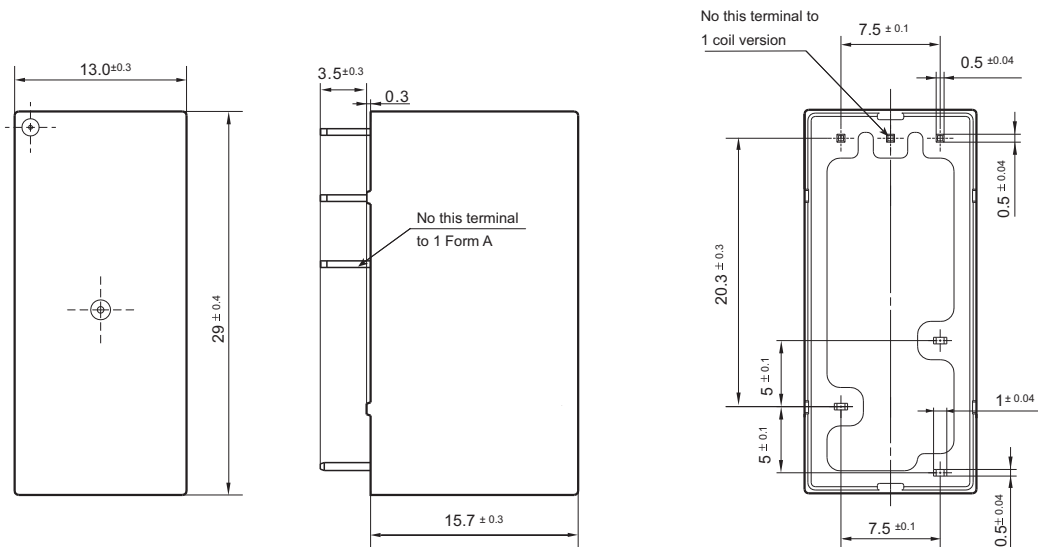
**Notes:** 1) H means that relay is on the "reset" status when delivery; D means that relay is on the "set" status when delivery  
2) If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.

## OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

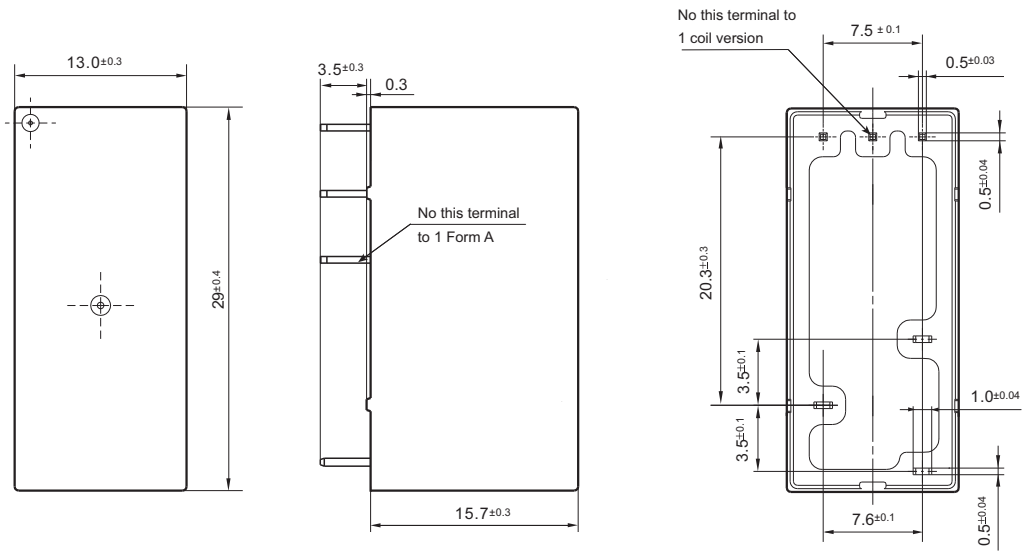
### Outline Dimensions

#### HFE20-1

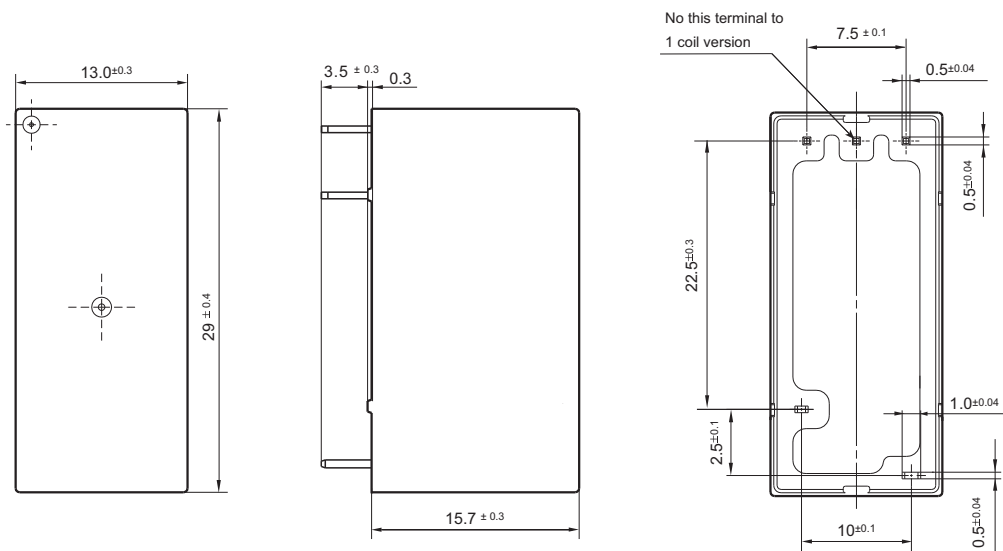


Outline Dimensions

HFE20-2

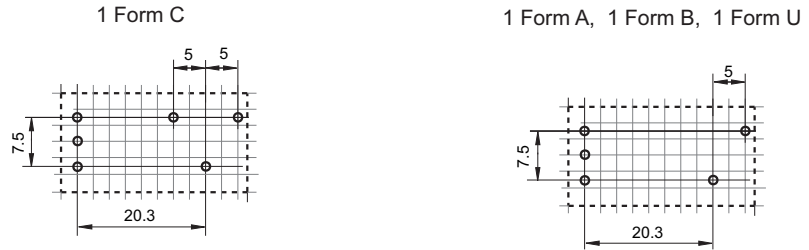


HFE20-3

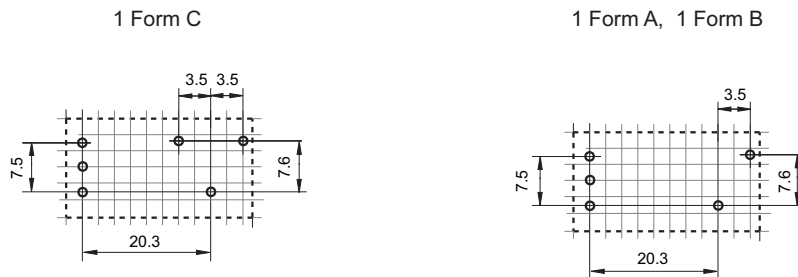


PCB Layout (Bottom view)

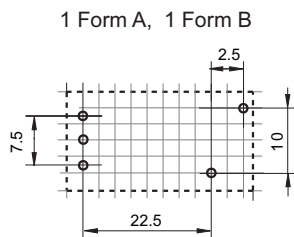
HFE20-1



HFE20-2



HFE20-3



Wiring Diagram (Bottom view)

HFE20-3



Positive polarity

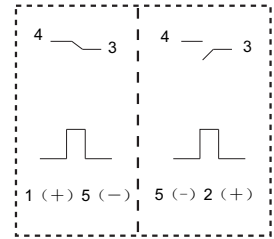
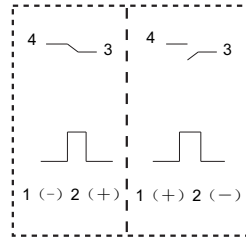
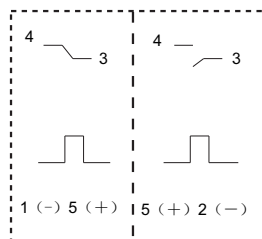
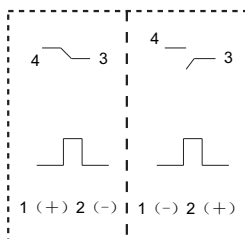
Reverse polarity

1 coil latching, 1 Form A

2 coils latching, 1 Form A

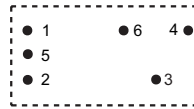
1 coil latching, 1 Form C

2 coils latching, 1 Form C



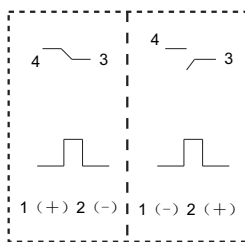
Wiring Diagram (Bottom view)

HFE20-1  
HFE20-2

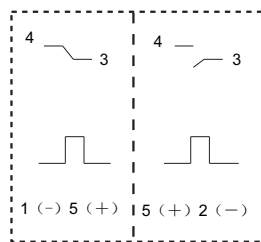


Positive polarity

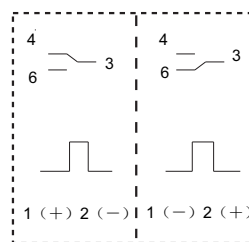
1 coil latching, 1 Form A



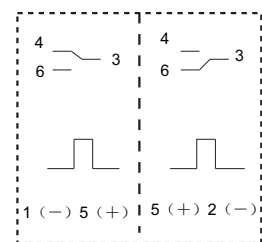
2 coils latching, 1 Form A



1 coil latching, 1 Form C

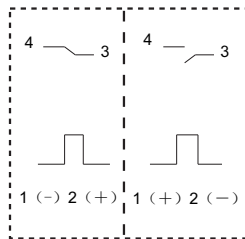


2 coils latching, 1 Form C

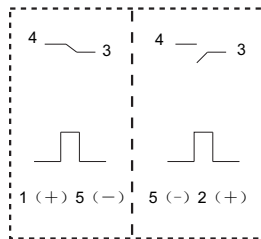


Reverse polarity

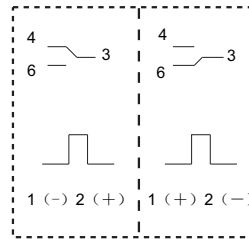
1 coil latching, 1 Form A



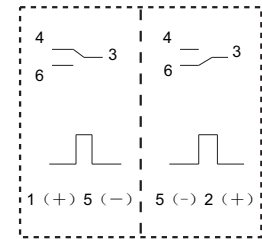
2 coils latching, 1 Form A



1 coil latching, 1 Form C



2 coils latching, 1 Form C



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. In order to maintain "set" or "reset" status, energized voltage to 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. In order to avoid changing operate voltage, products should not be kept in strong magnetic field during transportation, storage and application.

Disclaimer

This datasheet is for the customers' reference. All the specifications are 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.