HFE39 MINIATURE HIGH POWER LATCHING RELAY



Features

- 16A switching capability
- Latching relay
- Max.inrush current 350A/2ms
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (20.0 x 30.0 x 10.2)mm

CONTACT DATA

Contact arrangement		2A,2B,1A+1B
Contact resistance		20mΩ max. (at 1A 24VDC)
Contact material		$AgSnO_2$
Contact rating	2A 2B	16A 250VAC, 1 x 10^5 ops (Resistance) 20A 250VAC, 5 x 10^4 ops (Resistance) 1.5HP 250VAC 5 x 10^4 ops (Motor) 10A 277VAC 2 x 10^4 ops (Electronic ballast) 10A 277VAC, 3 x 10^4 ops (Standard ballast) 10A 240VAC, 2.5 x 10^4 ops (TV-10)
	1A+1B	16A 250VAC, 5 x 10^4 ops (Resistance)
Max. switching voltage		277VAC
Max. switching current		20A
Max. switching power		4000VA
Mechanical endurance		1 x 10^6OPS
Electrical endurance		See "Contact rating"

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1000VAC 1min
Creepage distance		8mm min.
Operate time (at nomi. volt.)		15ms max.
Reset time (at nomi. volt.)		15ms max.
Shock resistance	Functional	98m/s^2
	Destructive	980m/s^2
Vibration resistance		10Hz to 55Hz 1.5mm DA
Humidity		5% to 85% RH
Ambient temperature		-40˚C to 85˚C
Termination		PCB
Unit weight		Approx.12g
Construction		Plastic sealed, Flux proofed

Notes: The data shown above are initial values.

COIL

Coil power	Standard: Single coil latching: Approx 1W Double coils latching: Approx 2W
	Sensitive: Single coil latching: Approx 0.6W Double coils latching: Approx 1.2W

COIL DATA at 23˚C

Standard type:

Nominal Voltage VDC	Set / Reset Voltage VDC max.	Pulse Duration ms min.	Coil Resistance x (1±10%) Ω	
3	2.1	50	Single coil latching	9
5	3.5	50		25
6	4.2	50		36
9	6.3	50		81
12	8.4	50		144
24	16.8	50		576
48	33.6	50		2304
3	2.1	50	Double coils latching	4.5+4.5
5	3.5	50		12.5+12.5
6	4.2	50		18+18
9	6.3	50		40.5+40.5
12	8.4	50		72+72
24	16.8	50		288+288
48	33.6	50		1152+1152

SAFETY APPROVAL RATINGS

UL/CUL	2A,2B (Only for standard type)	16A 250VAC 85˚C Resistance 1.5HP 250VAC 40˚C Motor 277VAC 10A 40˚C Standard ballast 277VAC 10A 40˚C Electronic ballast 240VAC 10A 40˚C TV-10

Notes: 1) All values unspecified are at room temperature.
2) Only typical loads are listed above. Other load specifications can be available upon request.

COIL DATA

at 23°C

Sensitive type:

Nominal Voltage VDC	Set / Reset Voltage VDC max.	Pulse Duration ms min.	Coil Resistance x (1±10%) Ω	
3	2.1	50	Single coil latching	15
5	3.5	50		42
6	4.2	50		60
9	6.3	50		135
12	8.4	50		240
24	16.8	50		960
3	2.1	50	Double coils latching	7.5+7.5
5	3.5	50		21+21
6	4.2	50		30+30
9	6.3	50		67.5+67.5
12	8.4	50		120+120
24	16.8	50		480+480

ORDERING INFORMATION

	HFE39	-1	/12	-2D	S	L	T	-L1	-R	(XXX)
Type										
Version	1: with manual switch Nil: No manual switch									
Coil voltage	3, 5, 6, 9,12, 24VDC 48 VDC(Only for standard type)									
Contact form [1]	**1HD:** 1 Form A + **1** Form B **2D:** 2 Form B **2H:** 2 Form A									
Construction [2]	**S:** Plastic sealed(No for HFE39-1) **Nil:** Flux proofed									
Coil power	**L:** Sensitive **Nil:** Standard									
Contact material	**T:** AgSnO2									
Sort	**L1:** Single coil latching **L2:** Double coils latching									
Polarity	**R:** Reverse polarity **Nil:** Positive polarity									
Special code [3]	**XXX:** Customer special requirement **Nil:** Standard									

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 speical required by customer,we will keep the relay on the "set" status when delivery.

2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.

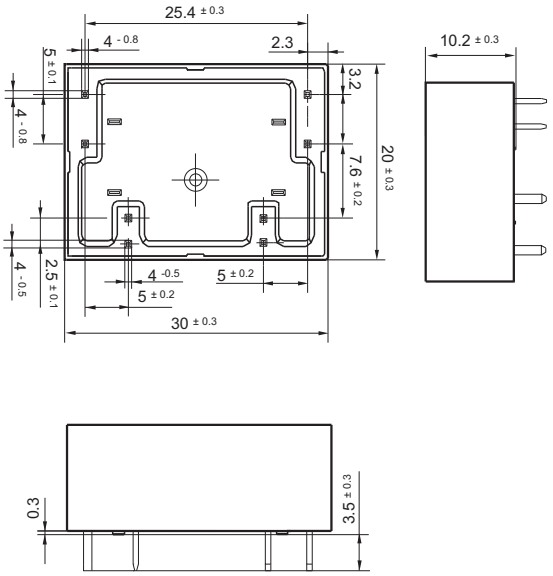
3) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS AND WIRING DIAGRAM

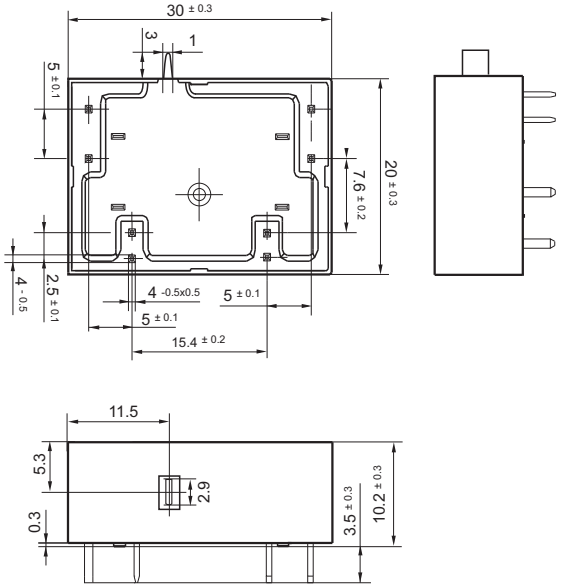
Unit: mm

Outline Dimensions

HFE39

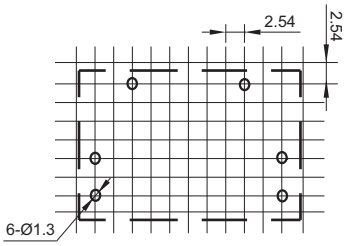


HFE39-1

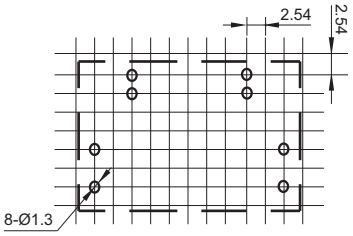


PCB Layout (Bottom view)

Single coil latching,
2 Form A, 2 Form B, 1A+1B

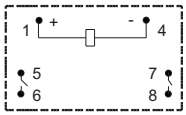


Double coils latching,
2 Form A, 2 Form B, 1A+1B

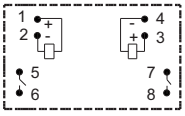


Wiring Diagram (Bottom view)

Single coil latching



Double coils latching



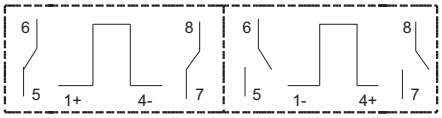
OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

2 Form A

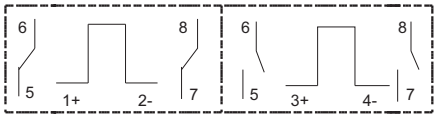
Positive polarity

Single coil latching



set reset

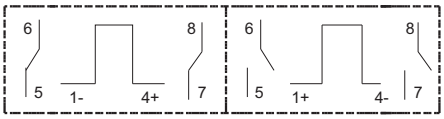
Double coils latching



set reset

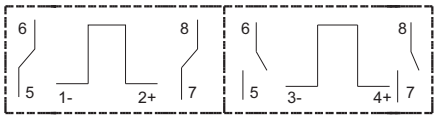
Reverse polarity

Single coil latching



set reset

Double coils latching

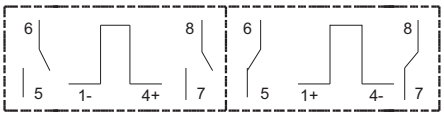


set reset

2 Form B

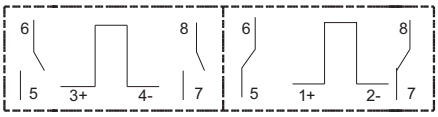
Positive polarity

Single coil latching



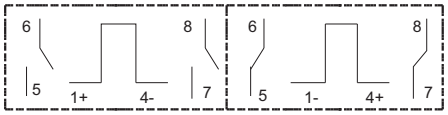
set reset

Double coils latching



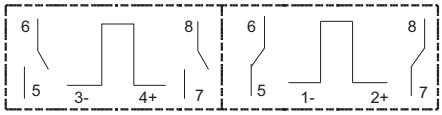
set reset

Single coil latching



set reset

Double coils latching

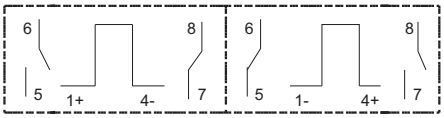


set reset

1 Form A + 1 Form B

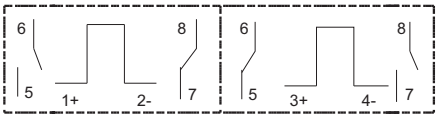
Positive polarity

Single coil latching



set reset

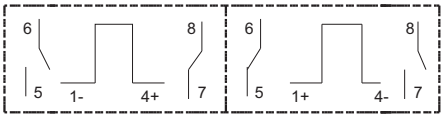
Double coils latching



set reset

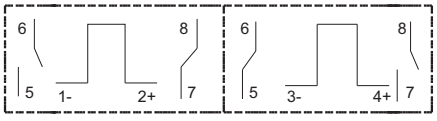
Reverse polarity

Single coil latching



set reset

Double coils latching



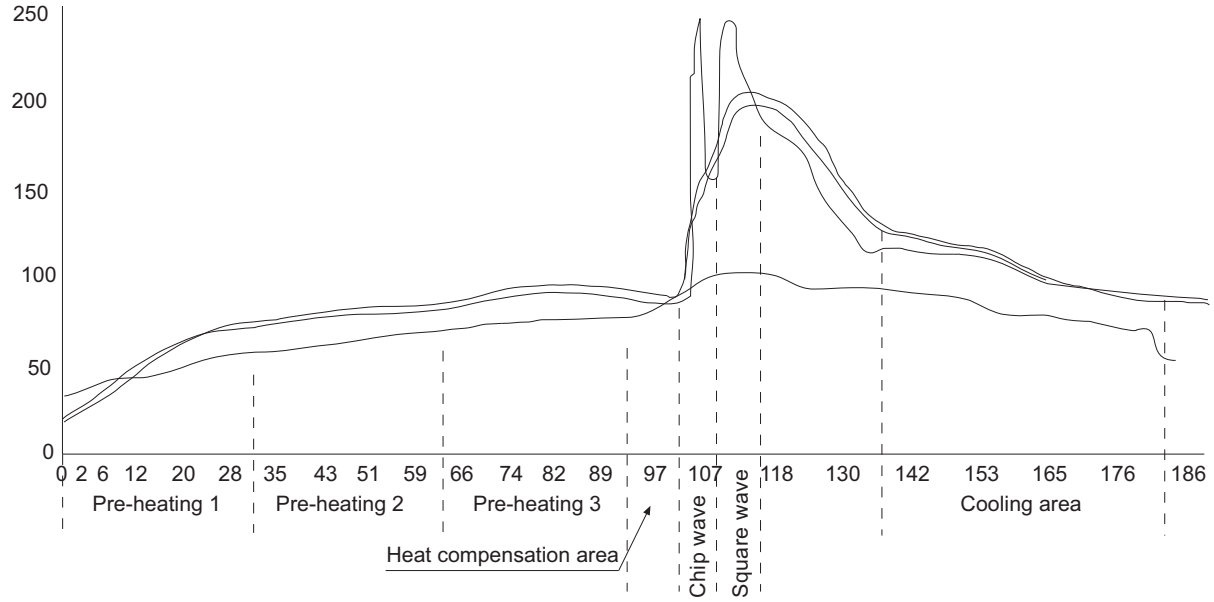
set reset

OUTLINE DIMENSIONS AND WIRING DIAGRAM

Unit: mm

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. When choose the relay with PCB termination, the recommended welding temperature range and duration is 240°C~260°C, 2s~5s; Please do not use the reflow welding method, if the reflow is really required, please contact our technicals; the normal recommeded wave soldering temperature is 250°C within 2s; the below chart is the wave soldering temperature distribution chart we recommended for your reference.
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.



wave soldering temperature distribution chart

Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. 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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