

HFE39

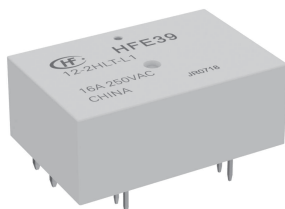
MINIATURE HIGH POWER LATCHING RELAY



File No.:E134517



File No.:40049970



Features

- 20A switching capability
- Latching relay
- Max.inrush current 350A/2ms

CONTACT DATA

Contact arrangement	2A, 2B, 1A+1B	
Contact resistance 1)	20mΩ max. (at 1A 24VDC)	
Contact material	AgSnO ₂	
Contact rating	2A	16A 250VAC, 1 x 10 ⁵ ops (Resistance) 20A 250VAC, 1 x 10 ⁵ ops (Resistance) ²⁾ 1.5HP 250VAC 5 x 10 ⁴ ops (Motor)
	2B	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 ⁶ ops	
Electrical endurance	See "Contact rating"	

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

2) A special suffix (530) will be required to follow at the end of relay partnumber,when the electrical life requirement up to 1 x 10⁵ cycles at 20A 250VAC resistive load.

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

SAFETY APPROVAL RATINGS

UL/CUL (Only for standard type)	2A, 2B	20A 250VAC Resistance at 85°C 1.5HP 250VAC Motor at 40°C
		277VAC 10A Standard ballast at 40°C 277VAC 10A Electronic ballast at 40°C 240VAC 10A TV-10 at 40°C
VDE	2A, 1A+1B	16A 250VAC Resistance at 85°C 20A 250VAC Resistance

Notes: 1) All values unspecified are at room temperature.

2) Only typical loads are listed above. Other load specifications can be available upon request.

CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)	
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1000VAC 1min
Creepage distance	8mm min.	
Set 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 DATA

at 23°C

Standard type:

Nominal Voltage VDC	Set / Reset Voltage VDC 1)2) 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	Double coils latching
3	2.1	50	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	1152+1152
48	33.6	50		



HONGFA RELAY

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

COIL DATA

at 23°C

Sensitive type:

Nominal Voltage VDC	Set / Reset Voltage VDC ¹⁾²⁾ max.	Pulse Duration ms min.	Coil Resistance x (±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
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	

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

ORDERING INFORMATION

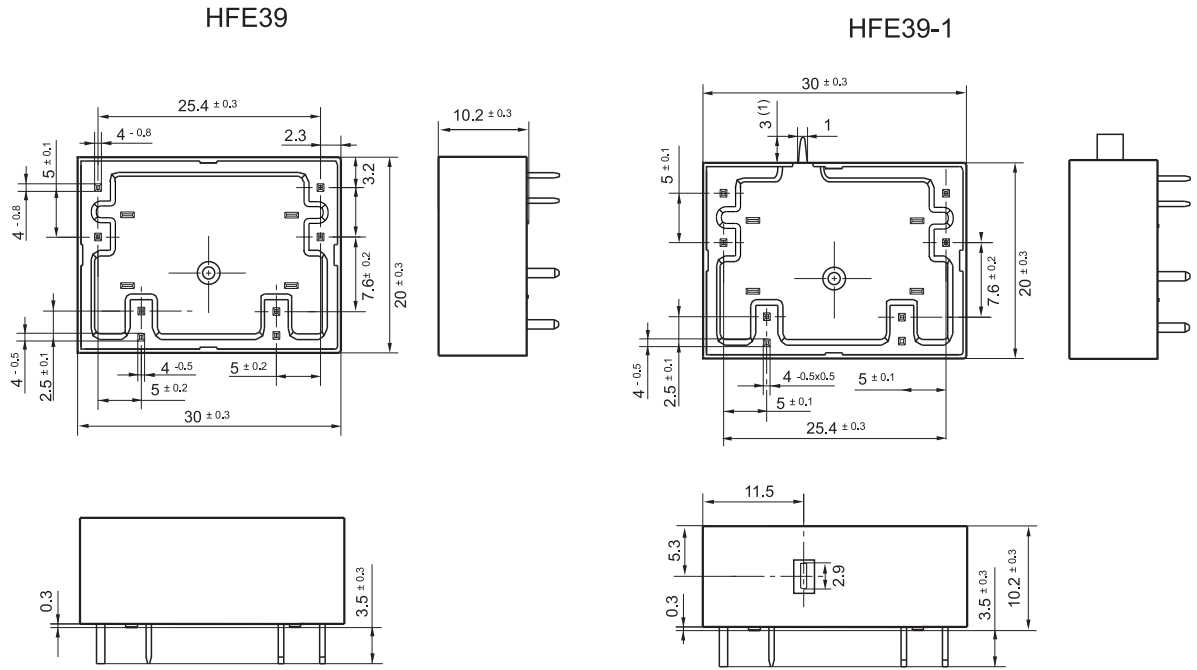
Type	HFE39 -1 /12 -2D S L T -L1 -R (XXX)	
Version	1: with manual switch Nil: No manual switch	
Coil voltage	3, 5, 6, 9, 12, 24VDC 48 VDC (Only for standard type)	
Contact form ¹⁾	1HD: 1 Form A + 1 Form B 2D: 2 Form B 2H: 2 Form A	
Construction ²⁾	S: Plastic sealed (No for HFE39-1) Nil: Flux proofed	
Coil power	L: Sensitive Nil: Standard	
Contact material	T: AgSnO ₂	
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 special required by customer, we will keep the relay on the "set" status when delivery.

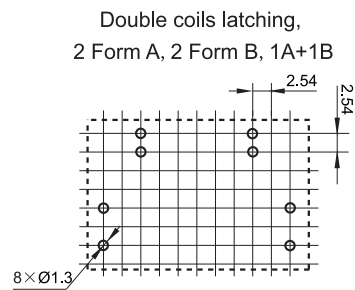
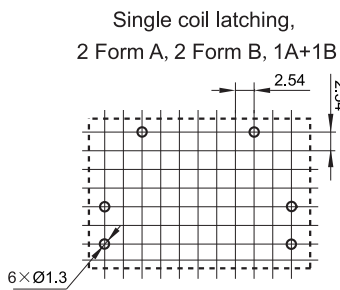
2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relay on PCB.

3) Customer's special technical requirements to be evaluated by Hongfa, and differentiated by the special code suffix. For example, suffix (170) is for flash light load; (530) is for electrical life requirement up to 1 x 10⁵ cycles at 20A 250VAC resistive load.

Outline Dimensions



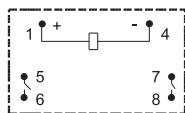
PCB Layout (Bottom view)



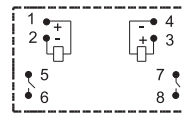
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$; outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 5\text{mm}$, tolerance should be $\pm 0.4\text{mm}$.
2) This size for reference only. Contact is recommended for suitable specifications if you have any special requirements.

Wiring Diagram (Bottom view)

Single coil latching



Double coils latching

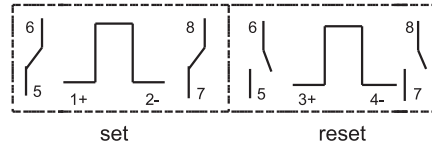
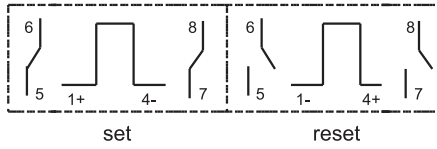


2 Form A

Positive polarity

Single coil latching

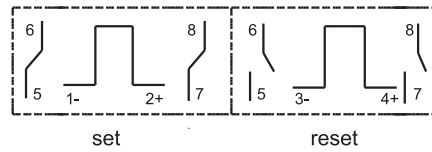
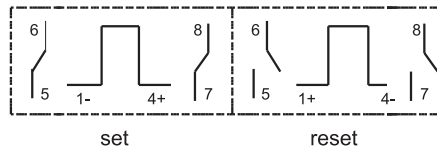
Double coils latching



Reverse polarity

Single coil latching

Double coils latching

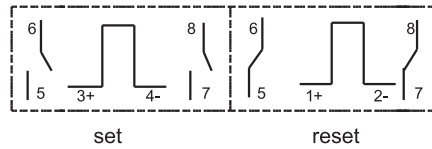
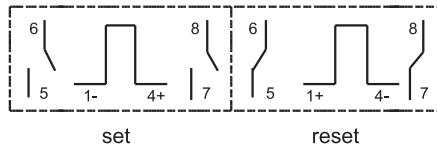


2 Form B

Positive polarity

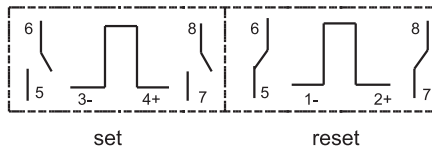
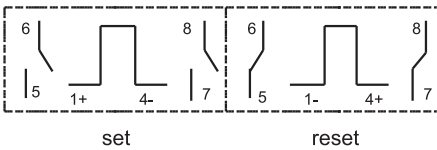
Single coil latching

Double coils latching



Single coil latching

Double coils latching

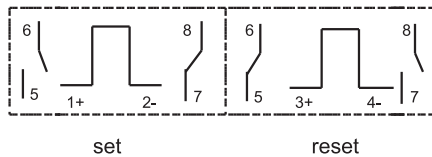
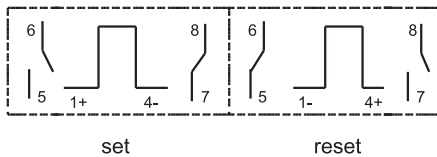


1 Form A + 1 Form B

Positive polarity

Single coil latching

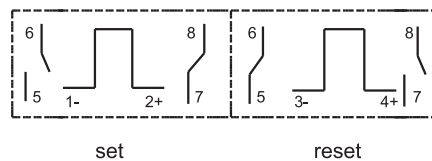
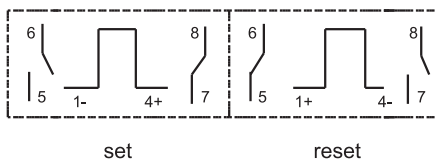
Double coils latching



Reverse polarity

Single coil latching

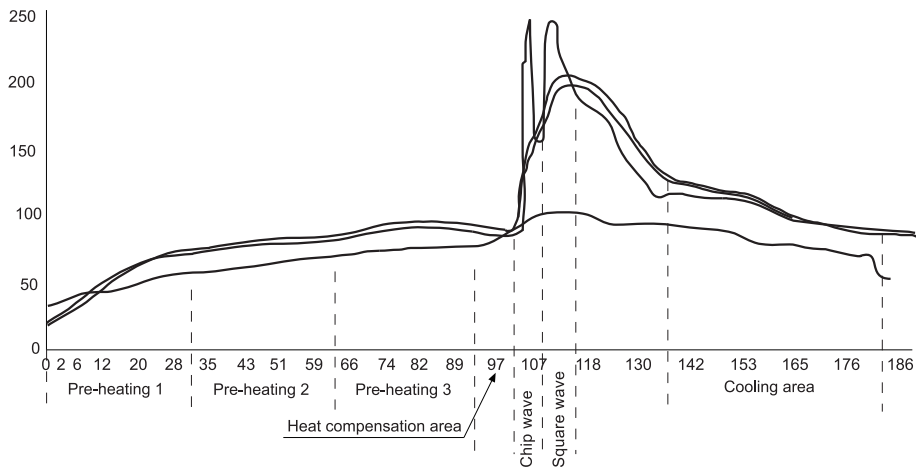
Double coils latching



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 to 260°C, 2s to 5s; Please do not use the reflow welding method, if the reflow is really required, please contact our technicals; the normal recommended 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. 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.