

HFE15L

MINIATURE HIGH POWER LATCHING RELAY



File No.: E134517



File No.: 40045248



Features

- Latching relay
- In accordance to IEC60669-2-1
- 20A switching capacity
- Lamp load capacity up to 10A
- Inrush current capacity up to 430A for 1.5ms

RoHS compliant

CONTACT DATA

Contact arrangement	1A, 1B
Contact resistance ¹⁾	20mΩ max.(at 1A 24VDC)
Contact material	AgSnO ₂
Contact rating	1A,1B:20A 250VAC, 1x10 ⁵ ops(Resistive) 25A 250VAC, 5x10 ⁴ ops(Resistive) 10A 250VAC C=140uF, 3x10 ⁴ ops(Capacitive) 10A 250VAC cosΦ=0.4, 3x10 ⁴ ops(Inductive) 20A 30VDC, 3x10 ⁴ ops(Resistive) 16A 250VAC, 1x10 ⁵ ops(AC-1) 12.5A 400VAC, 1x10 ⁵ ops(AC-1) 10A 277VAC, 6x10 ³ ops (Electronic ballast)
Max. switching voltage	440VAC
Max. switching current	25A
Max. switching power	5000VA
Max.continuous current	20A
Mechanical endurance	1 x 10 ⁶ ops
Electrical endurance	See "contact rating"

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

CHARACTERISTICS

Insulation resistance	1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts 4000VAC 1 min
	Between open contacts 1000VAC 1 min
Creepage distance	8mm
Impulse voltage	12kV min.
Operate time (at nomi. volt.)	15ms max.
Release time (at nomi. volt.)	15ms max.
Shock resistance	Functional 98m/s ²
	Destructive 980m/s ²
Vibration resistance	10Hz ~ 55Hz 1.5mm DA
Humidity	5% ~ 85% RH
Ambient temperature	-40°C ~ 85°C
Termination	PCB
Unit weight	Approx.23g

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



HONGFA RELAY

ISO9001、IATF16949、ISO14001、ISO45001、IECQ QC 080000、ISO/EC 27001

2025 Rev.1.00

COIL

Rated power	Single coil latching: Approx. 0.7W Double coils latching: Approx. 1.5W
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COIL DATA

at 23°C

Single coil latching

Nominal Voltage VDC	Set / Reset Voltage VDC ^{1) 2)} max.	Pulse Duration ms min.	Coil Resistance x (1±10%)Ω
3	≤2.4	≥50	12.5
5	≤4.0	≥50	34.5
6	≤4.8	≥50	50
9	≤7.2	≥50	112.5
12	≤9.6	≥50	200
24	≤19.2	≥50	800
32	≤25.6	≥50	1460
48	≤38.4	≥50	3200

Double coils latching

Nominal Voltage VDC	Set / Reset Voltage VDC ^{1) 2)} max.	Pulse Duration ms min.	Coil Resistance x (1±10%)Ω
3	≤2.4	≥50	6+6
5	≤4.0	≥50	17.5+17.5
6	≤4.8	≥50	25+25
9	≤7.2	≥50	54+54
12	≤9.6	≥50	100+100
24	≤19.2	≥50	400+400
32	≤25.6	≥50	680+680
48	≤38.4	≥50	1600+1600

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.

SAFETY APPROVAL RATINGS

VDE	1H,1D	Resistive:20A 250VAC Fluorescent Lamp (Without compensation):10A 250VAC Fluorescent Lamp (With parallel compensation):10A 250VAC Incandescent Lamp:2500W 250VAC
UL	1H,1D	Resistive:20A 250VAC Electronic ballast:10A 277VAC

Notes: Only typical loads are listed above.other load specifications can be available upon request.

ORDERING INFORMATION

	HFE15L	-1	/12	-1H	T	-L2	R	(XXX)
Type	HFE15L: Lamp control							
Manual switch	1: With manual switch Nil: Without manual switch							
Coil voltage	3,5,6,9,12,24,32,48 VDC							
Contact arrangement ¹⁾	1H: 1 Form A 1D: 1 Form B							
Contact material	T: AgSnO ₂							
Coil type	L1: Single coil latching				L2: Double coils latching			
Polarity	R: Reverse polarity				Nil: Standard polarity			
Special code ²⁾	XXX: Customer special requirement (A81): switching without load							

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

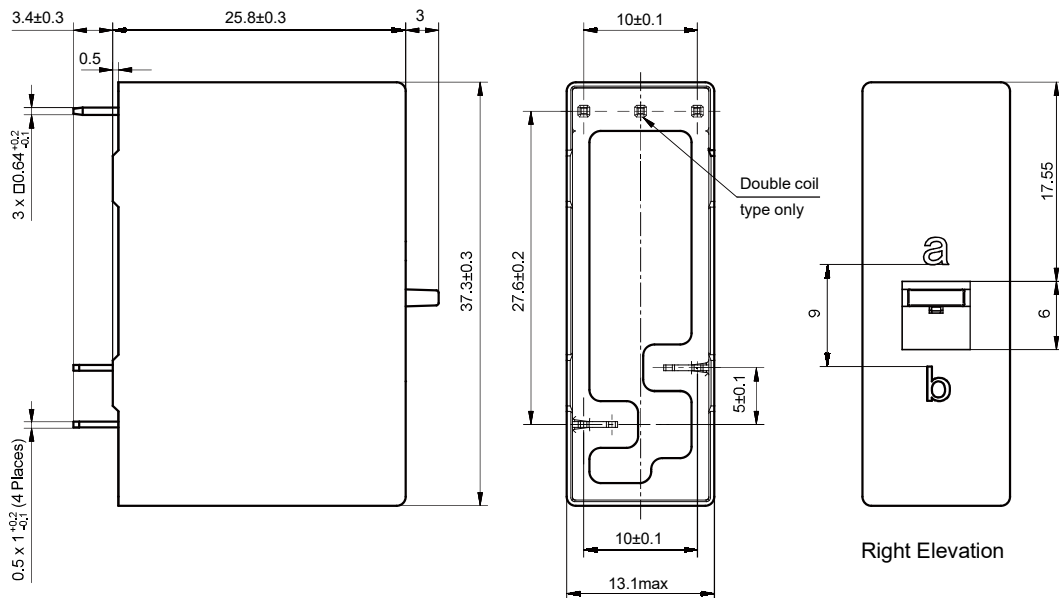
2) If water cleaning is required after the relay is assembled on PCB, please contact us for suggestion about suitable parts.

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

OUTLINE DIMENSIONS

Unit: mm

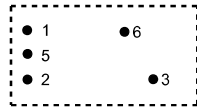
Outline Dimensions



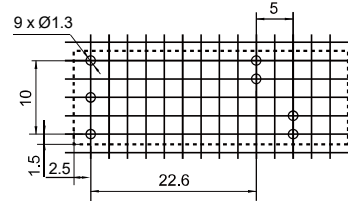
Remark:

- 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) The length of terminal does not cover the length of tin tip, which shall not exceed 0.5mm after tin dipping.
- 3) The tolerance without indicating for PCB layout is always $\pm 0.1\text{mm}$.
- 4) The width of the gridding is 2.54mm.

Wiring Diagram



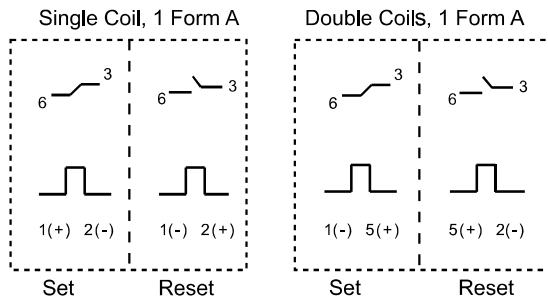
PCB Layout (Bottom view)



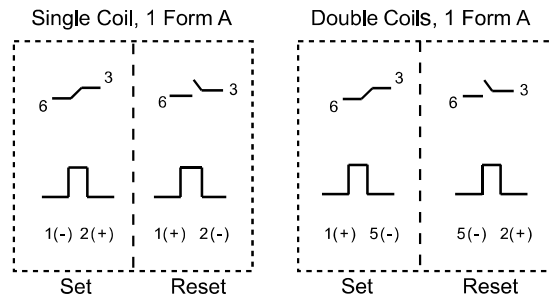
1 Form A

Contact position		
Manual switch position	(a)	(b)

Standard Polarity



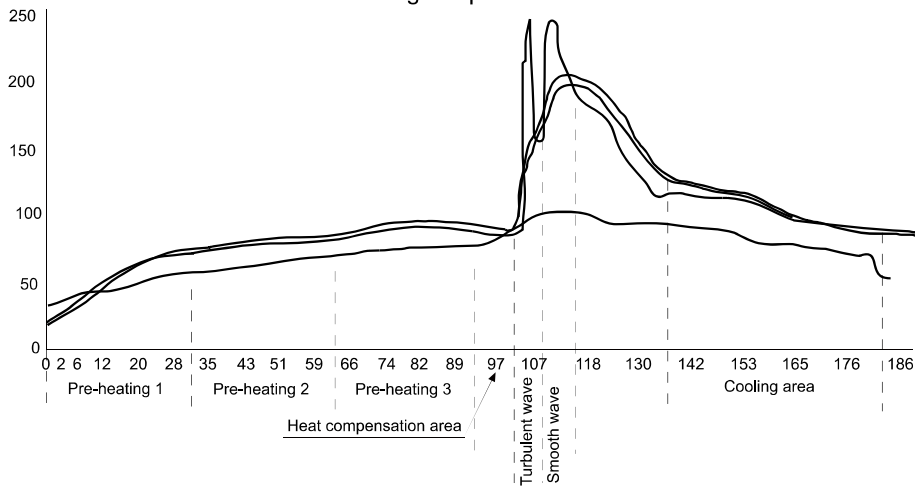
Reverse polarity



CAUTIONS

1. The recommended soldering temperature range is 250±10°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°C shall not more than 2s.
2. 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.
3. 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.

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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