

# HF163F-L SUBMINIATURE INTERMEDIATE POWER LATCHING RELAY



File No.: E133481



File No.: 40039460



## Features

- Latching relay
- Dielectric strength (between contact and coil): 5,000 V
- High switching capacity: 8A 250VAC
- Overvoltage withstand (between contact and coil): 12,000 V
- 1 Form A configuration

**RoHS compliant**

## CONTACT DATA

Contact arrangement	1A
Contact resistance <sup>1)</sup>	100mΩ max. (at 1A 6VDC)
Contact material	AgSnO <sub>2</sub>
Contact rating (Res. load)	8A 250VAC 5A 30VDC
Max. switching voltage	250VAC / 30VDC
Max. switching current	10A
Max. switching power	2500VA/150W
Mechanical endurance	1 x 10 <sup>6</sup> OPS
Electrical endurance	5 x 10 <sup>4</sup> OPS(8A 250VAC, Resistive load, at 85°C, 1s on 9s off)

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

## CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
Set time		15ms max.
Reset time		15ms max.
Shock resistance	Functional	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance		10Hz to 55Hz 2.0mm DA
Humidity		5% to 85% RH
Ambient temperature		-40°C to 85°C
Termination		PCB
Unit weight		Approx. 8g
Construction		Flux proofed

Notes: The data shown above are initial values.

## COIL

Rated power	Single coil latching	Approx. 200mW
	Double coils latching	Approx. 400mW

## COIL DATA

at 23°C

### Single coil latching

Nominal Voltage VDC	Set / Reset Voltage VDC <sup>1)2)</sup> max.	Pulse Duration ms min.	Coil Resistance x (1±10%) Ω
3	2.4	50	45
5	4.0	50	125
6	4.8	50	180
9	7.2	50	405
12	9.6	50	720
24	19.2	50	2880

### Double coils latching

Nominal Voltage VDC	Set / Reset Voltage VDC <sup>1)2)</sup> max.	Pulse Duration ms min.	Coil Resistance x (1±10%) Ω
3	2.4	50	22.5+22.5
5	4.0	50	62.5+62.5
6	4.8	50	90+90
9	7.2	50	202.5+202.5
12	9.6	50	360+360
24	19.2	50	1440+1440

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

UL/CUL	8A 250VAC at 85°C 5A 30VDC at 85°C 10A 250VAC at 40°C TV-3 125VAC at 40°C 800W 277VAC Tungsten at 40°C 4A 277VAC Standard Ballast at 40°C
	VDE
	8A 250VAC at 85°C 5A 30VDC at 85°C

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

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



HONGFA RELAY

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

2025 Rev.1.00

## ORDERING INFORMATION

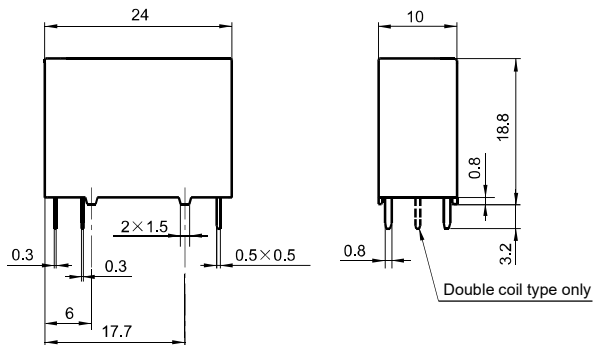
Type	HF163F-L/	12	-H	L2	T	(XXX)
Coil voltage	3, 5, 6, 9, 12, 24VDC					
Contact arrangement	H: 1 Form A					
Coil type	L1: Single coil latching		L2: Double coils latching			
Contact material	T: AgSnO <sub>2</sub>					
Special code <sup>3)</sup>	XXX: Customer special requirement					

- Notes:**
- 1) For clean environment (free from contamination, such as H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, dust, etc.), flux proofed type is recommended. For contaminated environment, plastic sealed type is recommended and shall be confirmed in actual application.
  - 2) If water cleaning or surface treatment is required after assembling relay on print circuit board, please contact us to confirm the suitable soldering conditions and specifications.
  - 3) The customer special requirement express as special code after evaluating by Hongfa. e.g.(335) stands for product in accordance to IEC 60335-1 (GWT): e.g.(470) stands for product which is suitable for reflow soldering.
  - 4) For gold-plating contacts, the minimum load shall be 10mA 5VDC.

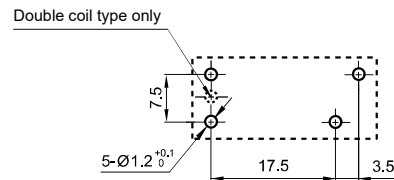
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PCB LAYOUT

Unit: mm

Outline Dimensions



PCB Layout  
(Bottom view)



- 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.

## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PCB LAYOUT

Unit: mm

Wiring Diagram  
(Bottom view)

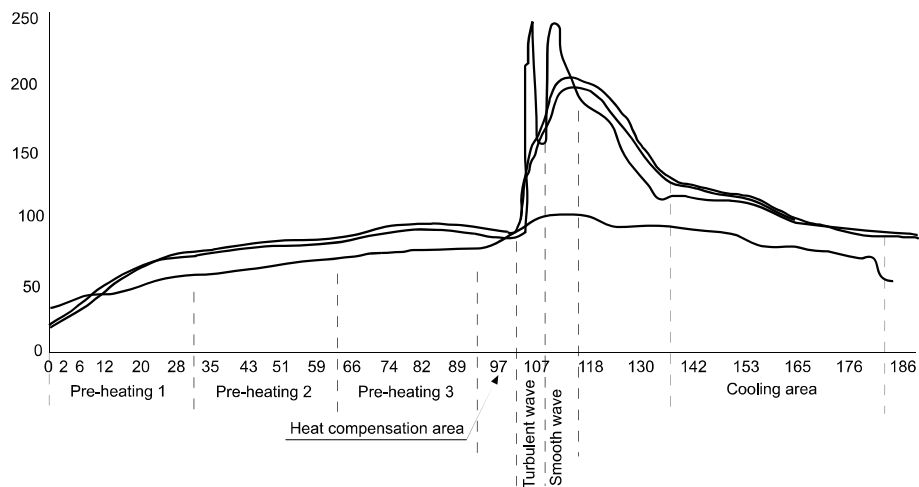
Reset Status



## 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 for PCB termination. 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.
4. Keep the product away from strong magnetic field during transportation, storage and application, to avoid change of set/reset voltage.

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.