

HF166F-G

MINIATURE HIGH POWER LATCHING RELAY



File No.: R50280244



File No.: E133481



Features

- Latching relay
- 4.5mm contact gap
- 1 Form A 1 Form B
- 40A loading current capability
- UL insulation system:Class F
- Outline Dimensions:(50×20×27) mm

RoHS compliant

CONTACT DATA

Contact arrangement	1H1D
Contact resistance(initial)	≤200 mV(20A 6VDC)
Contact material	AgSnO ₂
Contact rating(Res. load)	Making 16A Loading 40A Breaking 16A 277VAC
Max. switching voltage	277VAC
Max. switching current	25A
Max. switching power	6925VAC
Mechanical endurance	1×10 ⁵ OPS
Electrical endurance	≥1×10 ⁴ OPS (85°C, 1s on 9s off, Making16A Loading40A Breaking16A 277VAC, Resistive load)

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

CHARACTERISTICS

Insulation resistance	1000MΩ(500VDC)
Dielectric strength	Between open contacts 2500VAC 1min
	Between coil & contacts 5000VAC 1min
Surge voltage (Between coil & contacts)	10kV(1.2/50μs)
Set time(at rated. volt.)	25ms max.
Reset time(at rated. volt.)	25ms max.
Shock resistanc	Functional 196m/s ²
	Destructive 980m/s ²
Vibration resistance	10Hz to 55Hz DA 2mm
Humidity	5% to 85%RH
Ambient temperature	-40°C to 85°C
Termination	PCB
Unit weight	Approx.45g
Construction	Flux proofed

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

COIL

Coil power	1 coil latching: Approx. 1.2W 2 coil latching: Approx. 2.4W
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COIL DATA

23°C

Single coil magnetic latching relay

Rated Voltage VDC	Operation voltage ¹⁾ VDC max.	Reset Voltage ¹⁾ VDC max.	Coil Resistance Ω
5	4	4	20.8 × (1±10%)
6	4.80	4.80	30 × (1±10%)
12	9.60	9.60	120 × (1±10%)
24	19.20	19.20	480 × (1±10%)
48	38.40	38.40	1920× (1±10%)

Double coil magnetic latching relay

Rated Voltage VDC	Operation voltage ¹⁾ VDC max.	Reset Voltage ¹⁾ VDC max.	Coil Resistance Ω
5	4	4	10.4 × (1±10%)
6	4.80	4.80	15 × (1±10%)
12	9.60	9.60	60 × (1±10%)
24	19.20	19.20	240 × (1±10%)
48	38.40	38.40	960× (1±10%)

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

SAFETY APPROVAL RATINGS

UL/CUL	Making16A, Loading40A, Breaking16A, 277VAC, Resistive load, 85°C 25A, 277VAC/250VAC/125VAC, Resistive load, 85°C 25A, 60VDC, Resistive load, 85°C 0.5A, 240VDC, Resistive load, 85°C
TÜV	Making16A, Loading40A, Breaking16A, 277VAC, Resistive load, 85°C 25A, 277VAC/250VAC/125VAC, Resistive load, 85°C 25A, 60VDC, Resistive load, 85°C 0.5A, 240VDC, Resistive load, 85°C

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

2) Only some typical rating are listed above.If more details are required,please contact us.



HONGFA RELAY

ISO9001, IATF16949, ISO14001, ISO45001, IECQ QC 080000, ISO/IEC 27001 CERTIFIED

2025 Rev. 1.00

ORDERING INFORMATION

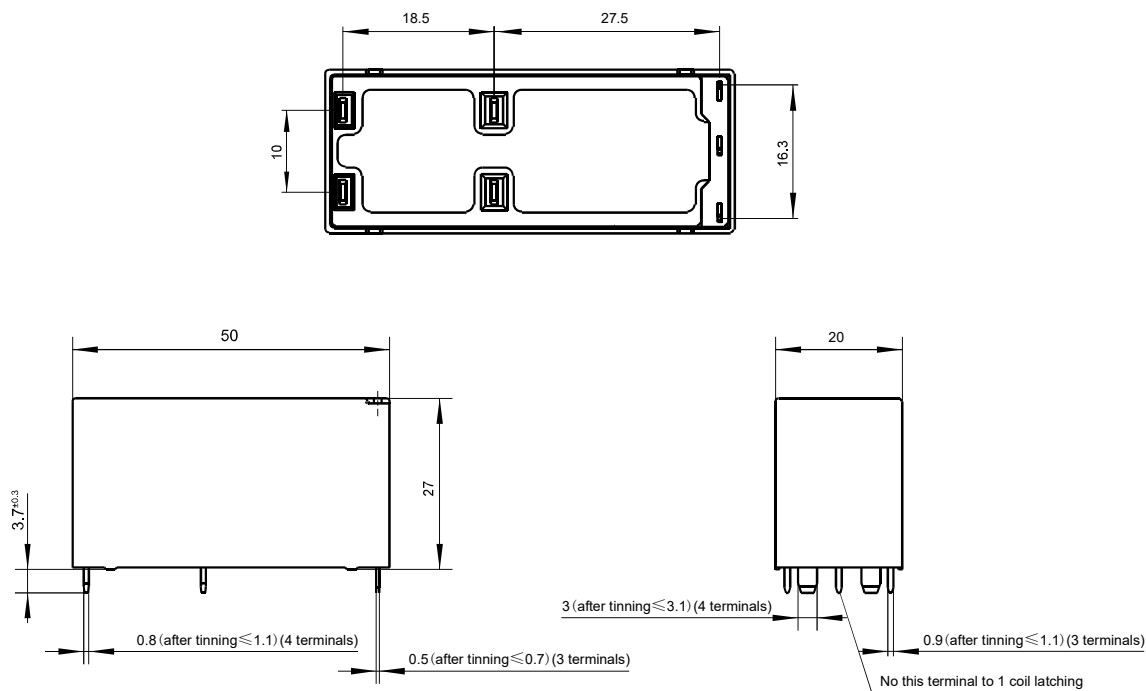
Type	HF166F-G	/12	-1HD	L2	T	(XXX)
Coil voltage	5, 6, 12, 24, 48VDC					
Contact arrangement	1HD: 1 Form A 1 Form B					
Construction	L1: 1 coil latching L2: 2 coil latching					
Contact material	T: AgSnO ₂					
Special code ⁴⁾	XXX: Customer special requirement		Nil: Standard			

- Notes:** 1) Please avoid using the relay in an environment containing organic silicon, otherwise the entry of organic silicon into the relay may acceleration contact failure. If there are harmful substances and elements such as water vapor, H₂S, SO₂, NO₂, Cl, P, etc. In the use of environmental gases, it may lead to increased contact resistance and poor contact during the use of relays. In the above situations, please control the materials or use plastic sealed type and arrange relevant tests to confirm:
 2) Water cleaning or surface process is not suggested after the flux-proofed relays are assembled on PCB;
 3) The customer special requirement express as special code after evaluating by Hongfa.

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

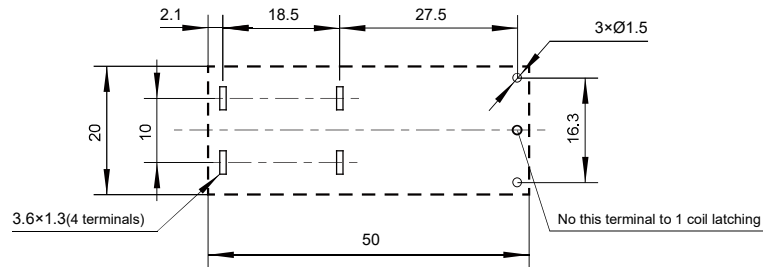
Outline Dimensions



OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

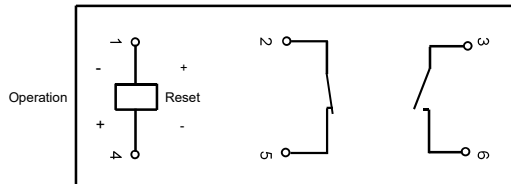
Unit: mm

PCB Layout(Bottom view)

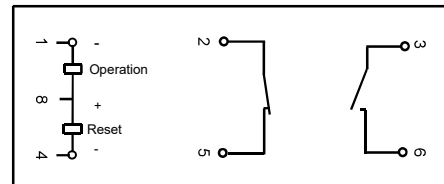


Wiring Diagram(Bottom view)

1 coil latching



2 coil latching



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 tolerance without indicating for PCB layout is always $\pm 0.1\text{mm}$.

Notes:

- 1) Relay is on the "reset" 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) Keep the product away from strong magnetic field during transportation, storage and application, to avoid change of set/reset voltage.

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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